USDA Forest Service
U.S. DEPARTMENT OF AGRICULTURE

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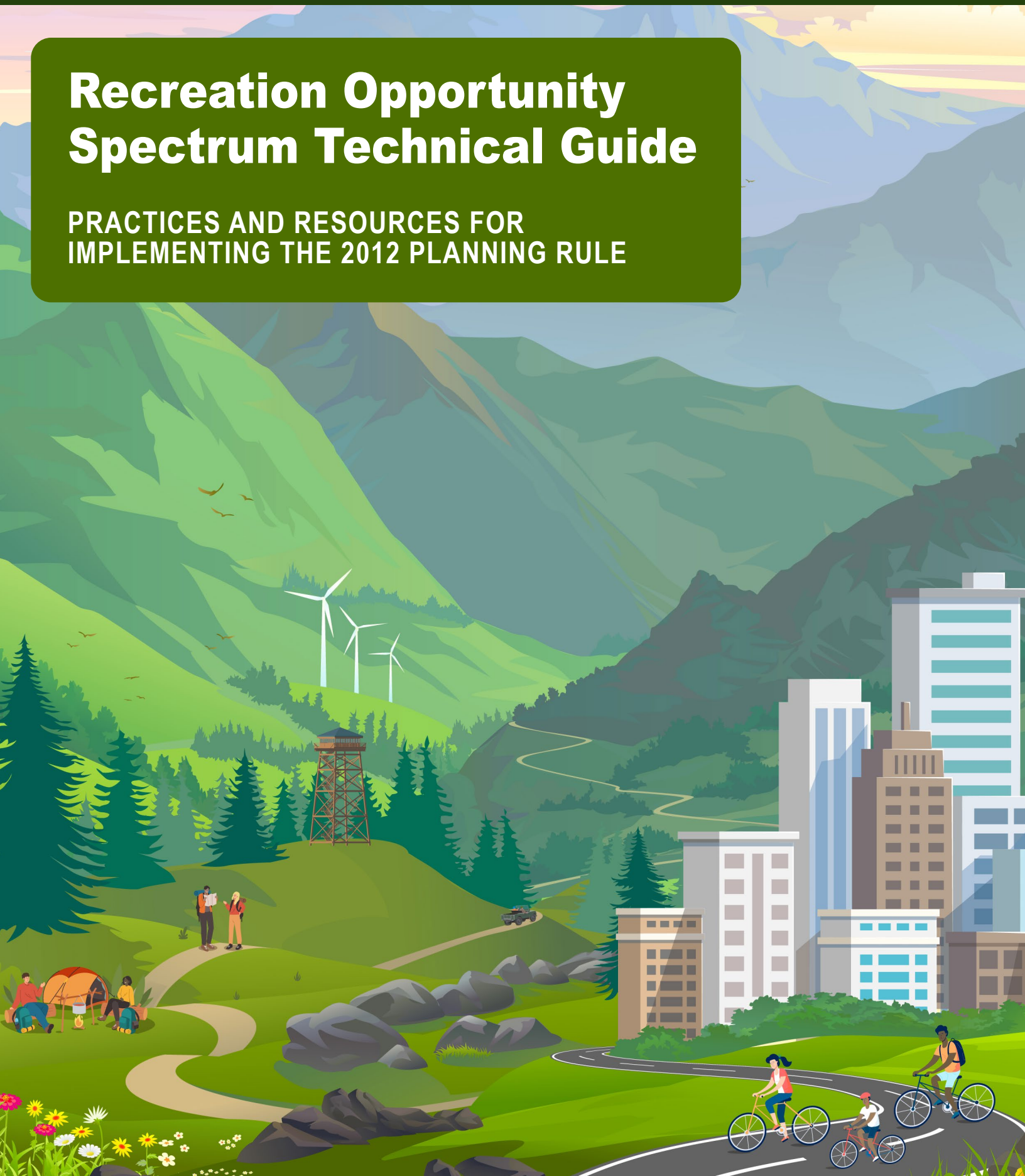
Recreation Opportunity Spectrum Technical Guide

PRACTICES AND RESOURCES FOR IMPLEMENTING THE 2012 PLANNING RULE



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CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF CALLOUTS

INTRODUCTION

The Planning Rule and associated directives require the use of the Recreation Opportunity Spectrum (ROS) throughout the land management planning process to provide for recreation settings and sustainable recreation (callout box 1). This guide provides suggested steps and tools for using the ROS during land management planning, organized by plan revision phases, and followed by examples of project-level ROS implementation. This organization shows how the ROS fits within the Adaptive Management Planning Framework.

This guide provides:

- Brief explanation of who, when, what, why, and how around ROS.
- Guidance for how unit interdisciplinary teams can develop desired ROS maps and ROS-related plan content for both summer and winter seasons.
- Example implementation of desired ROS plan content at the project- and landscape- levels during the life of a land management plan.

Callout Box 1. Planning Rule Definition: Sustainable Recreation.

Sustainable recreation: *the set of recreation settings and opportunities on the National Forest System that is ecologically, economically, and socially sustainable for present and future generations. (36 CFR 219.19 "Definitions").*

This guide is intended to foster efficient and consistent use of ROS in land management planning and assist the recreation practitioner in implementing ROS at the project-scale. However, this guide is not a stand-alone product. Refer to Forest Service Manuals (FSM 1920 and 2310) and Forest Service Handbooks (FSH 1909.12), and any region-specific guidance on conducting ROS planning (recreation-related direction in FSM 1920 and FSH 1909.12). See the **Definitions** section of this guide for commonly used recreation-related terms.

ROS is one established agency tool that informs sustainable recreation during land management planning. See the "Introduction to Sustainable Recreation in Land Management Planning" training for more comprehensive resources and considerations during land management planning. The training also provides more ROS-related details and examples throughout the Adaptive Planning Framework. The training uses the Fictional National Forest, an imaginary forest, to translate concepts into examples. Refer to these training modules for more detailed examples. See icon link in figure 1.

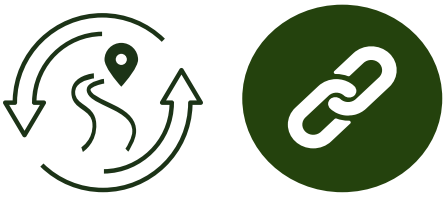

Figure 1. Quick Links. The "Sustainable Recreation 101" training quick link icon on the left and the "Definitions and Guide Links" quick link icon on the right appear throughout the document and will take you to individual training modules or the definitions section and other linked sections of the guide.

Who Is the Intended Audience?

The intended audience for the "ROS Technical Guide" is recreation planners and specialists responsible for land management planning and project-level implementation who have some familiarity with the ROS. Other audiences include resource specialists in recreation-related programs, such as scenery, access and facilities, heritage resources, recreation special uses, or designated areas. Forest planners may also use ROS in various planning phases for land management planning and may need to communicate the concept and purpose to stakeholders. The existing and desired ROS maps and descriptions may be used by Forest Service employees, including those listed above, contractors hired for National Environmental Policy Act (NEPA) planning, partners, and the general public.

What Is the Recreation Opportunity Spectrum?

ROS was originally developed in response to the 1976 National Forest Management Act requirements for integrating all uses of National Forest System lands. ROS is the Forest Service's system for managing recreation settings and environments and is embedded across the agency's regulations, policies, and directives. ROS is a management tool to define, classify, allocate, manage, and monitor existing and desired recreation settings and opportunities (callout box 2 and callout box 3). The underlying premise of ROS is that visitors choose a specific setting and activity to derive desired experience(s).

Callout Box 2. Planning Rule Definition: Recreation Setting.

Recreation setting: *the social, managerial, and physical attributes of a place that, when combined, provide a distinct set of recreation opportunities. The Forest Service uses the recreation opportunity spectrum to define recreation settings and categorize them into six distinct classes: primitive, semi-primitive nonmotorized, semi-primitive motorized, roaded natural, rural, and urban (36 CFR 219.19; FSH 1909.12 zero code).*

Recreation Settings = ROS Classes

The system has been around for a long time, and ROS concepts continue to be used across multiple Federal agencies, as well as within the international tourism field, for visitor use management and recreation planning. ROS continues to be supported in scientific and technical literature by the Society of Outdoor Recreation Professionals and researchers such as Stephen F. McCool, Roger N. Clark, George H. Stankey, John Baas, and more.

ROS encompasses six nationally defined classes that range from undeveloped, primitive settings to highly developed urban settings (figure 2). Each class and associated setting characteristics provide opportunities to engage in activities that result in different personal experiences. "Activities" means a full range of recreational pursuits on land, water, and in the air (motorized or human-powered) that might look different based on whether someone is partaking in that activity within a more developed, formalized setting like a ski area or campground versus a less developed, more wild setting like backcountry areas without any dedicated amenities.

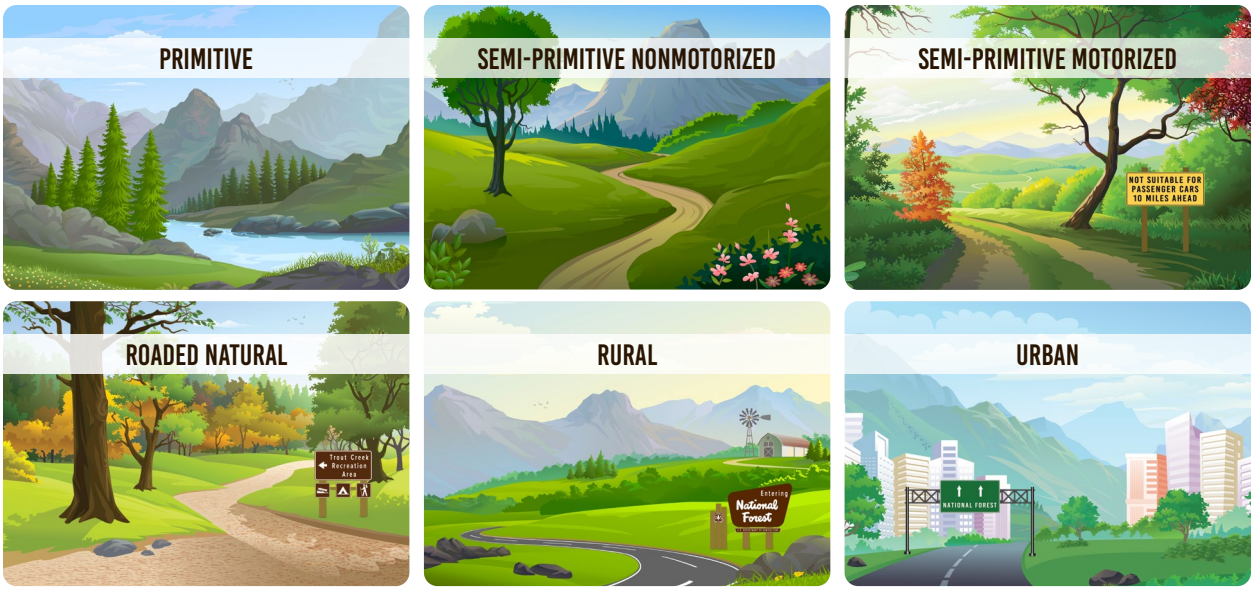

Figure 2. Definitions for the six ROS classes are found in the FSM, chapter 2310 "Sustainable Recreation Planning." Descriptions for primitive, semi-primitive nonmotorized, semi-primitive motorized, roaded natural, rural, and urban classes can also be found in the Definitions section of this guide.

ROS Setting Characteristics

Each ROS class has a distinct set of physical, social, and managerial characteristics that function collectively to define that class and associated setting (figure 3). ROS Setting Characteristics are also depicted on the Recreation Opportunity Spectrum Poster.

