



National Wilderness Steering Committee



Guidance White Paper Number 3

Issue: Minimum Requirements Decision Process

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Introduction to the Issue

Even wilderness must be administered. There are numerous administrative actions essential for the management of wilderness and there are often necessary reasons for using various methods or tools, or transporting materials or administrative personnel in wilderness. Scientific research may require instruments, administrative and historic structures, trails, bridges or other facilities require maintenance, and managing visitor use requires a variety of administrative actions. The Minimum Requirements Decision Process is a format to analyze and develop the administrative response to determine what action, if any, is needed to accomplish the wilderness management objective, and then determine the response that least impacts the letter and spirit of the Wilderness Act.

The term “Minimum Requirements” comes from Section 4 (c) of the Wilderness Act, which states “...except as necessary to meet *minimum requirements* (emphasis added) for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.”

The Minimum Requirement Decision Process involves two steps. The first step must be completed in order to determine if the second step is even needed. The **first step** is to determine **if any administrative action is necessary** to meet minimum requirements for administration of the area for the purpose of the Wilderness Act. If an action is deemed necessary, the **second step** is to determine the **minimum activity** (method or tool) needed to accomplish the action which will have the least impact to the wilderness resource, character, and purposes.

Is the Action Necessary?

The first step should start with the proposal or an issue that needs to be resolved, and from that, determine what action, if any, is the minimum necessary to accomplish the wilderness management objective. Consideration must be made as to whether the overall benefits outweigh the potential impacts, as most management actions will have some impact on wilderness character. This step walks through a series of screening questions derived from the Wilderness Act and agency policy to help make a decision. For example, is the action an emergency, are there valid existing rights or special provisions that allows consideration for the action, does it conform to agency policy, management plans, or any other guidance, are there options outside wilderness, how would it support the public purposes of wilderness and how would the action contribute to the preservation of wilderness character? The preservation of wilderness character is mentioned four times in the Wilderness Act and any potential impact to it must be considered carefully. The four main components of wilderness character as indicated by the Act include “untrammled”, “undeveloped”, “natural”, and “outstanding opportunities for solitude or a primitive and unconfined type of recreation.”

What is the Minimum Activity? (previously “Minimum Tool”)

The second step asks how the necessary action, determined by the first step, will be accomplished. What is the least intrusive tool, equipment, device, force, regulation, or practice that will achieve the wilderness management objective and that best honors the purposes of the Wilderness Act? This is not the same as the terms “primitive” or “traditional” tools, which refer to the actual equipment or methods that make use of the simplest available technology (i.e., hand tools) although it may include the use of those tools. The challenge is deciding upon the minimum activity (which should include as few, if any, of the 4 (c) prohibitions) necessary to get the work accomplished while ensuring specific benefits outweigh specific impacts, having the least negative affect on wilderness.

Since all the agencies that manage wilderness, including National Parks with designated, recommended, proposed, study, eligible or potential wilderness, must apply the minimum requirements process, the Arthur Carhart National Wilderness Training Center has produced an interagency Minimum Requirements Decision Guide. Other formats may be used, such as the examples in NPS Reference Manual #41 which may be adopted or modified.

This discussion is not intended to replace the Minimum Requirements Decision Guide (from Arthur Carhart National Wilderness Training Center) or other approved Minimum Requirements Decision Processes, but is intended to provide supplemental guidance for those managers using that process.

Relevant Laws and Policies

A clear understanding and appreciation of the purposes and definitions contained in the 1964 Wilderness Act are necessary before considering appropriate management actions in wilderness.

The purpose of the Act as stated in Section 2 (a) is, "...to secure for the American people of present and future generations the benefits of an enduring resource of wilderness." Continuing in Section 2(a), Congress directs us to administer wilderness areas "... for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness..."

Section 4(a) states "The purposes of this Act are hereby declared to be within and supplemental to the purposes for which national forests and units of the national park and wildlife systems are established and administered..." We are directed to recognize, and take into consideration, those other purposes for which an area may have been established, while there is a supplemental responsibility for preserving wilderness character.

Section 4(b) reemphasizes the direction of preserving wilderness character stating, "Except as otherwise provided in this Act, each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area..." It continues "... and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character." This recognizes that wilderness areas are created within parks, forests and other federal lands which have other purposes and that wilderness character must be protected.

Section 4(b) concludes by listing the public purposes of wilderness, stating "Except as otherwise provided in this Act, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use." The other purposes of the unit and public purposes are acknowledged within this section while it makes clear the area is to be protected for the future, particularly its wilderness character. Thus, we are to manage wilderness as a whole, a single resource of wilderness, taking into consideration the sum of its parts.

Section 4 (c) of the Act prohibits certain activities in wilderness except under certain circumstances. Section 4 (c) states: "...except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area."

In the above language, Congress acknowledged that even though certain activities are prohibited, there are times when exceptions to these prohibitions will need to be made for "...administration of the area for the purpose of this Act..." That purpose is to "...to secure for the American people of present and future generations the benefits of an enduring resource of wilderness."