- Physical characteristics are about the amount of discernable human influence on an otherwise natural landscape. Remoteness, size (acreage), access, and scenic character are also attributes of physical characteristics. Remoteness is the distance from the sights and sounds of humans, most specifically areas and routes with motorized use. The acreage of an allotted setting (size) is important for some ROS classes. The type and amount of access into an area (motorized, mechanized, nonmotorized) is also notable. For more information about scenic character, see the **Definitions** section of this guide, review the "Introduction to Sustainable Recreation in Land Management Planning" course in AgLearn (Module 4b – "Scenery Management System Short Course"), or reference "Landscape Aesthetics: A Handbook for Scenery Management" and the "National Scenery Management System Mapping Protocols" (available on SharePoint here [internal]).
- Managerial characteristics are about what types of rules, restrictions, controls, or regulations exist in the setting, or lack thereof. The range of rules, restrictions, controls, or regulations provide varying degrees of visitor management and management presence. Controls can be regulatory (such as designated uses on motor vehicle use maps or permits) or physical (such as barriers or boulders to control visitor use traffic).
- Social characteristics are about the degree to which interaction with other individuals, groups, or both is likely to occur. A range of interaction probability presents different opportunities and challenges—such as opportunities for solitude and interactions with a few individuals in areas requiring self-reliance and a high degree of challenge and risk to interaction with large groups of visitors in areas with little to no challenge or risk—associated with being outdoors as one moves across the spectrum.

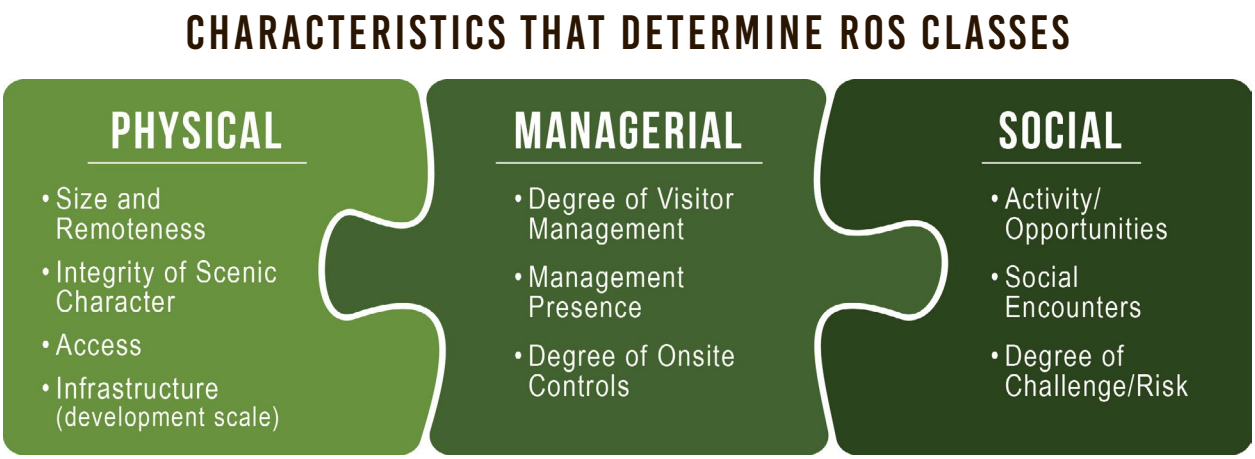

Figure 3. ROS Characteristics include the physical, managerial and social.

Classes can be further divided to reflect special opportunities and unique attributes. These are referred to as "subclasses." A desired ROS subclass must tier to (that is, nest within) one of the six primary ROS classes. Review and approval of proposed subclasses should be coordinated with the Regional Director of Recreation (FSM 2311 1.b.(5)).

For more details on ROS settings and the characteristics of each ROS class, **see the Definitions section of this guide, read the "Sustainable Recreation Planning" section in the Forest Service Manual (FSM 2310), or view the "**Introduction to Sustainable Recreation in Land Management Planning" course in AgLearn (Module 4a – "Recreation Opportunity Spectrum Short Course").

Why the Recreation Opportunity Spectrum?

The Recreation Opportunity Spectrum is built on the assumption that people choose different settings for the activities and experiences they desire. The Forest Service provides and manages a range of settings across varying landscapes so people can choose the setting that fits the experience and outcome they want. ROS helps us maintain choice now and in the future by focusing on managing a mix of sustainable settings instead of specific activities or presuming desired experiences. Recreation professionals manage a supply of different "recreation environments" to meet existing and future visitor demands, not too dissimilar to wildlife biologists managing diverse wildlife habitat to meet existing and foreseen wildlife needs.

Recreation planning and ROS are based on the premise that people want variety or diversity in recreation opportunities. People are complex and have diverse interests. Visitors choose the area in which they would like to recreate based on setting characteristics (physical, social, managerial), their selected activity or activities, and—at times—any specific place-based attachments (such as where they grew up hiking or where they met someone special). As an agency, the Forest Service provides and manages recreation settings and recreation opportunities (callout box 2 and callout box 3).

The result of visitors recreating in a certain setting in a particular way is their personal experience (such as physical and mental benefits, educational value, or social connections). Thus, visitors' experiences and benefits are largely dependent on the setting chosen by the visitor. A simplistic formula that captures this premise is (figure 4):

Figure 4. The components of recreation opportunities include the setting (physical, social, managerial characteristics of a place) where visitors choose to participate in particular activities. This combination results in opportunities for recreation experiences and the associated benefits. (See Appendix D for full size).

Callout Box 3. Planning Rule Definition: Recreation Opportunity.

> ***Recreation opportunity:*** *an opportunity to participate in a specific recreation activity in a particular recreation setting to enjoy desired recreation experiences and other benefits that accrue. Recreation opportunities include nonmotorized, motorized, developed, and dispersed recreation on land, water, and in the air (36 CFR 219.19; FSH 1909.12 zero code).*

ROS is used to describe and map desired recreation settings that are a spatial depiction of desired conditions. Desired ROS functions as a framework for: (1) meeting the persisting and evolving needs of diverse user groups and (2) ensuring that recreation is appropriately prioritized and balanced with other forest resources over time.

In general, primitive settings occur primarily in designated wilderness, recommended wilderness areas, or other areas where the desire is to preserve a remote and more challenging experience. Semi-primitive settings reflect a desired condition for these areas to remain less developed and potentially allow for fewer encounters with others than the more developed roaded natural and rural settings. Semi-primitive nonmotorized settings reflect the unlikelihood of future motorized routes or areas, while semi-primitive motorized settings reflect settings where future motorized route construction or use may be considered.

How and When Is Recreation Opportunity Spectrum Used?

The Planning Rule and associated directives clarify that sustainable recreation is derived through an integrated planning process and emerges as the resultant set of desired ROS classes (FSH 1909.12, sec. 23.23a 1.d) (callout box 4). ROS is a management tool used to identify and map existing recreation settings and opportunities and classify, assign, and manage desired recreation settings and opportunities (callout box 5). Figure 5 shows ROS in the Adaptive Planning Framework.

Callout Box 4. Directives Regarding Sustainable Recreation and the Recreation Opportunity Spectrum.

> *The Interdisciplinary Team uses the* ***ROS to define recreation settings*** *and categorize them into the six distinct classes as the structure to describe recreational settings. At the forest scale,* ***sustainable recreation is derived through the integrated planning process and emerges as the resultant set of desired ROS classes*** *(FSH 1909.12, ch. 10, sec. 13.4).*

ROS and the Assessment Phase

ROS is used to describe and map existing recreation settings, opportunities, predicted experiences, and other associated benefits across the land management plan area (FSM 2311 1.a). Existing ROS settings are mapped using the latest National ROS Inventory Mapping Protocol (see links in the "National ROS Inventory Mapping Protocol" section).

The protocols incorporate all relevant decisions (including travel management decisions) to reflect how existing recreation settings are currently managed and where those settings occur across the landscape. This existing ROS inventory informs recreation supply and is mapped and used primarily during the assessment phase, but also informs the "Need to Change" section, as well as the plan development phase. Recommended practices and resources are in Part 1 of this guide.

ROS and the Plan Development Phase

Desired ROS classes are mapped through an integrated planning process to ensure compatibility with other multiple uses and resource values. Public engagement is also necessary to derive desired ROS classes. The quantity, mix, and distribution of desired ROS classes may differ from existing ROS classes. A desired ROS class for an area sets the stage for managers and decision makers to weigh what kinds of development, including types of trails (motorized or nonmotorized), may or may not be appropriate on the landscape in the future. It also helps recreation managers address visitor capacities for an area. These factors contribute to the assignment of desired ROS classes throughout the land management plan area and further reflect desired conditions for recreation settings and desired conditions for other resource areas, such as those for wilderness, access, recommended wilderness, national scenic trails, etc. Desired ROS classes are developed during the plan development phase. Recommend practices and resources are in **Part 1** of this guide.

ROS and Implementing the Land Management Plan

ROS is used as a management tool for site-specific decisions during plan implementation. ROS classes outline recreation setting characteristics for which all projects (timber, vegetation, travel management, special uses, etc.) should consider during design and implementation. The ROS characteristics table (FSM 2310, 2311, exhibit 01) lists typical access, infrastructure, amenities, management, and social exposure for each ROS class. This exhibit can be used for site-specific planning and help determine a decision's consistency with the ROS class. Recommended practices and resources for project planning and implementation are in **Part 2** of this guide.

ROS and Monitoring

Lastly, the agency can monitor change between the inventoried existing and mapped desired ROS classes over time to show progress toward achieving the desired conditions or inform the need for management actions to maintain desired conditions.

Callout Box 5. Frequently Asked Questions About Existing ROS and Desired ROS.

What is the difference between the existing ROS inventory and desired ROS classes assigned in the land management plan?

An existing ROS inventory is an assessment of current recreation settings, mapped using GIS, and based on distance from existing routes. This information is then refined using staff and public input, which includes existing management direction and social conditions. It serves as a snapshot in time based on the GIS data available and the routes in existence.

In contrast, desired ROS classes are assigned similar to a land allocation within a land management plan. Desired ROS paints a picture of desired conditions for recreation and guides development of management actions and plan components needed to maintain the desired ROS classes. Desired ROS classes outline recreation setting characteristics for which all project planners (trails, travel, timber, vegetation, etc.) should consider during design and implementation over the life of the land management plan.

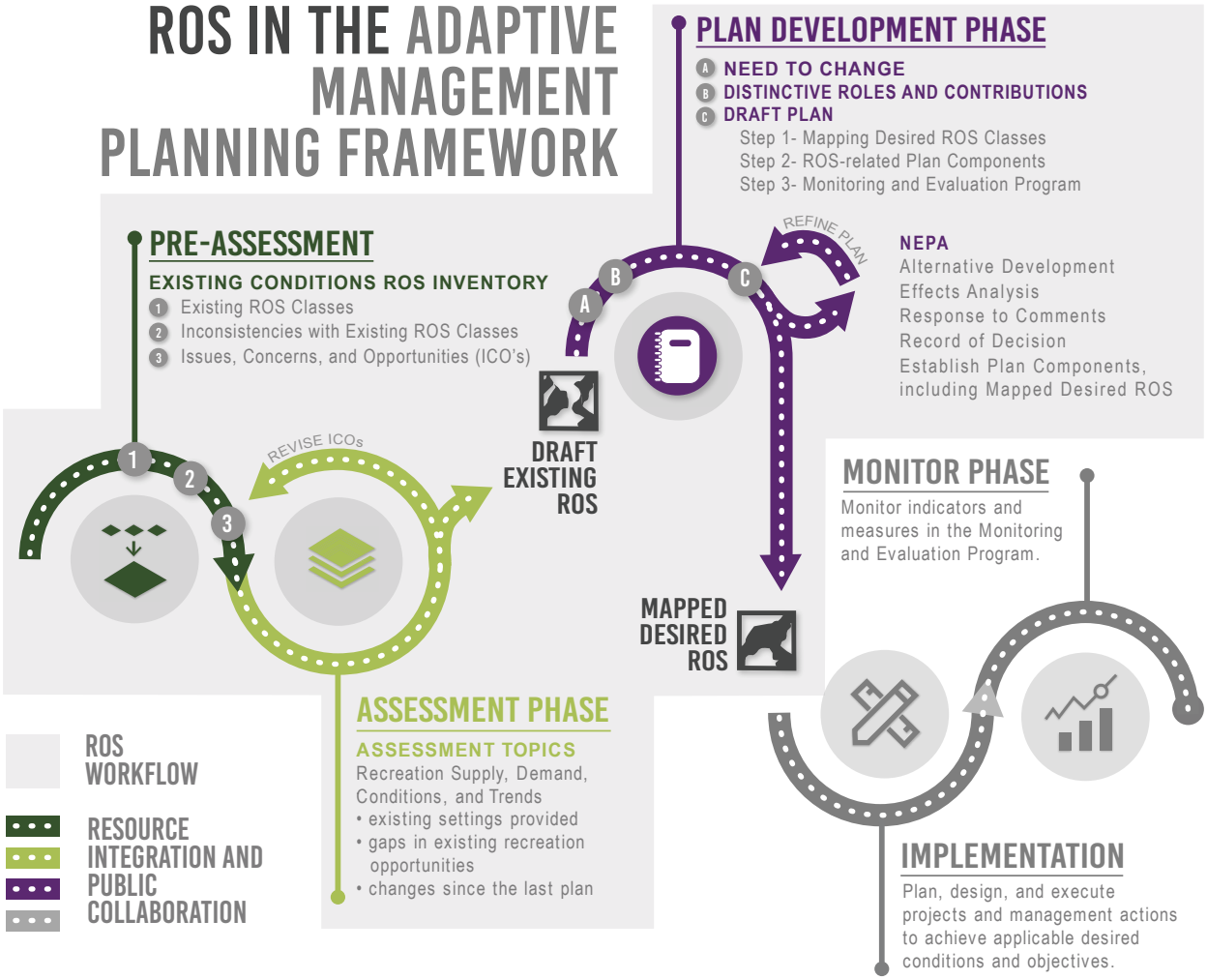

Figure 5. ROS in the Adaptive Management Planning Framework.

PART 1. ROS IN LAND MANAGEMENT PLANNING

Pre-Assessment (Preparation)

Conducting certain activities before formally initiating plan revision is necessary and can result in gains in overall efficiencies related to timelines, funding, and capacity. This technical guide includes completing a preliminary existing ROS inventory during pre-assessment (preparation) and finalizing the inventory using resource integration and public engagement during the assessment phase.

The existing ROS inventory informs recreation supply and provides a spatial depiction of existing conditions and trends. As part of the inventory, you will also identify:

- Preliminary issues, concerns, and opportunities
- Valued or unique settings, opportunities, and places
- Benefits on the unit

Map and assess the unit's existing recreation settings and opportunities by mapping existing ROS classes. Use the latest "National ROS Inventory Mapping Protocol" edition (summer and, when relevant winter) (FSM 2310, sec. 11. 1.a. and FSH 1909.12, sec. 13.4) (callout box 6).

Callout Box 6. Directives Regarding Use of the Recreation Opportunity Spectrum.

*The interdisciplinary team **shall** identify and evaluate available information about recreational settings and opportunities, including seasonal variation, using the **Recreation Opportunity Spectrum (ROS)** (FSH 1909.12, ch. 10, sec. 13.4).*

National ROS Inventory Mapping Protocol

The existing ROS inventory generated using the "National ROS Inventory Mapping Protocol" provides a product that informs existing conditions and trends for the assessment phase. The ROS mapping process shows the type, quantity, and distribution of the unit's recreation settings and opportunities and informs recreation supply. The issues, concerns, and opportunities identified are used as a starting point for integrating with other resource values and deriving desired ROS classes (FSH 1909.12 ch. 20, sec. 23.23).

The "National ROS Inventory Mapping Protocol" identifies mapping criteria and provides repeatable instructions to inventory, map, and classify existing ROS settings based on forest recreation opportunities and off-forest influences (such as motorized routes of another jurisdiction or an adjacent designated wilderness area administered by another agency) (figure 6). The product is an existing condition inventory of ROS settings, identified and documented inconsistencies with those settings, and identified unique or special opportunities. The settings mapped in the inventory protocol reflect available travel management decisions. It uses motor vehicle use maps and over-snow vehicle use maps to inform existing ROS (callout box 7).

ROS mapping is required for summer, and when relevant, for winter settings. When transportation or infrastructure changes with seasons and a forest can provide different recreation

opportunities during different seasons of the year, a seasonal variation in setting occurs. Most commonly, a seasonal variation occurs when there is a difference between summer (non-snow) recreation opportunities and winter (snow) recreation opportunities. Forests that offer snow-dependent recreation opportunities should inventory and classify a winter (snow) season ROS, as well as a summer (non-snow) season ROS.

There are two protocol documents: one for summer (or year-round) ROS and one for winter ROS. National data dictionary standard for GIS products and geospatial models and tools are available to help complete the inventory mapping. These resources are found on the Forest Service National Data Dictionary Standard site here [internal]. See Module 4a – "ROS Short Course" in the "Introduction to Sustainable Recreation in Land Management Planning" training.

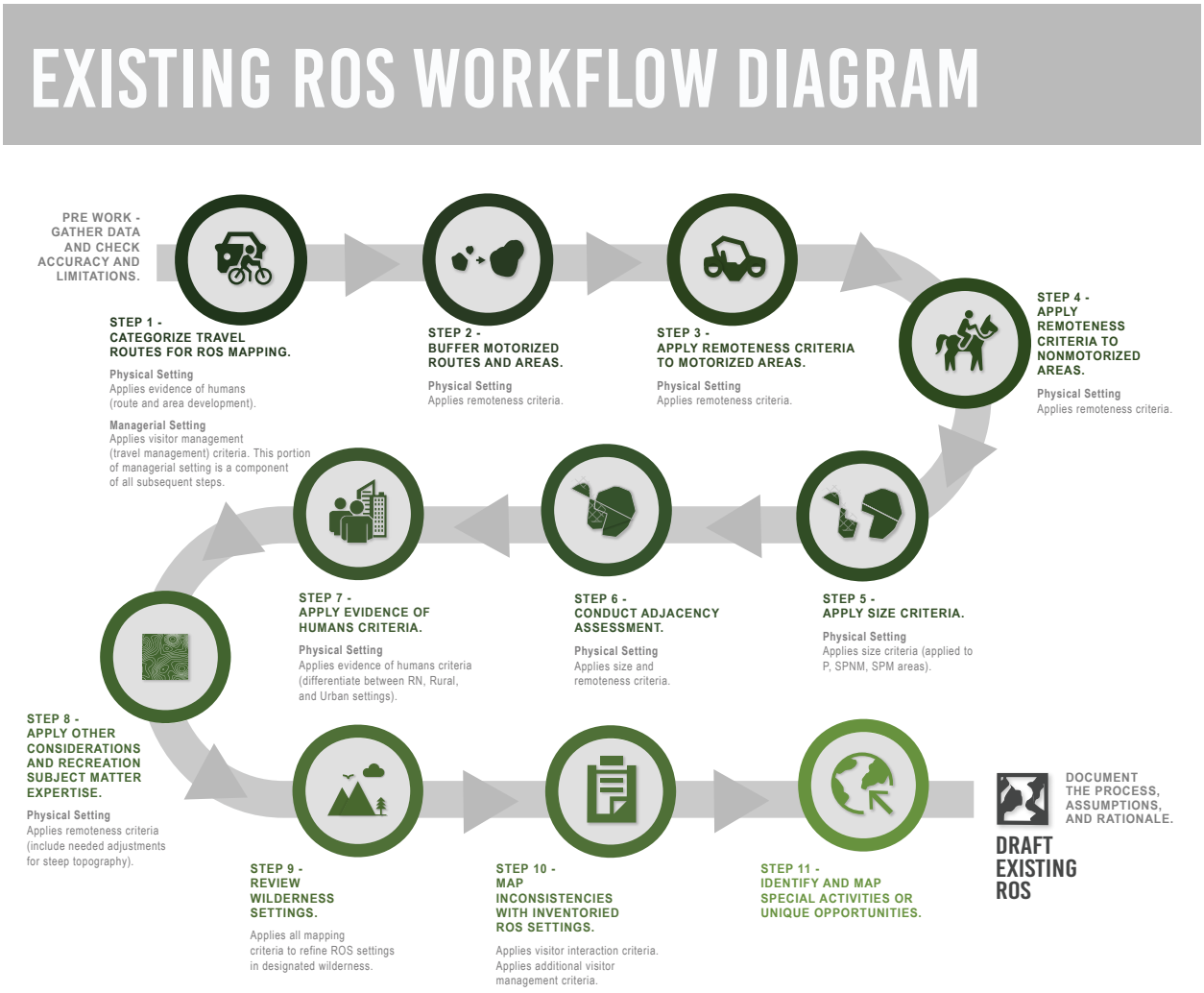

Figure 6. Existing ROS Inventory Workflow.

Callout Box 7. Frequently Asked Questions About Existing ROS Inventory.

Why does the primitive ROS in the existing ROS inventory not match designated wilderness boundaries?

Discrepancies between primitive ROS boundaries and designated wilderness areas may exist because of differences in ROS classification criteria and wilderness characteristics defined by the 1964 Wilderness Act. That is, primitive ROS class is not necessarily synonymous with the wilderness characteristics of primitive or unconfined recreation defined by the 1964 Wilderness Act. Because of the proximity many designated wilderness areas have to motorized routes, these wilderness areas can often fail to meet the remoteness criteria of the primitive ROS class. Although a wilderness area might never achieve a desired primitive ROS class, land managers can still manage it with wilderness characteristics in mind.

The inventory conducted in the existing land management plan (circa 1980s or before the 2012 Planning Rule) and the new inventory are very different. What accounts for those differences?

Three primary reasons account for the shift in updated inventoried ROS settings:

1. The parameters for the inventory have changed, and our ability to model is much more precise. Imagine a crayon drawing on big sheets of paper versus modern GIS systems more accurately modeling different types or levels of motorized use affected by different types of surrounding topography.
2. Individual travel management decisions have occurred across the unit in the last 30-or-more years that have changed the level of development on the landscape and the settings users experience. These decisions may or may not have changed the ROS class assigned to an area in the current plan, but they have resulted in changes to on-the-ground settings that are reflected in the new existing ROS inventory.
3. The existing land management plan may not have direction for ROS classes assigned to an area. So, an inventoried semi-primitive area could become more developed over time, or an inventoried motorized area could become more nonmotorized over time. There wasn't a complete vision for recreation management in these situations.

Assessment

During the assessment phase, assess existing conditions, trends, and sustainability of recreation supply, use and demand, and benefits. Sustainable recreation does not function independently of other multiple uses and resource values. Recreation is part of a complex system of interconnected ecological, social, and economic influences and outcomes. Integrate existing ROS with the suite of recreation-related programs (such as scenery, access, facilities, heritage resources, recreation special uses, or designated areas) and the other multiple uses and resources (such as wildlife, timber, and minerals) to identify issues, concerns, and opportunities (callout box 8).

Callout Box 8. Integration Examples During the Assessment.

Recreation affects and is affected by other recreation-related programs and ecological and socioeconomic conditions and trends.

Integrating with recreation-related programs

Determine if the existing ROS classes align with specially designated areas, such as wilderness, wild and scenic rivers, national scenic and historic trails, inventoried roadless areas, and others.

Integrating with other multiple uses and resources

Winter ROS classes, such as semi-primitive motorized, may intersect with crucial winter habitat for wildlife species. These intersections may or may not be problematic but should be discussed more closely prior to establishing desired winter ROS classes in the plan.

(See Module 5 – "The Assessment Phase" in the "Introduction to Sustainable Recreation in Land Management Planning" training for more detailed examples.)

The existing ROS inventory is used during the assessment phase to inform recreation supply (callout box 9). Other considerations to address during assessment include:

- Does the unit have a range of different ROS settings?
- Does the unit offer different recreation activities and settings during different seasons?
- Compare the types of recreation settings, opportunities, and benefits provided by the unit with those on adjacent lands.
- What are the conditions and trends of the unit's settings and opportunities? Have there been changes in the mix and distribution of ROS settings and opportunities? If so, have the changes affected resulting benefits or created conflicts with other resource values or uses?

Callout Box 9. ROS and the Assessment Phase.

The assessment uses the existing ROS inventory to convey an inventory of existing conditions based on what is on the ground and how areas are currently managed through travel management decisions. This does not illustrate existing land management plan direction that some forests included in their plans from the 1980s and 1990s.

If the current land management plan identified ROS-related plan direction, it will be important to also convey:

- Whether existing conditions align with current land management plan direction
- Any trends occurring in the ROS settings since the current land management plan was developed

Plan Development

The 2012 Planning Rule requires sustainable recreation plan components that must consider opportunities to connect people with nature. ROS is one required tool in expressing those plan components.