When determining the minimum requirement for a proposed action, the manager will strive to minimize the extent of adverse impact associated with accomplishing the necessary wilderness objective. The determination as to whether or not an action has an adverse impact on wilderness must consider the social/biological/physical components of the wilderness resource, the

wilderness character, values, purposes and the visitor experience. These characteristics, values, and purposes derived from Section 2 (c) and 4(b) of the Wilderness Act include:

1. Natural - “land retaining its primeval character and influence” and “protected and managed so as to preserve its natural conditions”
2. Undeveloped – “without permanent improvements or human habitation”, “with the imprint of man’s work substantially unnoticeable,” and “where man himself is a visitor who does not remain.”
3. Solitude/Primitive Recreation – “outstanding opportunities for solitude or a primitive and unconfined type of recreation”
4. Untrammeled – “an area where the earth and its community of life are untrammeled by man” and “generally appears to have been affected primarily by the forces of nature.”
5. Wilderness Character – “Except as otherwise provided in this Act... to preserve its wilderness character.”
6. Public Purposes – “Except as otherwise provided in this Act... devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use.”

Temporary roads, motor vehicles, motorized equipment, landing of aircraft, mechanical transport and structures and installations are specifically prohibited except as necessary to meet the minimum requirements for the administration of the area for the purpose of the Wilderness Act. The minimum requirements process cannot be used to permit permanent roads or commercial enterprises within wilderness. Such exceptions are only appropriate when authorized by specific legislation. Section 4(d)(6) of the Wilderness Act, Special Provisions, does allow that commercial services may be performed “... to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas.” In addition, all the other special provisions in Section 4(d) need to be reviewed to determine if any are applicable.

The minimum requirements policy applies to all classifications of Wilderness; designated, recommended, proposed, study, eligible and potential. The only exception is for areas that have been found eligible, but for which, after completion of a wilderness study, the Service has not proposed for wilderness designation. However, those lands will still be managed to preserve their eligibility.

NPS Management Policies: 6.3.5 Minimum Requirement states that all management decisions affecting wilderness must be consistent with the minimum requirements concept. This concept is a systematic process used to determine if administrative actions, projects, or programs affecting wilderness character, resources or the visitor experience are necessary, and if so how to minimize the resulting impacts.

In addition, administrative actions which include alternatives that propose the use of any of the prohibited uses listed in Section 4(c) of the Wilderness Act, have the potential to impact wilderness resources or values, or are identified by other sections of Chapter 6 require a documented minimum requirements analysis.

For example, a proposed administrative action that may result in an exception to a prohibited use (i.e., chainsaw, power drill or generator use, aircraft use, motor vehicle use, radio repeater site, patrol structure, weather/snow monitoring station), must be consistent with an approved Wilderness Stewardship Plan and/or be documented in writing following the park's established Minimum Requirements Decision Process. The minimum requirements analysis will be incorporated as part of the appropriate integrated park, environmental and cultural resource compliance process (i.e., project clearance, categorical exclusions, environmental assessment/FONSI, or an environmental impact statement/Record of Decision).

Additionally, wilderness managers may have subsequent legislation that modifies or overrides provisions of the Wilderness Act for their individual area. The Alaska National Interest Lands Conservation Act (ANILCA) is the most sweeping of such laws. The way these subsequent laws alter the provisions of the Wilderness Act must be taken in to account in the Minimum Requirements Decision Process for the affected area(s). Refer to the *Alaska Supplement to the Minimum Requirements Decision Guide* for adapting the process to Alaska wilderness units.

Analysis and Guidance

Managing with the minimum requirements is all about keeping the wild in wilderness. Any park or wilderness manager wants to get the most benefit from the limited dollars they have to manage the wilderness. Yet they still have to operate within the confines of the law, policy and the public trust. Keeping wilderness wild is like keeping air and water clean. There is a cost involved with air and water pollution control, but society requires clean air and water enough to demand those controls. Likewise, there is a cost to keeping wilderness wild and our wilderness managers have a responsibility to provide the leadership to ensure their own actions do not significantly degrade that wildness. The Wilderness Act places specific and unique constraints on what constitutes appropriate management actions, activities and tools in wilderness. The following portion of this paper gives some guidance for Minimum Requirements/Minimum Activity decisions for a variety of circumstances park managers may encounter.

Step One: Is the proposed management action necessary?

The first step is to look the proposal or issue that needs to be resolved, determine what sorts of alternatives there might be to address it, and then determine what proposed action might meet minimum requirements for administration of the area for the purpose of the Wilderness Act. Consider whether the overall benefits outweigh potential impacts in a manner so as to leave the area unimpaired for future use and enjoyment as wilderness. It is important not to start with the "solution" and then use the minimum requirement process to justify it. The process is meant to be an analysis.

The following criteria should be used to make these determinations:

- Is it an emergency?
- Is the proposal/issue subject to valid existing rights, private or state land, or mining claims?

- Is there a special provision in the Wilderness Act that applies?
- Does a provision of legislation allow for it (such as exceptions granted in ANILCA or other statute)?
- Can the proposal/issue be resolved outside wilderness? (For example through the use of regulations, providing information, or alternate locations for research.)
- What do agency policy, management plans, official agreements say?
- If the proposal/issue is not resolved or action not taken will:
 - natural processes be adversely affected?
 - solitude or primitive and unconfined type of recreation be threatened?
 - evidence of human manipulation, permanent improvements, or human habitation be substantially noticeable?
- Does addressing the proposal/issue:
 - protect the wilderness as a whole as opposed to a single resource?
 - contribute to protection of an enduring resource of wilderness for future generations?
 - preserve wilderness character (untrammled, undeveloped, natural, outstanding opportunities for solitude or a primitive and unconfined type of recreation)?
 - contribute to understanding wilderness character or values at a larger scale?
 - support recreational, scenic, scientific, educational, conservation, and historical use in a wilderness context?
- Is it a proposal/issue for reasons other than convenience or cost of administration?
- How does the proposal/issue integrate with other environmental and cultural resource compliance processes?

Step Two: If the action is appropriate and necessary in wilderness, what is the management activity (method or tool) that causes the least amount of impact to the wilderness resources, character, and purposes?

Generally, if the work can be accomplished with non-motorized equipment/tools, non-mechanical transport or without one of the other Section 4 (c) prohibitions that is the minimum activity. This at least should be the default starting place when making decisions about what methods or tools should be used in wilderness. From there, an overriding factor would be necessary to warrant an exception to the prohibitions stated in Section 4(c) of the Wilderness Act, "... there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation..." That decision must be based on whether the administrative action is:

- an emergency involving the health and safety of persons within the area, or...
- minimum necessary to manage the area for the purpose of the Wilderness Act which preserves its wilderness character and for such other purposes for which it was established, and can not be performed without the use of a Section 4 (c) exemption, or...
- minimum necessary to manage the area for the purpose of the Wilderness Act which preserves its wilderness character and for such other purposes for which it was established, and the use of one of the Section 4 (c) exemptions has fewer impacts on wilderness character, resources, and purposes than the prohibited use method of performing the work.

This subjective guidance requires some examples to help clarify and interpret these complex considerations.

Why is planning for administrative actions in wilderness so critical and how do you weigh cost and efficiency in the equation?

Managing wilderness consistent with the Minimum Requirements doctrine can incur additional costs in term of time, money and manpower in some situations.

Adequate advanced planning may be able to take into account any additional costs that might be necessary to meet the minimum requirements/minimum activity. If the cost difference between motorized and non-motorized activities is substantial, the alternatives should be refined as early in the planning process as possible, and evaluated in a Minimum Requirements Decision Process. Don't wait until you have the funding to do the Minimum Requirements Decision Process, do it as early as possible, preferably prior to requesting funds. Complete it prior to requesting funds especially for actions that have a significant cost difference between actions which use Section (4) exceptions such as motorized equipment, mechanical transport, structures or installations so the affects on wilderness resources and character can be factored into the equation. If extra funding for Section 4 (c) exceptions is needed and deemed essential, then it can be included in the funding request. However, do not assume one technique will be more expensive until performing a good analysis to determine costs. This analysis may also promote creative solutions. If you can't complete a Minimum Requirements Decision Process prior to requesting funding, then request funding that will cover the most expensive mode of operation.

It is worth reiterating the general guidance from NPS Management Policies: 6.3.5 Minimum Requirement which states that management decisions affecting wilderness must be consistent with a minimum requirements concept and when determining minimum requirements, the potential disruption of wilderness character and resources will be considered before, and given significantly more weight than, economic efficiency and convenience. If a compromise of wilderness resource or character is unavoidable, only those actions that preserve wilderness character and/or have localized, short-term adverse impacts will be acceptable.

Sometimes there just isn't enough money, despite the best advance planning. Then the superintendent must at least ensure the staff has creatively considered all options. They must decide whether the action should proceed, and if so, how it should be accomplished. These are difficult decisions, but they must be made with affirmative wilderness leadership. Mitigations, such as establishing a commitment to prevent recurrence of the situation, will be important to include in the decision if possible.

Is Minimum Requirements just about motorized equipment/mechanical transport activities?

All management decisions affecting wilderness should consider the minimum requirements concept. Administrative actions which include alternatives that propose any of the prohibited uses listed in Section 4(c) of the Wilderness Act, have the potential to impact wilderness

resources or values, or are identified by other sections of Chapter 6 require a documented minimum requirements analysis.

In accordance with this policy, superintendents will apply the minimum requirements concept in the context of wilderness stewardship planning, as well as to all other administrative practices, proposed special uses, scientific activities, and equipment use in wilderness. (NPS Management Policies: 6.3.5 Minimum Requirement)

Minimum Requirement is required for routine day to day actions. Once an action is determined to be necessary, all “tools” proposed for the management activity should be considered. For instance, for a trail crew, tools can range from primitive or hand tools to chainsaws and power drills depending on circumstances. The proposed work will need to be considered within a Minimum Requirements Decision Process, which will result in the selection of the management activity (method or tool) that causes the least amount of impact to the physical resources and experiential qualities (character) of wilderness for that application. Even a trail crew in wilderness using hand tools and mules to transport their materials would need a Minimum Requirements Decision Process at some point, perhaps in the Trails or Backcountry/ Wilderness Plan. While they are inherently proposing to use minimum tools to accomplish their work (the second step of the Process), there are alternative choices within the range of what would be considered minimum tools. For example, on a muddy trail transporting materials with llamas or humans might have less impact than using mules, and that should be evaluated. See the Programmatic Minimum Requirements section at the end of this paper for more guidance regarding routine activities.

What is the minimum regulatory tool?

When establishing regulations for management of visitors in a wilderness area, there is also a minimum regulatory “tool”. That is the minimum amount of regulation that would effectively achieve the desired result for managing the area as wilderness. Additionally, the specific language in Sec. 2(c) that calls for “outstanding opportunities for solitude or a primitive and unconfined type of recreation”, begs for the lowest effective level of regulation or enforcement needed to achieve the protection of wilderness purposes, values, or character. Informing and educating visitors should be used as a less intrusive activity prior to implementing regulations. Appropriate regulations should be developed within a Wilderness Stewardship Planning Process using minimum requirements foundations, or, if planning is not available, evaluated through a Minimum Requirements Decision Process.

How are ANILCA, other legislated exceptions, and extreme circumstances addressed?