In addition to Planning Rule direction, FSH 1909.12, chapter 20, contains specific direction for sustainable recreation plan components (callout box 10). As you are reviewing direction, understand that:

- "must" means it is required,
- "should" is also a requirement unless there is a documented reason for not meeting the requirement, and
- "may" represents suggested guidance.

Some direction specific to ROS is highlighted below (emphasis added).

Callout Box 10. Directives Regarding Plan Components for Sustainable Recreation and ROS.

*The plan **must** include plan components, including standards or guidelines, to provide for sustainable recreation integrated with other plan components as described in 23.21a. To meet this requirement the plan:*

a. ***Must** include desired conditions for sustainable recreation **using mapped desired ROS classes**. This mapping may be based on management areas, geographic areas, designated areas, independent overlay mapping, or any combination of these approaches. Desired ROS classes may be different from existing classes. The set of desired ROS classes is the result of an integrated planning process in which recreation contributes to social, economic, and ecological sustainability. Desired recreation settings and opportunities may complement surrounding land uses and may vary by season.*

d. ***Should** include suitability determinations for motorized recreation including over-the-snow vehicles **consistent with the desired ROS class**…*

g. ***Should** include specific standards or guidelines where restrictions are needed to ensure the **achievement or movement toward the desired ROS classes**…*

(FSH 1909.12, secs. 23.23a, 2 and 2a-h)

Public involvement occurs throughout and informs each plan development task. In summary, the following tasks occur during the plan development phase:

- Identify the need to change the plan.
- Inform the distinctive roles and contributions of the plan area.
- Draft desired ROS maps and supporting plan components.
- Draft and integrate other recreation-related plan components.
- Integrate the draft recreation-related plan components with those of other multiple uses and resources.
- Inform other required and optional plan content (such as the monitoring program).

Identify the Need to Change the Plan

The level of detail in the "Need to Change the Plan" section varies by unit. For recreation, it can simply state that accounting for sustainable recreation within land management plans is a new requirement, and therefore, is needed in the revised land management plan. Alternatively, or in

addition, the "Need to Change the Plan" section can convey specific aspects of recreation that need to change. More detailed needs can include the need to identify and map desired ROS classes. This includes desired summer ROS classes, and where relevant, desired winter ROS classes. In addition, the issues, concerns, or opportunities revealed in your assessment may be good to include in the "Need to Change the Plan" section.

Inform the Distinctive Roles and Contributions of the Plan Area

The unit's distinctive roles and contributions convey what is unique or valued about the plan area when compared with the broader landscape. Simply put, the intent is to know what is important and should be retained. Recreation settings, including scenic character, may be part of the distinctive roles and contributions of the plan area. Distinctive roles and contributions ultimately serve as the foundation and unifying concept for designing specific plan components and other plan content.

Develop Desired ROS Maps and Supporting Plan Components

Mapped desired ROS classes are the zoning framework, allocating specific areas of land for desired recreation settings and opportunities in the life of the land management plan. The maps serve as spatial depictions of where desired conditions and other associated plan components (objectives, standards, guidelines, and suitability) apply within the plan area to maintain or move toward desired ROS classes (callout box 11).

Callout Box 11. Directives Regarding Sustainable Recreation and Desired ROS Classes.

Sustainable recreation *is derived through the integrated planning process and* ***emerges as the resultant set of desired ROS classes****. (FSH 1909.12, sec. 23.23a 1.d)*

The set of ***desired ROS classes*** *is the result of an integrated planning process in which recreation contributes to social, economic, and ecological sustainability. (FSH 1909.12, sec. 23.23a. 2.c)*

Informing the Plan Area's Allocation Structure

All land management plans must have geographic areas or management areas. Recreation-related desired conditions can inform the allocation structure of your plan (figure 7).

Geographic areas are place-based and consider socioeconomic and biophysical characteristics. Therefore, they do not occur in more than one place. Desired ROS settings do not inform geographic areas, but geographic areas may inform desired ROS.

Management areas are management-based and consider the predominant management focus. Therefore, they often occur in more than one place. Desired ROS settings can inform and be informed by management areas.

Designated areas are an area or feature identified and managed to maintain its unique, special character or purpose. Some categories of designated areas may be designated only by statute, and some categories may be established administratively in the land management planning process or by other administrative processes of the Federal executive branch. Desired ROS settings can inform and be informed by designated areas.

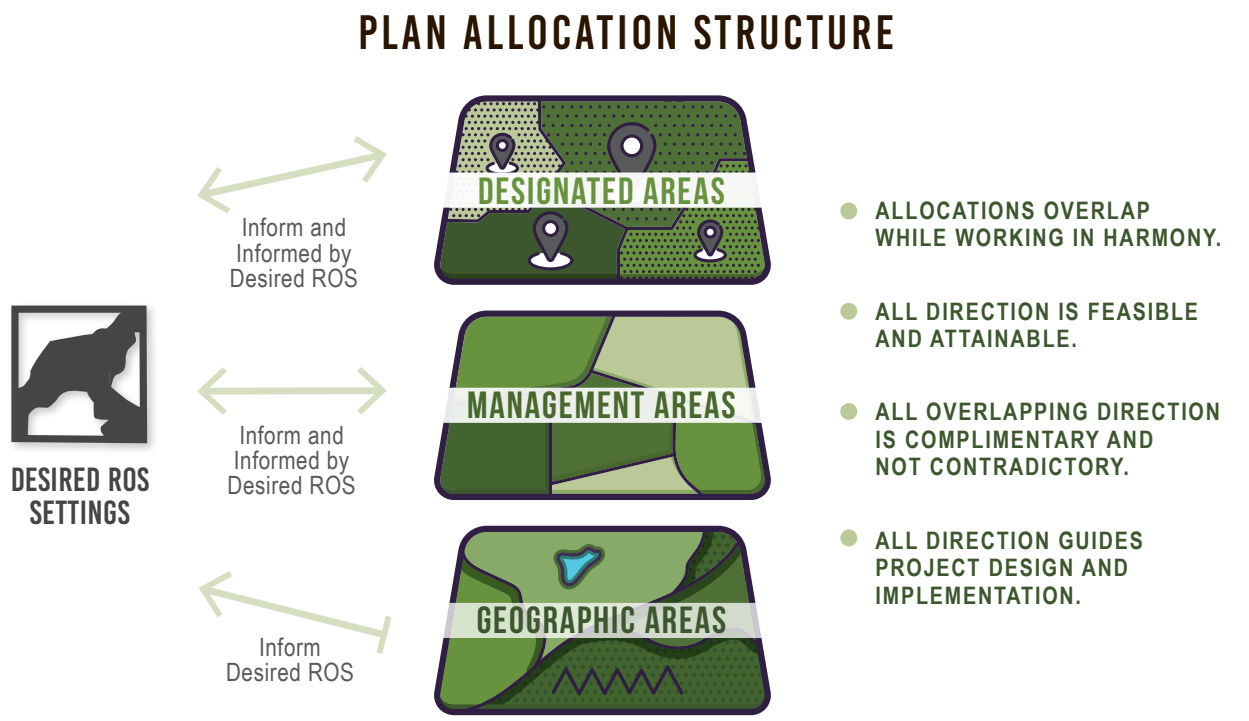

Figure 7. Plan Allocation Structure.

Mapping Desired ROS – A Recommended Process

Depending on the level of integration and public engagement that occurred during the assessment phase, mapping desired ROS classes may require more interdisciplinary involvement to ensure compatibility with other multiple uses and resource values, as well as more public engagement. A workshop or several workshops with the interdisciplinary team and line officers is recommended. The workshop would include an overview of ROS classes and working through the questions outlined below to determine the mapped desired ROS classes for the draft plan. District staff often have the most on-the-ground knowledge of recreation settings, resources, challenges, and visitor use patterns. It is essential to include them in this process.

If travel management decisions are recent and few issues, concerns, or opportunities related to travel management were discovered during the inventory mapping process for existing ROS, the existing ROS and desired ROS may be very similar. Following is a recommended process and questions to consider when deriving desired ROS classes (figure 8). Also see Module 6, part 1 – "Plan Development" in the "Introduction to Sustainable Recreation in Land Management Planning" training for example application.

1. Document the process used for deriving desired ROS classes, including decisions and rationale when desired ROS is different than existing ROS classes.
2. As areas are delineated for a specific desired ROS class, identify the specific characteristics to manage for that setting. See FSM 2310 for setting characteristics (physical, managerial, social).
3. Start with the existing ROS inventory map from the assessment phase. Those inventoried classes are based on travel management decisions reflected in the unit's motorized vehicle use

map and, where applicable, over-snow vehicle use map. The issues, concerns, and opportunities identified in the existing ROS inventory can inform desired ROS classes.

a. Issues identified include inconsistencies with the mapped recreation opportunities. Inconsistencies with the existing ROS settings are documented in the inventory process but do not change the overall inventoried existing ROS class. Rather, inconsistency layers are used with the existing ROS classes to provide an overall existing recreation setting condition and help identify places that may either a) prompt considering a different desired ROS class or b) need management actions guided by integrated plan components to improve consistency.

b. Concerns identified may include visitor use contributing to watershed conditions or wildlife habitat considerations. For example, an area may have an existing winter ROS class of semi-primitive motorized, but the area coincides with sensitive wildlife habitat where motorized use may not be appropriate.

c. Opportunities identified may include accommodating additional motorized recreation opportunities, such as loop trails to connect communities to the forest, establishing a network of single-track motorized routes, or opportunities to enhance nonmotorized access to unique cultural resources or heritage sites.

4. What are the unit's distinctive roles and contributions? The existing ROS inventory map can reveal whether the existing settings do or don't protect the recreation attributes described as important, unique, or valued. For example:

   a. If primitive or semi-primitive ROS settings are highlighted within the distinctive roles and contributions of the plan area, are those settings at risk?

   b. If access and community connections are called out within the distinctive roles and contributions of the plan area, is it sustainable? Are current use levels and access types sustainable? Does access infrastructure need modification?

5. The interdisciplinary team works together to resolve issues and concerns. The team considers allocating desired ROS classes to provide opportunities that do not currently exist and are needed based on public engagement. Use resource integration to develop a desired ROS base map not specific to an alternative. Then refine for the alternatives by reviewing all plan components and land allocations in the draft plan (such as management areas). Other potential considerations include:

   a. Are there routes approved in Travel Management Rule decisions that are not on the motorized visitor use map, such as routes needing mitigation before being added to the map?

   b. Is subpart A of the Travel Management Rule analyzed for the unit? If so, consider how it can inform desired ROS (FSM 2311).

   c. Do administrative-only routes with motorized use affect the desired ROS condition?

   d. Are there opportunities for off-highway vehicle or over-snow vehicle trails, connecting trails, or loops?

   e. Is there designated wilderness? Ensure the desired ROS is consistent to protect its character (primitive or semi-primitive nonmotorized).

f. Are there designated areas with recreation emphasis? Ensure the desired ROS is consistent with the nature and purpose of designated areas. Examples include national recreation areas, national scenic areas, wild and scenic rivers (designated, suitable, or eligible), nationally designated trails (scenic, historic, and recreation), historical areas, inventoried roadless areas, or research natural areas.

g. Are there any proposed designated area recommendations or management areas that may affect desired ROS? For example, areas that may be analyzed for potential wilderness recommendation should have a desired ROS class consistent with protecting the wilderness characteristics that provide the basis for potential recommendation.

h. Are there other resource needs and integration that affect desired ROS? Some examples include:

   i. Ecological landscapes: Do landscapes identified for wildlife habitat, wildlife security, or other ecological conditions, including vegetation ecosystems restoration align with the desired ROS classes?

   ii. Watershed condition: Is recreation use contributing to the condition? For example, visitor use has increased in dispersed camping corridors. More dispersed sites are being created, and existing dispersed sites have increasing footprints and erosion.

   iii. Commonly proposed management areas: Do any of the proposed management areas have unique settings or opportunities related to desired ROS? Some examples include:

      a. developed recreation complexes with deferred maintenance and capital improvement needs,

      b. highly developed or dispersed-use roads or travel corridors, and

      c. road access corridors that access wilderness areas or semi-primitive areas (these typically have either developed or dispersed camping facilities that serve as jumping off places for recreationists heading into these backcountry areas).