As with most complex situations there are always exceptions to the rule. Section 4(d)1 of the Wilderness Act authorizes the Secretary to make certain special provisions where legislation specifically makes them allowable. Additionally, the allowance of subsistence activities and the use of mechanical transport in Alaska are governed by applicable provisions of the Alaska National Interest Lands Conservation Act (ANILCA). The California Desert Protection Act and the legislation establishing some individual wilderness areas can modify and override provisions of the Wilderness Act. It is essential that local wilderness managers understand all statutory

amendments/exceptions and apply them appropriately in the Minimum Requirements Decision Process.

In Alaska both the Departments of the Interior and Agriculture use a process to determine and document the Minimum Requirements for agency actions within wilderness, including those actions proposed by the Alaska Department of Fish and Game. This process is generally tied to, and incorporated within, the National Environmental Policy Act reviews for compliance with a variety of laws, including the Wilderness Act. The Minimum Requirements Decision Process and Guide serve as starting points to be tailored by local decision-makers at the park level with the understanding that consideration of provisions of subsequent legislation, such as those found in ANILCA, will be incorporated. Agency decision makers in Alaska are aware that ANILCA contains special provisions for wilderness management. Those ANILCA provisions should take precedence over national administrative guidelines with broad national scope. Refer to the *Alaska Supplement to the Minimum Requirements Decision Guide* for adapting the process to Alaska wilderness units.

Some extreme circumstances are beyond the norm and may be outside a park's control. A good example would be parks with wilderness along the Mexican border that are inundated by illegal smuggling of drugs and people. The human safety issues, ecological impacts, political implications, and corresponding law enforcement activity from such unusual circumstances can't be addressed in this guidance paper, but have to be addressed on a case by case basis with the most thoughtful and careful evaluation. A Minimum Requirements Decision Process may be appropriately employed in the overall process, but social and political issues far beyond wilderness preservation are sweeping across that landscape and driving the decision-making process. It is important that land managers incorporate wilderness concerns as much as possible in these discussions despite the various pressures.

What group size limitations, camping choices, and other constraints should apply to groups authorized to work in the wilderness?

Generally, any regulations or limits that apply to recreational visitors should also apply to groups authorized to work in the wilderness/backcountry. The regulations and group size limitations are adopted to protect the wilderness resources, character, and purposes while allowing for visitation at suitable levels, and the same logic applies to those authorized to work in the wilderness. Exceptions to this concept should be made when the impacts of a smaller group in place over a longer time clearly have a greater impact. Special work projects may require a larger than normal work crew size.

The crews need to be aware of their camp impacts and establish procedures to minimize their impacts on camp locations. For example, if campfires are not allowed to protect resources, work crews should find other ways to provide for heating if possible. Work crews should strive to reduce camps to the minimum required for the health and safety of employees to reduce both visual and physical impacts. Leave No Trace skills and ethics should be emphasized in all aspects of administrative camps. Work crew activities should be analyzed using the minimum requirements process as appropriate.

What is the minimum activity (method or tool) for trail maintenance?

Traditional hand tools, non-motorized equipment and non-mechanical transport are key elements in wilderness trail work. Motorized equipment, e.g. chainsaws, power brushers and power rock drills, can be used, but their use must be analyzed in a Minimum Requirements Decision Process. NPS Policy 6.3.5 addresses economic efficiency and convenience, and the use of Programmatic Minimum Requirements is addressed toward the end of this document. During trail planning, the construction and maintenance trail standards/prescriptions can be a significant issue, and may influence what activity (method or tool) is needed or selected for maintenance or construction. In some circumstances, the higher the trail standard, the greater the inclination to use power tools. Minimum Requirements concept should be used to carefully scale the trail to be harmonious with the environment and built to the minimum necessary level. Increased training and use of primitive or traditional tools can also encourage less dependence on power tools.

To promote the use of non-motorized tools when they are determined to be the Minimum Activity, the agency or individual parks must develop a program to train appropriate staff in the skills to safely and proficiently use non-motorized tools, purchase the necessary tools, and continue using the non-motorized tools on a routine basis in their trail maintenance program. Special circumstances, such as a landslide, extremely heavy winter, or other uncommon natural event may require the use of power tools to prevent resource damage. The crux of the matter for such issues would be how long it would take to reopen a trail using various motorized or hand tool options, how much resource damage would be caused by visitors creating new trails by going around the down trees, landslide, etc., and the magnitude of trail crew camp impacts under the different options. In other words, how much resource damage will trail users and trail crew camping cause if the down trees are not cleared or landslide covered trail not rebuilt or rerouted as quickly as possible. Those considerations would have to be weighed against the type of activity (motorized or hand tool) used and the different amount of time required to complete the job, and the associated noise and fumes of the motorized tools in a wilderness setting. Other factors that weigh into the decision are using Leave No Trace techniques to mitigate crew camp impacts or putting temporary trail or area closures in place to mitigate any new visitor created impacts until the work can be completed. Such determinations have to be made in a detailed Minimum Requirements Decision Process accompanied by proper environmental and cultural resource compliance documents.

For special projects a Minimum Requirements Decision Process may be appropriate for approving the repeated use of the generally prohibited activities (method or tool). An example might be a trail rehabilitation project that will require large volumes of aggregate and logs for bridge rehabilitation. An analysis may show the use of a helicopter could have fewer impacts than transporting the materials by pack stock.

What is the minimum activity (method or tool) for preserving historic structures?

While historical use is one of the public purposes specified in the Wilderness Act, it is not given special exemption for maintenance and preservation work. Accordingly, such work must be evaluated just like all other work in wilderness. Once again, if the work can reasonably be done with traditional hand tools, non-motorized equipment or non-mechanical transport, those will

generally be the minimum activity. An additional consideration is historic fabric and workmanship. Decisions must be weighed in a Minimum Requirements Decision Process.