6. Engage the public and continue resource integration. Look beyond what the unit currently offers and think about what could or should be offered.

   a. For example, an area may have an existing winter ROS class of semi-primitive motorized. Public engagement reveals a desire for quiet, cross country skiing opportunities. In addition, the area coincides with sensitive wildlife habitat identified when integrated with other resources (3. above). As a result of both resource integration and public engagement, the existing winter ROS class of semi-primitive motorized may be allocated with a desired winter ROS class of semi-primitive nonmotorized to better address resource concerns and respond to public demands. This desired ROS class would be the desired condition over the life of the plan that would inform future travel management planning.

7. Refine, if needed, where unique or valued biophysical, social, managerial, or cultural attributes warrant special protection or enhancement. This can be accomplished through integrated plan components or, in part, through the development of desired ROS subclasses. Each desired ROS subclass must tier to one of the six primary ROS classes. Coordinate with the regional director of Recreation to facilitate regional consistency. If subclasses are identified, they should have supporting plan components (FSM 2311 1.b(5)). For example:

   a. Designated wilderness areas may warrant a subclass with defined setting characteristics that acknowledge the unique opportunity for a high degree of remoteness in an area with no perceptible evidence of human influence, travel within a sensitive ecosystem, intense challenge, and very high probability for solitude. Acknowledging this unique opportunity with a subclass calls out special protection and enhancement needs.

   b. In contrast, portions of designated wilderness areas may abut highly developed urban settings where level of use in this interface area is higher than those defined for primitive desired ROS class. Although some measures may be used to manage use levels (such as permits and group size limits), the immediately adjacent infrastructure (such as popular developed sites and access roads along rivers) will remain in place and continue to influence surrounding opportunities for solitude. In this example, a desired ROS subclass as determined by the IDT can (1) distinguish these areas from true primitive ROS settings and (2) prompt management strategies to be designed that consider connection to more developed areas.

Recognize that each unit need not provide recreation opportunities in each ROS class. The desired mix and distribution of desired ROS classes should be based on the unit's distinctive roles and contributions, public engagement, and integration with other resource values to ensure ecological sustainability and contributions to social and economic sustainability (callout box 12).

Callout Box 12. Frequently Asked Questions About Existing and Desired ROS Boundaries.

Can the boundaries of desired ROS classes differ from existing ROS classes?

In most cases, desired ROS class boundaries will follow the designated area or management area boundaries, not the existing ROS inventory remoteness distance. This allows for simpler integration with other land allocations at the plan-level and easier implementation at the project-level.

Smaller areas that do not meet size criteria for primitive or semi-primitive classes may be mapped as such on the desired ROS maps when there is rationale or a management need to maintain the setting. This usually occurs when the area is adjacent to designated areas such as wilderness or nationally designated trails. Another example is when the size is close to the size criteria and subject matter expertise and informed professional judgement determine that the setting can be maintained even if the size criteria is not met.

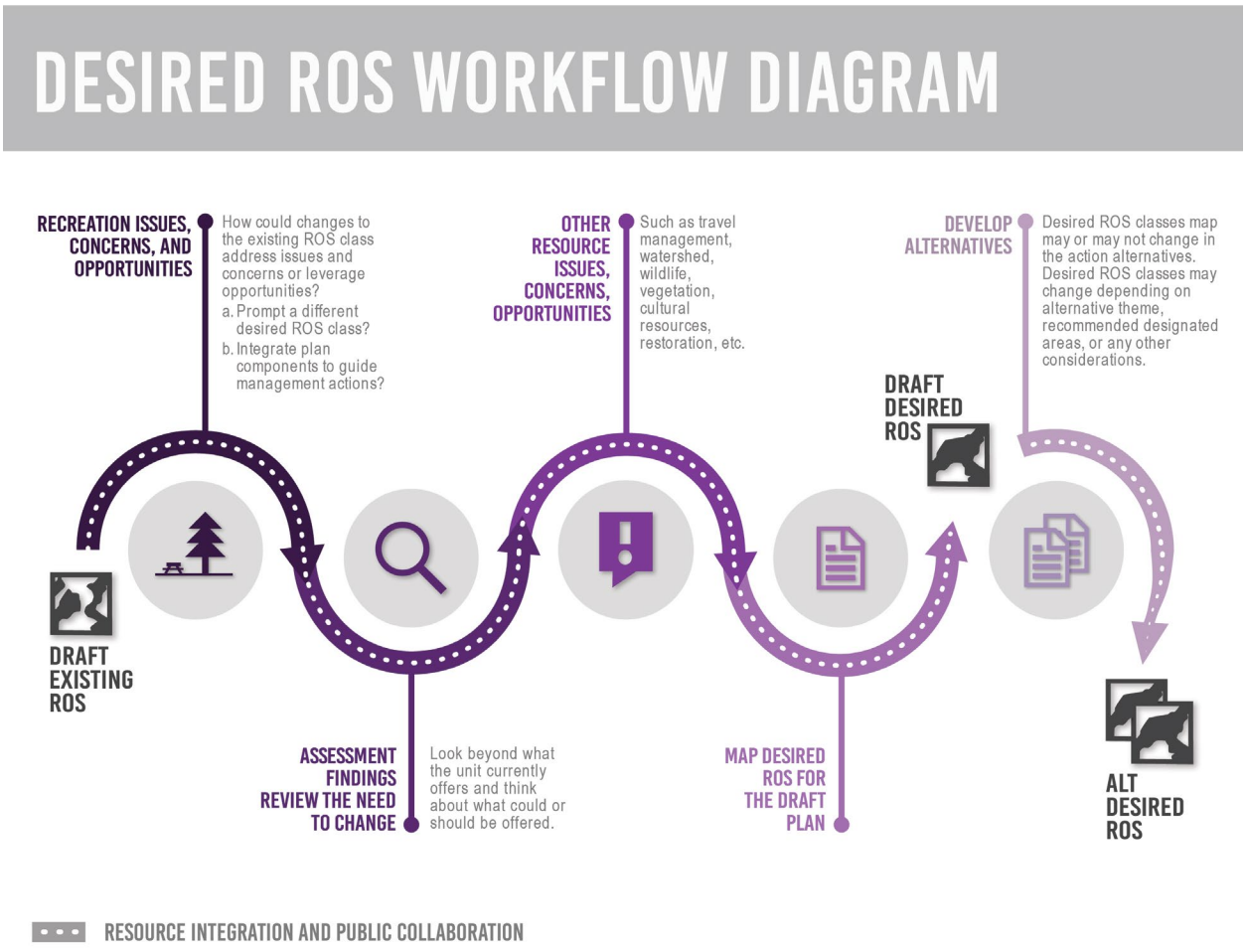

Figure 8. Flowchart for Mapping Desired ROS Classes.

ROS-related Plan Components

In addition to 2012 Planning Rule direction, FSH 1909.12, chapter 20, contains specific direction for sustainable recreation plan components (**callout box 10**).

Review how plan components relate to one another (figure 9 and callout box 13). For a refresher on the relationships among plan components and other plan content, review Module 2 – "Land Management Plans Under the 2012 Planning Rule" in the "Introduction to Sustainable Recreation in Land Management Planning" training.

Figure 9. Relationship Between Plan Components and Other Content.

Specific to ROS, this task includes developing draft plan components that:

1. Integrate desired ROS classes by referencing the mapped desired ROS classes.
2. Maintain or move toward the specific characteristics (physical, social, and managerial) of each desired ROS class.
3. Address gaps between existing and desired ROS classes when possible. For example, there are currently motorized routes within desired semi-primitive nonmotorized settings. An objective may be developed to obliterate and rehabilitate xx miles of motorized routes within x years.
4. Integrate with the suite of recreation-related programs (such as scenery, access, facilities, heritage resources, recreation special uses, or designated areas) and the other multiple uses and resources (such as wildlife, timber, and minerals) to ensure resource integration.

Callout Box 13. Land Management Plan Direction and Decisions.

A land management plan is direction for the Forest Service, not the public; therefore, the plan alone cannot prohibit public uses (such as mountain biking or motor vehicle use). For example, a plan decision that includes a plan component indicating off-trail mountain biking is not suitable in an area analyzed for potential wilderness recommendation does not mean a mountain biker can be cited for a violation when biking in that area. The responsible official must issue a closure order for these types of restrictions for it to go into effect, typically done after a more detailed travel planning effort and decision.

Any constraint on the public's use of National Forest System lands not otherwise imposed by law or regulation requires the responsible official to issue an order under 36 CFR 261, subpart B (FSH 1909.12, sec. 21.8).

The plan may include components based on each desired ROS class forest-wide. The associated desired ROS class map would be used to understand where these plan components apply. Alternatively, the plan could include components for management area(s) that support the desired ROS class in that specific area, such as a designated wilderness management area and direction for the desired ROS class in this specific management area. The goal is to equip forest staff with adequate direction to maintain and move toward achieving the desired ROS classes over the life of the plan through site-specific to landscape-level projects. Table 1 illustrates example ROS-related forest-wide plan components.

Table 1. Example ROS-related Plan Components.

PLAN COMPONENT TYPE	EXAMPLE PLAN COMPONENT LANGUAGE	LOGIC
Forest-wide – Recreation – DESIRED CONDITION	Desired ROS settings depicted on <figure x> serve as the desired conditions for recreation.	Specifies how mapped desired ROS settings are intended to be used.
Forest-wide – Recreation – STANDARD	Motorized uses are prohibited in desired primitive ROS settings.	Provides rationale for forest order language should motorized use within primitive desired ROS settings become an issue that could preclude maintaining or moving toward the specific characteristics of the desired ROS class.
Forest-wide – Recreation – STANDARD	New motorized routes (roads and trails) or areas shall not be constructed or designated in desired semi-primitive nonmotorized ROS settings, except those deemed necessary for administrative activities, permitted activities, and/or emergency access.	Provides clarity in regard to new motorized route development within desired semi-primitive nonmotorized settings to maintain or move toward the specific characteristics of the desired ROS class.
Forest-wide – Recreation – GUIDELINE	All project-level decisions and management activities should be aligned with the desired ROS mapped classes and setting descriptions to sustain recreation settings and opportunities amidst forest management actions.	Specifies when and why desired ROS settings should be considered to maintain or move toward the specific characteristics of the desired ROS class.

PLAN COMPONENT TYPE	EXAMPLE PLAN COMPONENT LANGUAGE	LOGIC
Forest-wide – Recreation – GUIDELINE	To achieve and maintain an array of place-based, desired recreation settings and opportunities across the landscape for the long-term, project-level planning (including the development of new facilities), travel management planning (designation of National Forest System roads, trails, and/or areas for motorized/mechanized use), development of area management plans (including wilderness), and all national forest management decisions and activities (range, timber, vegetation, wildlife, minerals, lands, etc.) should be consistent with the: (1) desired ROS setting parameters detailed in <table x> and, (2) corresponding broad-scale desired summer and winter ROS allocations (see <table x> and <table x>) and maps. See Recreation Management Approaches section for implementation. See also <appendix x> for maps.	Specifies–even more explicitly than the guideline above–when and why desired ROS settings should be considered in order to maintain or move toward the specific characteristics of the desired ROS class.
Forest-wide – Recreation – MANAGEMENT APPROACH (referenced in the guideline immediately above):	Desired ROS settings function as a framework for: (1) meeting the persisting and evolving needs of diverse user groups and (2) ensuring that recreation is appropriately prioritized and balanced with other national forest resources over time. Mapped at the national forest-scale, desired ROS settings provide desired landscape-level settings to work toward and/or maintain over the life of the plan. However, should finer-scale analysis, public feedback, and/or place-based needs lead to a decision that is substantially or irreversibly inconsistent with the forest-wide mapped desired ROS setting allocations (e.g., installation of permanent infrastructure such as a non-conforming trail class cutting through the middle of a desired ROS setting), the following will be done as part of that planning effort: (a) the inconsistency and rationale for deviation is documented, and, if changes are spatial, (b) the desired ROS map(s) is/are amended. The responsible official will determine whether the scale of inconsistency is of such magnitude to require a plan amendment or an administrative map change due to mapping alterations.	The management approach attempts to provide flexibility in implementation given potential mapping errors, data discrepancies, etc. Some units included similar language in the resource "Background and Descriptions" section in the land management plan.

Review other relevant land management plans (such as adjacent units) to determine compatibility and consistency across boundaries. Lastly, refine draft desired ROS classes and plan components by integrating with other multiple uses and resource areas' plan components.

Consider including forest-wide plan components for ROS classes to guide future management actions specific to the unit's need to change or other issues, concerns, or opportunities identified during the assessment phase. For example, some ROS classes, like roaded natural, do not include group size or encounter numbers.

Drafting plan components that outline specific measurements may provide more direction for management actions to achieve desired conditions. These types of plan components may be specific to a management area and ROS class. For example, a recreation emphasis management area in a roaded natural ROS class may benefit from management area guidelines providing direction on group size, contacts, or encounter numbers tied to a desired condition for the management area. The Interagency Visitor Use Management Council's Visitor Use Management Framework and "Visitor Capacity Guidebook" can help determine the amounts and types of visitor use to accommodate in an area while achieving and maintaining desired conditions (expressed as mapped desired ROS classes).[1]

See Module 6, part 1 – "Plan Development" in the "Introduction to Sustainable Recreation in Land Management Planning" training for more plan component examples. Examples of forest-wide plan components by ROS class are also available.

Public Engagement

Collaborate with the public to resolve issues and concerns identified on the existing ROS inventory maps, as well as create desired opportunities that currently do not exist. The mapped desired ROS classes for the proposed action should reflect this collaboration. Request feedback on the proposed action, including mapped desired ROS classes and ROS-related plan components.

1. Key questions should determine what gaps exist between existing and desired ROS, and what actions should be taken to resolve discrepancies or enhance experiences.
2. Provide the public with a description of the ROS setting characteristics and how they are used in implementation and management. Provide an example of an area, its desired ROS, and what management actions could occur to move toward the desired ROS class.
3. Determining desired opportunities could take many forms, including developing a collaborative talking points map or open houses during plan revision. Outcomes from public engagement should be descriptions of the desired social and physical environment of specific landscapes. This could include levels of encounters with other parties, types and kinds of facilities, and activities that people want to pursue.

[1] The U.S. Forest Service develops estimates of the volume of recreation use on national forests through the National Visitor Use Monitoring (NVUM) program. NVUM provides reliable information about recreation visitors to National Forest system managed lands at the national, regional, and forest levels. While the NVUM data provides science-based, reliable information about the type, quantity, quality, and location of recreation use on public lands that should be considered during forest planning, additional area or site specific visitor use data would be needed to inform measurable plan components related to visitor use for specific areas and desired ROS classes.

Land Management Plan and Travel Management

A common point of confusion is between land management plan decisions and travel management decisions. Site-specific public motorized use designations and decisions are not land management plan decisions. They are analyzed and designated through travel management planning. Land management plans assign desired ROS classes. Desired ROS classes, as well as other plan components and content, provide the framework and sideboards for future travel management planning processes. The land management plan does not, however, make decisions regarding the location of specific designated routes. In other words, desired ROS classes do not open, close, or designate routes or areas for public use. The unit's motor vehicle use maps (and over-snow vehicle use maps, if applicable) display where and what type of public motorized use is allowed across the unit (36 CFR 219.15; FSH 1909.12, secs. 21.41 and 23.23l).
See **appendix A** for more information on the relationships between ROS and Travel Management Rule subparts.

Callout Box 14. Uses, Activities and Emerging Trends.

Another common point of confusion is ROS's role in determining allowed uses and activities within each setting, particularly with new and evolving uses over time. Use and activity types are often tied to Travel Management (or other) policy. Additionally, there tend to be use-specific nuances outside of what ROS can specifically address. For example, per FSM 7700 Travel Management, chapter 10, e-bikes are considered to be motorized vehicles while also allowing for discretion at the local unit level for where e-bikes can be used. As another example, unmanned aircraft systems (or drones) use must comply with Federal Aviation Administration and Forest Service laws, regulations, and policies.

Monitoring and Evaluation Program

Develop monitoring questions, indicators, and measures for sustainable recreation, including ROS. Questions and indicators shall meet 2012 Planning Rule requirements and focus on the plan area's distinctive roles and contributions, desired conditions, objectives, and other plan components (36 CFR 219.7(f)(1)(iii); 36 CFR 219.12).

See Module 6, part 1 – "Plan Development" in the "Introduction to Sustainable Recreation in Land Management Planning" training for sustainable recreation monitoring examples. Table 2 shows example ROS-related questions and indicators for recreation desired conditions.

Table 2. Example ROS-related Questions and Indicators for Recreation Desired Conditions.

MONITORING QUESTION	MEASURE	FREQUENCY	METHODOLOGY
Are existing ROS classes (summer and winter) meeting or trending toward desired ROS classes?	Acres meeting desired ROS classes and subclasses.	Upon project completion and every 5 years forest-wide.	On-the-ground implementation monitoring and updated mapping using national mapping protocols.

NEPA (EIS, Record of Decision, and Objections)

This phase of the plan revision process starts with a notice of intent to prepare an environmental impact statement for plan revision published in the Federal Register, online, and the newspapers of record. The NEPA phase has three main parts: scoping, alternatives development, and analysis. See Module 6, part 2 – "Environmental Impact Statement" in the "Introduction to Sustainable Recreation in Land Management Planning" training for how to frame and analyze sustainable recreation in the draft environmental impact statement.

Affected Environment

The affected environment is a broad description that characterizes and evaluates potentially impacted resources. Much of this work should already be done in the existing ROS inventory because you already described the existing conditions, trends, and sustainability of recreation supply, use and demand, and benefits in the assessment.

Develop Alternatives

The current land management plan direction is most often the "no action" alternative (callout box 15). Other alternatives are developed through both public engagement and an integrated, interdisciplinary process. The alternatives typically vary by where the plan components apply and are tied to the location, extent, and distribution of the allocations. Mapped desired ROS classes may or may not vary by alternative, depending on the alternative theme or proposed management areas. Plan components, such as objectives, may also vary by alternative. Document the rationale and decisions for the mapped desired ROS classes in each alternative.

Callout Box 15. Frequently Asked Question about ROS and the "No Action" Alternative.

What mapped ROS is used for the "no action" alternative?

Prior to the 2012 Planning Rule, some units allocated mapped ROS classes in their plans from the 1980s and 1990s and some did not. Some units included ROS-related plan components, and some did not. Review the current land management plan direction for ROS settings and determine if the ROS allocations are similar to what is required for mapped desired ROS settings in the Planning Rule.

Is it clear that the maps depict desired conditions for ROS? Are there desired conditions, standards, or guidelines to meet the mapped ROS classes in the existing plan? If there are, use the current land management plan mapped ROS as the "no action" alternative.

If the current land management plan direction for ROS is minimal, incomplete, or there are no ROS-related plan components, use the existing ROS inventory, which is the ROS settings that exist on the ground and how ROS settings are currently being managed using the unit's travel management decisions.

Analyze Alternatives

Complete environmental consequences for plan components related to mapped desired ROS classes and supporting plan components. Also consider the environmental consequences of plan components for other recreation-related programs, as well as multiple uses and resources. Work closely with your plan revision interdisciplinary teammates to ensure a consistent analysis methodology is used among all resource areas.

Record of Decision

Once a plan alternative is chosen as the final plan and a decision document is signed, the forest-wide desired ROS map that accompanies the final plan is finalized. This map represents desired ROS classes forest-wide. This map determines final plan direction for all types of recreation activities and uses. You might also need to:

- Draft ROS-related sections for the draft record of decision.
- Prepare ROS documentation for the objections review.
- Provide the objections review team any needed information/support for ROS-related objections.
- Respond to any ROS-related instructions from the responsible official by revising the plan, final environmental impact statement, and final record of decision.

Monitoring

The monitoring and evaluation program included in the land management plan defines what will be monitored. Monitoring occurs after the plan is finalized and implementation has begun. Monitoring tells the Forest Service what to do or change to achieve the land management plan's desired conditions by:

- Tracking whether the agency did what it said it would do (implementation).
- Tracking conditions and results (effectiveness).
- Testing and tracking assumptions (validation).

See Module 8 – "Monitoring" in the "Introduction to Sustainable Recreation in Land Management Planning" training for more information on monitoring.

PART 2. ROS AND IMPLEMENTING THE LAND MANAGEMENT PLAN

Implementing the land management plan means planning, designing, and executing projects and management actions to achieve or move toward applicable desired conditions and objectives, while conforming to relevant sideboards and constraints (standards, guidelines, and suitability).

Regardless of the planning scale (that is, site-specific or landscape-level), all planning decisions need to be consistent with the plan components of the relevant land management plan. Planning decisions encompass all resource areas. Recreation and ROS-related plan direction needs to be considered for all potential projects and management activities whether those projects and activities are related to recreation, minerals, land use, timber, wildlife, water resources, or any other resource area. Desired ROS maps and ROS-related plan direction are used during project planning and design and NEPA effects analysis.

This section provides examples of how to use the land management plan to frame projects and actions so they are consistent with—and help implement—the unit's land management plan direction for ROS.

Program of Work and Project Planning

The land management plan can be implemented in many ways. Where existing conditions are not aligned with the land management plan's desired conditions and other plan components, these discrepancies may inform the purpose and need of future projects and management activities. A good place to start is reviewing the plan objectives, which are designed to close the gap between existing and desired conditions. Objectives may be forest-wide or designed for specific geographic or management areas. Here are some other things to consider when developing a program of work and planning projects:

- What existing projects in the program of work (even those led by other resources) have opportunities to incorporate desired conditions for ROS and meet multiple resource outcomes? For example, is there a water resources project with plans to decommission roads in a desired semi-primitive nonmotorized ROS class?
- What plan content can help inform future projects or proposed actions? Objectives are the most common plan content to inform this.
- Are there gaps between existing and desired conditions that aren't already addressed by land management plan objectives? The mapped desired ROS and desired conditions in the land management plan may trigger project proposals to modify recreation opportunities. If the desired ROS class is different than the existing ROS inventory class, the unit might propose one or more projects to move toward desired conditions.

What if a proposed project would change the existing or desired ROS classes?

Changes to Existing ROS Classes

Mapping existing ROS classes is a descriptive exercise and does not represent plan direction. The existing ROS inventory can be updated without a plan amendment whenever conditions on the ground change so much that the current existing condition classification no longer fits. This would be done by documenting what has changed (for example, a change in motorized use, developments that affect the naturalness of the setting, or a change in user density that affects the degree of solitude or social interaction that is likely to occur) and making the appropriate adjustments to the existing ROS inventory map.

Changes to Desired ROS Classes

Decisions affecting desired recreation settings or opportunities would be based on NEPA analyses, including disclosure of expected changes to desired ROS classes and the relationship of such changes to desired conditions in the land management plan. The public would have an opportunity to comment on such projects before any decision is made.

Land management plans completed prior to the 2012 Planning Rule may not include mapped desired ROS classes and ROS-related plan direction. These plans may only have an existing condition ROS inventory, or the ROS allocations are not plan direction and are not considered desired conditions. In this case, the mapped ROS would be updated, and changes documented with the rationale and date of the change.

If desired ROS classes are allocated in the plan and the plan has ROS-related plan direction, the project needs to be consistent with the land management plan.

Existing ROS Inconsistencies

During project implementation, the interdisciplinary team may find some geospatial mapping errors or inconsistencies due to the forest-wide scale of mapping for ROS. Examples of this are existing features with long-term impacts that will not achieve the desired ROS class in the life of the land management plan (such as roads or trails, powerlines, recreation facilities, pipelines, utility corridors, etc.), or geospatial data inconsistencies, especially along ROS boundaries. Inconsistencies with the desired ROS classes should be addressed at the project-level. Project-level analysis should convey the type and scale of any existing inconsistencies, design mitigation measures to eliminate or reduce the existing inconsistency, document the inconsistency, or update the mapped desired ROS. Depending on the scope and scale of the deviation, the responsible official may decide to:

1. Maintain the mapped desired ROS class and document the site-specific existing deviations in instances where site-specific existing deviations are inconsequential to achieving the desired ROS class; or
2. Change the mapped desired ROS class in instances where existing deviations are larger in scale and renders achieving the desired ROS class infeasible.