What is minimum mode for transporting materials or people?

A variety of materials, as well as people, need to be transported in wilderness. Maintenance materials and tools, human waste, or scientific instruments are commonly moved in some busier wilderness areas. Non-motorized equipment and non-mechanical transport should be the default when considering alternatives to accomplish the job. However, in some situations, motorized equipment or mechanical transport may be the minimum requirement, or chosen due to safety issues. For instance, a helicopter may be needed for surveys or moving unwieldy materials such as bridge building materials over very difficult terrain which would be dangerous to pack on a mule. The essential questions again are whether the action is truly necessary, and whether long term benefit clearly outweighs the short term impact.

If transportation is required that calls for Section 4 (c) exemptions, they must be analyzed in a Minimum Requirements process. Alternatives such as use limitations, alternative technology, or creative construction should be fully considered in this as in any minimum requirements discussion. Can the material be broken down into smaller pieces, or should the activity that is requiring the prohibited use continue? Can use be reduced or dispersed to minimize the problem? Is there new technology, such as satellites, that can be used instead of transporting and installing repeaters? These sorts of questions should be asked before any action is approved. If the activity is appropriate and necessary, and if it is a single use or project related, sideboards or specific constraints must be established to prevent the use from becoming the norm. However, if the method of transport is required for a necessary administrative action that is a recurring event, these uses may perhaps be considered programmatically. For instance, high angle rescue can only be practiced using a helicopter for certain circumstances. This activity could be considered for approval for a set period without requiring analysis each time the activity occurred. Allowance to use 4c exemptions should only be made with carefully analyzed and documented conditions. Constraints and sideboards about the use must be specific.

What is the minimum activity (method or tool) for emergencies, including search and rescue?

The parenthetical phrase in the Act “(including measures required in emergencies involving the health and safety of persons within the area)” adds emphasis that Congress clearly intended emergencies to be situations in which motorized equipment and mechanical transport were appropriate if needed. Most Minimum Requirements Decision Processes start with a question about whether the proposed action is an emergency involving the health or safety of people. Such situations could include search and rescue operations, medical treatment or evacuation of injured individuals, searches for felons who could pose a danger to other people, law enforcement for resource protection, wildland fire suppression (discussed in the next section), and warning wilderness users of impending hazards like fire, floods, volcanic eruptions, etc.

What constitutes an emergency needs some clarification. Emergencies are not planned in advance; they do not have a beginning or ending date. Emergencies have an immediate threat to

life or resources or property. Normal, necessary, and planned actions are not emergencies. Every law enforcement action is not necessarily an emergency. For example, once it is determined that there are no survivors in a plane crash and the operation is a body recovery it is not necessarily an emergency, nor is a crime scene that has just been discovered but is years old. Searching for illegal marijuana plantations may be effectively done using remote sensing in some circumstances, rather than using helicopters by default. Such decisions should not be left to the last minute, but should be thoughtfully addressed in the planning process.

Once the situation ceases to be an emergency, the appropriate minimum activity to perform the work changes. This common sense change should be evaluated by the park staff in the Minimum Requirements Decision so that the transition is made smoothly. Parks would be advised to make policy definitions of when an emergency is over and the appropriate minimum activity to perform the work changes. Planning processes would be the appropriate forum for that decision.

For example, if emergency response crews, e.g. search and rescue or fire crews, need to be available to respond in case another emergency arises, then flying them out at the end of an emergency, rather than having them hike or ride horses out, may be appropriate. That detailed policy decision should be made using the Minimum Requirements Decision Process during the development of Wilderness/Backcountry Management, Fire Management or Emergency Operations (SAR) plans. That way, appropriate minimum activities which should be used during emergency operations are identified well in advance of an actual emergency, and additional analysis will not be necessary.

What are the minimum activities (method or tool) in fire management?

Section 4(d)(1) of the Wilderness Act allows fire suppression in designated wilderness, stating that “such measures may be taken as may be necessary in the control of fire, insects, and diseases, subject to such conditions as the Secretary deems desirable.” While the use of motorized equipment, mechanical transport or any other Wilderness Act Section 4 (c) prohibition, is not necessarily barred in the management of fire, there should still be a carefully evaluation of need before it is employed. In this way, the management of fire is no different than any other administrative action taken in wilderness.

According to the May 2005 *Wildland Fire Use Implementation Procedures Reference Guide*, wildland fire use is now considered to be an emergency, as is wildfire. Wildland fire use fires are natural ignitions allowed to burn and used to achieve resource management objectives. Much of what applies to other emergencies for example (in the above section) also applies to determining the appropriate course of action for managing wildland fires. Prescribed fires are considered to be planned events and are not emergencies.

Management actions on a wildland fire are derived from the Fire Management Plan and its environmental compliance documents. The Fire Management Plan, in turn, supports resource management planning documents, including the Wilderness Stewardship Plan, which in turn supports the unit’s General Management Plan. Fire management decisions, and the costs of these decisions, are affected by the description of desired conditions found in these documents,

and by the need to suppress or allow the fire to burn, to achieve these conditions. Minimum Requirements should be a component in any planning process. It is therefore very important that the various park management plans link together to guide fire management decisions. It is critical that wilderness and fire managers work jointly during the development of not only Fire Management Plans but also during the development of tactical fire planning documents such as Wildland Fire Situation Analysis' for wildfires and the Wildland Fire Implementation Plans for wildland fire use fires. The process for evaluating tactical activities, consistent with the Minimum Requirements Concept, should be a component of the Fire Management Plan. The identification and analysis of specific tactics should be developed within Wildland Fire Situation Analysis' and Wildland Fire Implementation Plans.