Updates to improve map accuracy by resolving these existing inconsistencies would be completed as "clerical errors," per the definition of administrative changes (36 CFR 219.13 (c)).

Inconsistencies from Project Proposed Activities

New project proposals are approached differently. New projects should be designed with proper design features or mitigations to meet the desired ROS class allocated in the land management plan. In addition, projects in areas where existing conditions do not meet the desired ROS class should evaluate whether opportunities exist to design the project to move toward the desired ROS class allocated in the land management plan. It is possible that the effects of a proposed project may preclude the unit from meeting the desired conditions for the ROS class. If that is the case, the project would not be consistent with the plan. Callout box 16 describes what happens if a project is not consistent with the plan.

Callout Box 16. Frequently Asked Question About Projects and Plan Consistency.

What happens if a project is not consistent with the plan?

- Modify the proposed project or activity to make it consistent with relevant plan components;
- Reject the proposal or terminate the project or activity;
- Amend the land management plan so the project or activity will be consistent with the plan as amended; or
- Amend the plan contemporaneously with the approval of the project or activity so that the project or activity will be consistent with the plan as amended. This amendment may be limited to apply only to the project or activity.

(36 CFR 219.15(c)(1-4))

In summary, changes to mapped desired ROS settings may be documented in either plan amendments or administrative changes to the plan, depending on the situation. Following is a summary of each situation:

Plan amendments (36 CFR 219.13 (b)):

- Changes to plan components.
- Changes where plan components apply.

Administrative changes (36 CFR 219.13 (c)):

- Changes to other plan content ("Distinctive Roles and Contributions," "Monitoring Program," etc.).
- Corrections of clerical errors to any part of the plan.
- Conformance to new statutory or regulatory requirement.

Managing ROS Setting Characteristics

In some circumstances, it may be difficult to be consistent with all three setting characteristics (physical, social, managerial) that collectively make up a ROS class. One of the individual setting characteristics may be adjusted to ensure the overall desired ROS class is enhanced or maintained. Consider which ROS setting characteristics would be inconsistent with the mapped desired ROS class: physical, social, or managerial. Ideally, all three setting characteristics carry equal weight; however, changes to the physical characteristics could be more permanent or less easily changed. Once physical developments or other modifications are in place, it is generally infeasible or difficult to decommission them. The social and managerial components can often be adjusted more nimbly or altered in shorter timeframes. Inconsistencies should be the exception, not the rule, but should be recognized where unavoidable to balance the benefits of maintaining the desired characteristics that are determined to be the most important for the desired ROS class and desired conditions for the area.

To balance benefits of maintaining the desired characteristics, consider whether actions can be taken on the social or managerial characteristics to still meet the physical characteristics of a desired ROS class. For example, the managerial presence may need to increase from that typically found in a primitive ROS class to address increased public demand and resulting resource impacts. In these situations, determine if taking this action would allow for the physical and social characteristics to be consistent with the desired ROS class, even though the managerial characteristic may not be.

In addition to the desired ROS maps, consider including a narrative description or using the ROS setting characteristics tables (ROS matrix format shown in **appendix B**) for communicating existing and desired ROS classes in the project analysis. The matrix can be useful to show more subjective aspects of ROS settings that are difficult to map, such as social or managerial characteristics. The matrix can be used in the following ways:

- Display both existing and desired ROS settings in the same table and show a shift in the characteristics from existing to desired ROS settings.
- Document inconsistencies within a mapped ROS class.
- Display the shifts in individual setting characteristics considered during project planning to meet the overall desired ROS.

Following are examples using the matrix format, with the ROS setting characteristics highlighted in the table. The existing class has a green outline, while the desired ROS class cells are shaded green. The arrows show the direction of change or shifts between setting characteristics to maintain the overall desired ROS.

The example matrix in table 3 depicts a wilderness area where higher social encounters are inconsistent with the desired primitive ROS class. Managerial actions (higher level of managerial presence) are needed to improve solitude and move overall social conditions toward the desired primitive or semi-primitive nonmotorized ROS class and provide more opportunities for solitude.

In this example, the arrow in the "Managerial" row of the table represents increased management presence, increased signing, or other onsite regimentation. The result of that managerial action is improved opportunities for solitude, shown with the arrow in the "Social" characteristics row of the table.

Table 3. Example ROS Matrix for Wilderness Area.

	PRIMITIVE	SEMI-PRIMITIVE NONMOTORIZED	SEMI-PRIMITIVE MOTORIZED
Physical	**Predominately unmodified, naturally evolving, vast, and remote.** **Typically 3 miles or more from designated motorized routes and areas; large in scale (5,000 or more acres). Nonmotorized trails.**	Predominately natural/ natural appearing; rustic improvements to protect resources. Typically 0.5 mile or more from designated motorized routes and areas; moderate to large in scale (2,500 or more acres). Nonmotorized routes.	Predominately natural appearing, motorized use visible and audible. Typically contain designated high-clearance vehicle roads and motorized trails or areas (2,500 or more acres).
Managerial	Little to no onsite regimentation; few encounters with Forest Service personnel. Visitor use management is largely offsite and accomplished through regulation, permitting, and other visitor use management techniques.	**Minimum or subtle signage, regulations, or other on-site regimentation. Low encounters with Forest Service personnel or partners working on behalf of the agency.**	Minimum, subtle onsite controls; designated motorized routes and areas.
Social	Very high probability of solitude; closeness to nature; self-reliance, high challenge, and risk; little evidence of people. Typically 6 or fewer encounters with other parties on trails, and fewer than 3 parties visible from camping sites.	**High probability of solitude; closeness to nature; self-reliance. High to moderate challenge and risk. Usually 6 to 15 encounters with other parties on trails; 6 or fewer parties visible from camping sites.**	Moderate to high probability of solitude. High to moderate degree of risk/ challenge. Usually 6 to 15 encounters with other parties on trails; 6 or fewer parties visible from camping sites.

Legend: Existing ROS | **Desired ROS** | Direction of change

The example matrix in table 4 depicts an existing dispersed camping area with an existing semi-primitive motorized ROS class where the plan revision process determined the desired ROS class is roaded natural to meet visitor demand. Future site-specific planning will propose management actions and infrastructure to shift toward desired roaded natural ROS settings. The arrows showing the direction of change in this example could represent development of designated campsites, road improvements, additional managerial presence and onsite regulation, and an associated shift toward a more social experience.

Table 4. Example ROS Matrix for Dispersed Camping Area Shifting Toward Higher Development.

	SEMI-PRIMITIVE MOTORIZED	ROADED NATURAL
Physical	Predominately natural appearing, motorized use visible and audible. Typically contain designated high-clearance vehicle roads and motorized trails or areas (2,500 or more acres). Recreation sites typically development scales 0-2; purpose of infrastructure is to protect natural and cultural resources.	**Natural appearing with nodes and corridors of development, such as campgrounds, trailheads, boat launches, and rustic, small-scale resorts.** **Typically contain designated improved surface roads.** **Recreation sites typically development scales 0-3, sometimes development scale 4.**
Managerial	Minimum, subtle onsite controls; designated motorized routes and areas.	**Signs and regulations present but typically subordinate to the setting. Likely to encounter Forest Service personnel or partners.**
Social	Moderate to high probability of solitude. High to moderate degree of risk/challenge. Usually 6 to 15 encounters with other parties on trails; 6 or fewer parties visible from camping sites.	**Moderate evidence of human sights and sounds; opportunities to socialize.**

Legend: Existing ROS | **Desired ROS** | Direction of change ❮ ❯

Landscape and Project Level Examples

See Module 7 – "Implementation" in the "Introduction to Sustainable Recreation in Land Management Planning" training for two detailed examples, including:

1. Winter travel planning, a landscape-scale project, when the line officer makes the decision to initiate subpart C of the Travel Management Rule. The example details each step from compiling the plan direction and identifying the purpose and need and proposed action to analysis and monitoring.
2. Project planning for a forest health and restoration project in an urban interface. The example details the role of the scenery and recreation specialist on the interdisciplinary team for each step of the project from purpose and need and proposed action to analysis, implementation, and monitoring.

Visitor Use Management Example

A popular dispersed recreation area exists on a unit. The area includes both desired semi-primitive nonmotorized and semi-primitive motorized ROS classes. During the last few years, the area has received a lot more dispersed camping use. This is causing shifts in social characteristics and managerial needs because of the demand for campsites and associated facilities with limited supply of both. Resource impacts are occurring due to increasing dispersed camping footprints and dispersed campsites being created in new locations. A need also exists for more intensive management due to increased social pressure, including higher levels of encounters and vehicle traffic on roads not designed for this level of use.

1. District leadership identified the need for a visitor use management plan. The preferred alternative is to manage the social pressure by increasing management presence to maintain the physical characteristics of the mapped desired ROS classes.
2. The land management plan contains desired ROS classes and ROS-related plan components. These are referenced to develop site-specific desired conditions in the visitor use management plan. The visitor use management plan develops site-specific management actions using the site-specific desired conditions consistent with desired ROS classes.
3. The visitor use management plan acknowledges that the managerial characteristics might be inconsistent with the desired ROS classes in order to maintain the social and physical characteristics of the mapped desired semi-primitive nonmotorized and semi-primitive motorized classes. This inconsistency is documented in the visitor use management plan with rationale.
4. NEPA might be needed, depending on the management actions identified. The proposed action is designed to be consistent with the land management plan. Alternatives may consider changing the desired ROS, but this would result in executing a plan amendment to change land management plan content.

The example matrix in table 5 shows a dispersed camping area in a semi-primitive motorized desired ROS class that is experiencing increased demand and visitor use inconsistent with the desired ROS class. Managerial actions (a higher level of managerial presence) are needed to shift the social characteristics and maintain semi-primitive motorized physical and social settings. The arrow in the "Managerial" row represents additions of managerial controls, such as signs or increased management presence. The arrow in the "Social" characteristics row shows the result of management actions to maintain a lower level of social encounters in the area.

Table 5. Example ROS Matrix for Dispersed Camping Area Maintaining Lower Level of Development.

	SEMI-PRIMITIVE MOTORIZED	ROADED NATURAL	RURAL
Physical	**Predominately natural appearing, motorized use visible and audible.** **Typically contain designated high-clearance vehicle roads and motorized trails or areas (2,500 or more acres).** **Recreation sites typically development scales 0-2; infrastructure is to protect natural and cultural resources.**	Natural appearing with nodes and corridors of development, such as campgrounds, trailheads, boat launches, and rustic, small-scale resorts. Typically contain designated improved surface roads. Recreation sites typically development scales 0-3, sometimes development scale 4.	Altered landscapes with cultural emphasis such as rural, pastoral, or agricultural. Administrative sites, historic complexes, and moderately developed resorts are typical. Recreation sites, typically development scale 4-5.
Managerial	Minimum, subtle onsite controls; designated motorized routes/areas.	**Signs and regulations present but typically subordinate to the setting. Likely to encounter Forest Service personnel or partners.**	**Obvious signing (regulation and information), education and law enforcement staff.**
Social	**Moderate to high probability of solitude. Usually 6-15 encounters with other parties on trails; 6 or fewer parties visible from camping sites.**	Moderate evidence of human sights and sounds; opportunities to socialize.	High interaction among users is common. Other people in constant view.

Legend: Existing ROS | **Desired ROS** | Direction of change

Proposed Facilities Example

A utility company has approached the unit to develop a new transmission corridor or wind energy development in an area with mapped desired semi-primitive nonmotorized ROS class.

1. Several alternatives are proposed, and effects analyzed. One alternative ("no action") would maintain the desired semi-primitive nonmotorized class. Other alternatives propose to develop the energy corridor.

2. Effects analysis finds that even with design criteria and mitigation, the proposed action and action alternatives, which include new transmission structures, right-of-way clearing, a service road, and increased utility maintenance vehicles, would result in a new ROS setting of semi-primitive motorized, roaded natural, or rural ROS, different from the mapped desired semi-primitive nonmotorized setting.
3. The responsible official needs to decide whether to maintain the desired semi-primitive nonmotorized setting and deny the project or select an action alternative that would approve the project and amend the land management plan to change the desired ROS to semi-primitive motorized, roaded natural, or rural.