The key to preserving a park's wilderness character and resources is through proper advanced fire management planning that incorporates the Minimum Requirements Concept. Preferred fire management techniques may include monitoring wildland fire use fires, and conducting prescribed fire and mechanical treatments to protect park resource and wilderness values that are at risk from unnaturally intense wildland fire and associated suppression tactics.

Park fire management plans should pre-identify sensitive areas where retardant cannot be used unless human life is at stake (waterways, seeps, cultural resources, etc.). Additionally, planning should identify areas where camps or helispots should not be made. Wildland fire management requires preplanning to mitigate damage caused by management actions, and to reduce the need for extensive burned area rehabilitation.

In advanced planning, issues like the method of igniting a prescribed fire can be properly evaluated, and effects on wilderness character and resources, including cultural and natural resources, may be evaluated and, if needed, mitigated. For landscape scale prescribed fire planning, aerial ignition with its noise and presence of mechanical access must be evaluated alongside using hand crews with their camp and pack stock impacts, and especially in regard to safety issues associated with igniting prescribed fires in rugged terrain with hand crews versus aerial ignition. Prescribed fire can be used to replace wildland fires that could not be allowed to burn, so evaluating the overall effectiveness of such alternatives is critical.

For suppressing wildland fire, the least damaging methods and equipment should be applied, consistent with public and firefighter safety and the protection of any nearby development or other values at risk. For example, hand-built fire lines and backfires are preferred over the use of heavy equipment. In general, heavy equipment should not be allowed without written approval of the Superintendent; and this requirement should be outlined in the Fire Management Plan. However, for routine wildland fire suppression operations, if determined necessary, chainsaws or aircraft may be used in wilderness, though the use should be kept to a minimum. When aircraft are used to suppress fire, water drops are preferable over chemical fire retardants. The application of such minimum requirement strategic and tactical options needs to be made in the fire management planning process that includes a Minimum Requirements Analysis.

Monitoring a wildland fire may require the use of aircraft. The daily monitoring required for fires being monitored instead of suppressed should be done with staff that hike in and camp near the fire or with remote still or video cameras instead of aircraft overflights whenever possible.

A prescribed burn, which is planned and not an emergency, should be treated very differently from a wildland fire suppression operation. It allows an opportunity for greater finesse. While it is clear that motorized equipment may be considered appropriate for prescribed burns, the park planning a prescribed burn has an opportunity to define the minimum activity necessary to conduct the operation with hand tools or some combination of hand and motorized. Chainsaws, aircraft, etc. may be stationed nearby and ready for use in case the fire gets out of prescription. These decisions need to be made in the fire management planning process that includes a Minimum Requirements Analysis; again, wilderness and fire managers must work together in the development of this document.

The *Interagency Standards for Fire and Fire Aviation Operations* (revised annually) includes an appendix on Minimum Impact Suppression Tactics. It emphasizes selecting procedures, tools, and equipment that have the least impact on the bio-physical environment. It also provides guidelines for the delivery of retardant or foam near waterways and in threatened and endangered species habitat that are designed to reduce impacts to the natural environment. These tactics should be applied during wildfire, wildland fire use or prescribed fire activities in wilderness.

What are minimum requirements for scientific research, resource management, and monitoring of cultural and natural resources?

Wilderness provides an increasingly unique opportunity to learn about the composition, structure, and functioning of relatively natural ecosystems. Scientific activities are one of the stated purposes described in the Wilderness Act. As with any other administrative action in wilderness, the same types of considerations have to be evaluated for research, resource management, and monitoring of resources in a Minimum Requirements Decision Process.

If the proposed action is determined necessary, alternative activities (methods and tools) for conducting the research or monitoring must be evaluated, including alternatives for instrumentation and data collection, and an evaluation of alternative locations that may be outside the wilderness or park. For example, a decision might be made to authorize a snow survey station, but access might be limited to skis only. The installation of a temporary water chemistry data logger may be the only feasible way to collect the desired data, but can it be located out of sight from visitors, so it does not damage natural resources, or perhaps even outside the park or wilderness? Careful evaluation of alternatives needs to be done, including an analysis of cumulative effects. Managers should consider thresholds for cumulative effects, and establish sunset dates and specific removal requirements if the preferred alternative involves installations in wilderness.

If wildlife or plants are proposed to be killed for the research, examining all feasible alternate methods of collecting the data or whether the research can be done outside the park needs to be carefully considered. Even if disruption to wildlife from capture and tagging is required, alternate locations or methods should be evaluated. Evaluating the efficacy of the research proposal and alternative methods of conducting it will require critical examination by qualified scientists. If they are not on the park staff they will have to be found outside the park.

Three filters or screening questions, in various forms, are common to evaluations and Minimum Requirements Decision Processes of proposed scientific activities in wilderness:

- Legal/Policy Filter: Is the proposed activity necessary for the administration of the area as wilderness, including the preservation of wilderness character?

This filter is essentially the same as part of the first step of the Minimum Requirements Decision Process: is it necessary? Likewise, the impacts part of the Benefits/Impacts Filter is the same as the other part of the first step of the Minimum Requirements Decision Process: does it pose substantial impacts on the wilderness where the impacts outweigh the benefits so as to impair the wilderness resource and character?

- Pragmatic/Conservative Filter: Is it necessary to conduct the proposed action in wilderness, or could it be conducted elsewhere?

Since scientific research is one of the purposes of wilderness, this filter only makes sense in the context that research or monitoring is inherently presumed to generate impacts. The question must be asked, is the research wilderness dependent, in other words, is a natural, untrammled environment really essential for this research? Thus, if it can be easily conducted outside the wilderness or park without loss of data quality or long term benefit, then it makes sense to do it elsewhere.

- Benefits/Impacts Filter: Will the proposed action yield more benefits than impacts or cause unacceptable impacts to wilderness conditions?

This filter is a guide for decisions based on assessing relative benefits and impacts. Managers would tend to approve proposed actions that provide large benefits with little impact and deny those activities that offer little or no benefit but cause considerable impacts. Also, it is suggested that proposed actions which offer few or no direct benefits and cause little impact be at least considered for approval in wilderness. These actions are relatively benign, they may provide baseline information with unanticipated utility later, and they fit under the “recreational, scenic, scientific, educational, conservation, and historical” purposes described in the Wilderness Act. It is when benefits and impacts are both high that the greatest scrutiny must be paid and the most uncertainty in whether to approve or not is encountered. Examining research proposals in this way should make apparent the specific benefits and impacts that are of greatest concern, allowing discussions about accepting or rejecting the proposal.

All scientific activities will apply minimum requirement concepts and be accomplished in compliance with Management Policies, Director’s Orders, and procedures specified in the park’s wilderness management/stewardship plan. A documented Minimum Requirements Decision must be made for projects involving Section 4 (c) prohibitions or projects which have the potential to impact wilderness resources or values.

What are minimum requirements for special park uses like utility rights-of-way, special events, and commercial filming?

Utility rights-of-way may be best administered under conditions outlined in the park's Wilderness Stewardship Plan that define limits on the use of motorized equipment or mechanical transport or other considerations. This is a difficult and complex issue that may be given guidance in the wilderness legislation of the area. Valid rights must be administered in keeping with the specific conditions and requirements of the valid right.

When the right-of-way has been placed in a Potential Wilderness Addition, Congress acknowledged the nonconforming activities. The legislation and accompanying reports may give guidance about expectations for maintenance activities, motorized access, etc.

Special events are usually addressed by the first step of the Minimum Requirements Decision: are they appropriate or necessary for the administration of the area for the purpose of the Wilderness Act, for the purposes for which it was established and to preserve the wilderness resource and character; and do not pose a substantial impact to the wilderness purposes, resource and character where impacts outweigh benefits. Per NPS policy 6.4.5, permits will not be issued for special events that are commercial enterprises or for competitive events, including activities involving animal, foot or watercraft races, physical endurance of a person or animal, organized survival exercises, war games, or other similar exercises in NPS wilderness areas. Determining the terms and conditions for an event that is acceptable in wilderness must be made using the minimum requirements process.

“Commercial film and commercial photography permits, as identified and required by 36 CFR 5.5, Section 8.6.6 of National Park Service Management Policies, and Director's Order #53, will not be approved in wilderness areas unless determined to be necessary and proper for providing educational information about wilderness uses, resources or values, or necessary for other wilderness purposes.” (Director's Order 41: Section C. 13.) A special use permit may not even be required if the commercial filming does not require any more equipment than a normal recreational visitor would be expected to use, but that is a policy decision the park would have to make. However, the most substantial issues result when commercial film crews, actors, lighting/generators, special effects, or low level flights are involved. In such cases, both steps of the Minimum Requirements Decision Process are critical. Criteria to ensure the film is genuinely “providing educational information about wilderness uses, resources or values, or necessary for other wilderness purposes” should be clearly defined, if possible in the park's Wilderness Stewardship Plan, and used to analyze each application. Sideboards, conceptual and policy information, and alternatives (including alternative locations when possible) will help film companies meet management objectives.

How is safety weighed in the decision about what activity (method or tool) to use?

Every activity (method or tool) has its safety risks which must be considered in every situation, with proper safety measures taken to reduce those risks. There are risks associated with both power tools and hand tools. Transporting material or personnel by helicopter has very different risks than packing in material with livestock or having personnel carry things on foot. Risks

could vary depending on terrain, weather, type of vegetation, time of day, number of workers or other associated factors. Do not assume one method is safer than another without a thorough analysis. Safety must come first in administrative actions and good judgment must be relied upon for a safe working environment.

Minimum requirement generally favors the use of hand tools, but discussions sometimes focus on potential safety issues. It is critical that employees are given appropriate training in the proper and safe use of the tools needed to accomplish the job. In some circumstances, high quality hand tools must be purchased and available, and employees must be adequately trained in their safe and efficient use in order to ensure the choice of these methods.

How are cumulative impacts on wilderness of administrative actions determined?

Cumulative impacts are particularly important for large, complex parks with lots of visitation and management activity in the wilderness, or conversely, in areas that are very lightly used where concentrated management activities would be of potentially greater impact to these more pristine environments. In any area, the cumulative impacts from all the individual actions can erode the wilderness resource and character. Cumulative effect should be evaluated at some level for each management action.

Cumulative effects can be addressed in long term planning or as part of annual pre-planning. The cumulative Minimum Requirements Decision Processes should evaluate the number and type of projects along with routine work, tracking location used, species involved, installations, use of motorized equipment or mechanical transport, duration of the activity or project, history of this sort of activity in the past, and impacts on wilderness resource, character, and purposes; etc. Trends from year to year should be carefully examined and estimates made for emergencies and unexpected but necessary work. Outside researchers or other permittees might be required to submit work requests by a certain date early in the year to assure this information was included as well. This cumulative information will allow the park management team to examine all uses together in the Minimum Requirements Decision Process and make a more informed decision.

This annual evaluation of cumulative impacts will assist in long term planning. Using the data and trends over the course of a few years, parks should be able to establish threshold levels for identified problem areas. For example, managers might set a threshold for the maximum number of helicopter flights per year coupled with actions to be taken if that threshold was approached or met. Or they might decide that a certain area had enough temporary scientific instrumentation, and until some installations were removed, others could not be placed. Cumulative effects may be an issue on a large scale, or on a species specific scale—appropriate monitoring of the potential for these impacts will help preserve wilderness resources and character.

What is a Programmatic Minimum Requirements Analysis, and how should this concept be used?

A programmatic minimum requirements analysis (PMRA) applies the minimum requirements concept to routine, recurring administrative activities in wilderness. PMRAs should be used for activities with similar properties that involve possible Section 4 (c) exceptions, and/or

administrative activities that have a potential to impact wilderness resources and values. Use of programmatic minimum requirements analyses will allow managers to eliminate repetitive analysis and better consider cumulative impacts.

Because a single PMRA may cover a large number of similar actions, a thorough, detailed analysis of all relevant impacts to wilderness values, with fully developed alternatives, should be performed and documented. The analysis should consider cumulative impacts and establish an acceptable range or threshold for those impacts.

The scope of a PMRA should be narrow enough to ensure that the analysis of each significant component of the action is considered in sufficient detail. Explicit sideboards should be included to prevent inappropriate use of a method or tool that is outside the scope of the analysis. Detailed mitigating measures, developed with a mandate for accountability, should be part of a Programmatic Minimum Requirements decision. A sunset date or threshold criteria that initiates a re-evaluation of the analysis is also appropriate. When either of these limits are reached or approached, the analysis should be reviewed.

A Programmatic Minimum Requirements Decision Process, like all programmatic compliance, can be a useful and effective compliance procedure that saves the park time and energy. It would most appropriately be integrated when parks are completing their Wilderness Stewardship Plans. Those parks are addressing their significant wilderness management issues (hopefully within a minimum requirements context) through that planning process, which includes public involvement and appropriate compliance. Parks without approved Wilderness Stewardship Plans may need to use programmatic compliance if they have many individual Minimum Requirements Decision Processes to evaluate each year. Integrating appropriate environmental (National Environmental Policy Act) and historic preservation (National Historic Preservation Act) compliance will depend on the complexity and circumstances of the use being evaluated, and managers should work with their compliance specialist on a case by case basis.

MINIMUM REQUIREMENTS GUIDING PRINCIPLES

The Wilderness Act is a philosophy embodied in law. It requires park managers to think and act differently than in other land classifications/designations. The philosophy of the Act is nicely presented in Sec. 2 (a) of the Wilderness Act. “In order to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States and its possessions, leaving no lands designated for preservation and protection in their natural condition, it is hereby declared to be the policy of the Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness.” Then Sec. 2 (c) defines wilderness and its values and characteristics, Sec. 4(b) reiterates wilderness purposes, and Sec. 4(c) prohibits “temporary roads, the use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation” *“except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act . . .”*

The following summary guidelines should be used to meet those minimum requirements:

- NPS employees entrusted with management of wilderness should set the highest standard possible when reviewing management practices in wilderness. To keep the wild in wilderness it must be managed differently from all other public lands and this difference needs to be demonstrated to the public by our actions.
- Minimum Requirements Decision Process should be initiated as soon as possible to determine what action, if any, is necessary to accomplish the wilderness management objective, whether the overall benefits outweigh potential impacts, and what minimum activity (method or tool) is needed if the action is to be taken. It is meant to be an analysis, not a justification.
- Early communication and understanding of the proposal/issue and the requirements for wilderness stewardship between all involved parties (the requestor, the various management decision makers, agencies, etc.) is essential.
- Appropriate consideration and protection of wilderness resources, character, and fulfilling the purpose of the Wilderness Act take precedence over cost or convenience in determining minimum requirement.
- All management decisions affecting wilderness must be consistent with the minimum requirements concept.
- Management actions which include alternatives that propose any of the prohibited uses listed in Section 4(c) of the Wilderness Act, have the potential to impact wilderness resources or values or are identified by other sections of Chapter 6 require a documented minimum requirements analysis and be in support of wilderness resources, values, and character. These would include:
 1. the minimum necessary for the administration of the area for the purpose of the Wilderness Act including preserving its wilderness character and for such other purposes for which it was established, and can not be performed without the use of the 4c prohibition, OR
 2. the minimum necessary for the administration of the area for the purpose of the Wilderness Act, which preserves its wilderness character and for such other purposes for which it was established, and the 4c prohibition activity has fewer impacts on wilderness character, resources, and purposes than the alternative.
- Measures required in emergencies involving the health and safety of persons within the area are exempt from minimum requirements processes, although administrative actions should be kept to a minimum whenever reasonable, and ended as soon as the emergency is over. It is advised to include minimum requirements analyses in a park's Emergency Operations Plan to ensure the appropriate and necessary use of any 4c prohibited use.
- Subsequent legislation, such as ANILCA, can modify or override provisions of the Wilderness Act.
- A programmatic minimum requirements analysis (PMRA) should be used for routine and/or recurring administrative actions to allow managers to eliminate repetitive analysis and better consider cumulative impacts. This analysis must be thorough and well documented, with well defined sideboards, mitigations, thresholds and ending dates.