Recreation Site Planning and Design Considerations

At times, legislation provides additional emphasis on infrastructure and recreation site planning and design. ROS has strong ties to recreation site planning and design. When planning for these projects, review ROS-related plan direction and existing and desired ROS classes. Where existing ROS settings differ from desired settings, look for opportunities to move toward desired conditions (callout box 17).

Select facilities and materials appropriate for the desired ROS classes. Some examples include:

- Outdoor recreation access routes in a developed site must be "firm and stable" to meet accessibility guidelines. In rural and urban ROS settings, concrete surfacing might be the best material. In other ROS settings, compacted aggregate or native soil are more appropriate. (See "Forest Service Outdoor Recreation Accessibility Guidelines.")
- Recreation site development scale and ROS should be compatible (See **Definitions** section and **appendix C** for typical ROS settings consistent with each development scale). ROS settings are described in design narratives.

Callout Box 17. Recreation Site Development Scenarios.

When considering new design or redesign of developed recreation sites, use the desired ROS class characteristics, Visitor Use Management Plan Framework, or Recreation Master Planning to avoid development creep. An example of development creep follows.

Management actions tend to move settings toward the more developed end of the spectrum. The setting can change over time through small decisions. For example, improvements to an access road increase use and changes to the traditional types of uses and activities occurring in an area. The Forest Service responds by incrementally developing a popular dispersed area. A common but avoidable progression is:

- A dispersed recreation corridor sees increasing use with more dispersed camping.
- First, campsites are defined or hardened…
- Then some fire rings are installed…
- Then tables put in…
- Then a toilet…
- Then campsites are designated or added to a reservation system…
- Before long, a semi-primitive motorized setting has changed to a roaded natural or rural setting

CONCLUSION

The 2012 Planning Rule and associated directives require the use of the ROS throughout the land management planning process to provide for recreation settings and sustainable recreation. The directives clarify that sustainable recreation is derived through the integrated planning process and emerges as the resultant set of desired ROS classes (FSH 1909.12, sec. 23.23a 1.d). ROS is a management tool used to identify and map existing recreation settings and opportunities (existing ROS) and classify, assign, and manage desired recreation settings and opportunities (desired ROS). ROS is mapped for summer and, where relevant, winter.

The ROS is a management tool for site-specific decisions during project and plan implementation. Desired ROS classes outline recreation setting characteristics for which all projects (timber, vegetation, travel management, special uses, etc.) should consider during design and implementation. Site-specific decisions and management actions achieve or maintain desired conditions (expressed as mapped desired ROS classes).

Additional Information

2012 Planning Rule Final Directives, including Forest Service Manuals (FSM 1920 and 2310) and Forest Service Handbooks (FSH 1909.12) https://www.fs.usda.gov/detail/planningrule/home/?cid=stelprd3828310

Aldo Leopold Wilderness Research Institute. Available: https://leopold.wilderness.net/

Forest Service Recreation Planning Resources. Available: https://www.fs.usda.gov/managing-land/national-forests-grasslands/recreation/programs/planning

Forest Service Manual 2310 – Sustainable Recreation Planning

Forest Service Handbook 2309.13, chapter 10 – Planning and Design of Developed Recreation Sites and Facilities

Forest Service Research and Development. Available: https://www.fs.usda.gov/research/

Introduction to Sustainable Recreation in Land Management Planning training. Thirteen modules that provide a more comprehensive dive into resources and considerations to provide for sustainable recreation during land management planning. Available in AgLearn. Search for "2310."

Interagency Visitor Use Management Council. 2016. Visitor Use Management Framework: A Guide to Providing Sustainable Outdoor Recreation. Edition One. Available: https://visitorusemanagement.nps.gov/Content/documents/VUM_Framework_Edition%201_508%20Compliant_IVUMC.pdf

Interagency Visitor Use Management Council. 2019a. Monitoring Guidebook: Managing the Amounts and Types of Visitor Use to Achieve Desired Conditions. Edition one. Available: https://visitorusemanagement.nps.gov/Content/documents/lowres_Visitor%20Capacity%20Guidebook_Edition%201_IVUMC.pdf

Interagency Visitor Use Management Council. 2019b. Visitor Capacity Guidebook: Evaluating Effectiveness of Visitor Use Management. Edition one. Available: https://visitorusemanagement.nps.gov/Content/documents/508_final_Monitoring_Guidebook_Edition_One_IVUMC.pdf

National Forest Service Library. Available [internal]: https://fsweb.wo.fs.fed.us/library/

Recreation Opportunity Spectrum National Geospatial Data Dictionary. National GIS Data Dictionary Available [internal]: http://fsweb.datamgt.fs.fed.us/current_data_dictionary/index.shtml

Recreation-related direction in FSM 1920 and FSH 1909.12. Available: https://www.fs.usda.gov/sites/default/files/Directives-Cheat-Sheet.pdf

U.S. Department of Agriculture, Forest Service. 1982. 1982 ROS Users Guide. Available: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5277167.pdf

U.S. Department of Agriculture, Forest Service. 1986. 1986 ROS Book. Washington, DC: U.S. Department of Agriculture, Forest Service. n.p. Available: [-----] ROS_red_book_1986.pdf | Powered by Box

U.S. Department of Agriculture, Forest Service. 1990. ROS Primer and Field Guide. R6-REC-021-90. n.p. Available: https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5335339.pdf

U.S. Department of Agriculture, Forest Service. 2013. Forest Service Outdoor Recreation Accessibility Guidelines. Available: https://www.fs.usda.gov/sites/default/files/FSORAG-2013-Update.1.pdf

U.S. Department of Agriculture, Forest Service. 2019. National Recreation Opportunity Spectrum (ROS) Inventory Mapping Protocol. Washington Office. Available [internal]: SummerROSInventoryMapping Protocol-ver12.pdf

U.S. Department of Agriculture, Forest Service. 2019. National Winter Recreation Opportunity Spectrum (ROS) Inventory Mapping Protocol. Washington Office. Available [internal]: WinterROSInventory MappingProtocol-ver12.pdf

Definitions

Source: FSM 2310.5 – Definitions

Development Scale. *A classification system for recreation sites that distinguishes the degree of site amenities and alteration present. Development scales range from 0 (no Forest Service investment or amenities) to 5 (designed developed site with significant Forest Service investment and delineation). Reference FSH 2309.13, section 10.5 and 10.8.*

Distinctive Roles and Contributions. *A description of an area's key attributes and associated benefits and outcomes (uses, values, products, and services) that National Forest System lands are: uniquely poised to provide when viewed within a larger context; important and relevant at the local, regional and/or national levels; and contribute toward socioeconomic and ecological sustainability. It serves as a unifying context under which integrated desired conditions and other plan components are designed to support. Reference FSH 1909.12, chapter 20, section 22.32.*

Integrated Resource Management. *Multiple use management that recognizes the interdependence of ecological resources and is based on the need for integrated consideration of ecological, social, and economic factors (36 CFR 219.19).*

Land Management Plan. *A document or set of documents that provide management direction for an administrative unit of the National Forest System developed under the requirements of the planning rule (36 CFR 219.19). Land management plans guide sustainable, integrated resource management of the resources within the plan area in the context of the broader landscape, giving due consideration to the relative values of the various resources in particular areas (36 CFR 219.1 (b)).*

Landscape. *A defined area irrespective of ownership or other artificial boundaries, such as a spatial mosaic of terrestrial and aquatic ecosystems, landforms, and plant communities, repeated in similar form throughout such a defined area (36 CFR 219.19).*

Monitoring. *A systematic process of collecting information to evaluate actions or changes in conditions and relationships (36 CFR 219.19).*

Plan Components. *The parts of a land management plan that guide future project and activity decision-making. Specific plan components may apply to the entire plan area, to specific management areas or geographic area, or to other areas identified in the plan. Plan components include: desired conditions, goals (optional), objectives, standards, guidelines, and suitability of lands (36 CFR 219.19).*

Project. *An organized effort to achieve an outcome on National Forest System lands identified by location, tasks, outputs, effects, times, and responsibilities for execution (36 CFR 219.19).*

Recreation Access. *Visitor access to and within National Forest System lands, through a variety of legally authorized travel modes (FSH 2309.13, sec. 10.5). Travel modes (foot, horse, bicycle, motorized vehicle, boat, or plane) and associated infrastructure (trails, roads, boat launches, airstrips, and parking areas) are for the purpose of engaging in recreation activities in specific recreation settings on National Forest System lands.*

Recreation Benefits. *Positive experiences and other positive outcomes that people derive from participating in outdoor settings. Benefits include those derived from the natural environment (ecosystem services), the built environment, and/or from specific program management and services. Examples include improved: physical and mental health, family cohesion, social integration, child development, economic stimulation, work productivity, resource stewardship, and conservation ethic. (Also reference "Ecosystem Services.")*

Recreation Experience. *The perceptions, feelings, and reactions that a visitor has before, during, and after a visit to an area ("Interagency Visitor Use Management Framework: A Guide to Providing Sustainable Outdoor Recreation," edition 1, July 2016).*

Recreation Opportunity. *An opportunity to participate in a specific recreation activity in a particular recreation setting to enjoy desired recreation experiences and other benefits that accrue. Recreation opportunities include nonmotorized, motorized, developed, and dispersed recreation on land, water, and in the air (36 CFR 219.19 and FSH 1909.12, zero code, sec. 05).*

Recreation Opportunity Spectrum (ROS). *A system by which existing and desired recreation settings are defined, classified, inventoried, and monitored. Recreation settings are divided into six distinct classes (primitive, semi-primitive nonmotorized, semi-primitive motorized, road natural, rural, and urban). Classifications are based on physical, social, and managerial setting characteristics (reference "ROS Setting Characteristics" in this manual). The underlying premise of the ROS is that visitors choose a specific setting and activity to derive desired experience(s) and other benefits.*

ROS Class Characteristics. *The physical, social, and managerial features that function collectively to define a specific Recreation Opportunity Spectrum setting (ROS class). Because setting characteristics may change by season, the corresponding ROS class may also change by season. Both summer and winter setting characteristics for each of the six primary ROS classes are summarized in FSM 2311, exhibit 01.*

Recreation Opportunity Spectrum Classes. *There are six nationally defined Recreation Opportunity Spectrum classes or settings. They are defined by the social, managerial, and physical characteristics (reference "ROS Setting Characteristics" table in this manual) of a place that, when combined, provide distinct recreation opportunities (36 CFR 219.19 and FSH 1909.12, zero code, sec. 05). The terms "recreation setting" and "recreation class" are synonymous and used interchangeably throughout this manual. Each of the six primary ROS settings/classes is defined below:*

1. **Primitive** *settings encompass large, wild, and predominately unmodified landscapes. Their size and configuration create remoteness from the sights and sounds of human activities, management, and development. Signs and other structures are minimal and constructed of rustic, native materials. Motorized travel does not occur. Encounters with other users is very low, offering visitors the opportunity for solitude, self-reliance, closeness with nature, challenge, risk, and discovery. Many primitive settings coincide with designated wilderness areas in which mechanized equipment is not present. Additional primitive settings may also occur outside of wilderness areas. Mechanized travel and motorized equipment may occur in non-wilderness primitive settings.*
2. **Semi-Primitive Nonmotorized** *settings are characterized by predominantly natural or natural-appearing landscapes. The size of these areas facilitate distance from more heavily used and developed areas, creating a sense of remoteness. Interaction with other users is low. These settings provide opportunities for self-reliance and utilizing wildland skills. Motorized vehicles are not present, while mountain bikes and other mechanized equipment may be present. Although some roads may be evident, they do not dominate the landscape. Vehicular use is infrequent. Occasional administrative use occurs on these roads for the purpose of natural and cultural resource protection and management.*
3. **Semi-Primitive Motorized** *classes are characterized as predominately natural or natural appearing backcountry settings. Motorized travel by off-highway vehicles or high-clearance vehicles occurs on designated routes and areas. Motorized routes are typically maintenance level 0-2 roads or motorized trails, offering a high degree of self-reliance, challenge, and risk in exploring these large backcountry settings. Mountain bikes, other mechanized equipment, and nonmotorized uses are also present. Limited rustic facilities are present for the purpose of visitor safety, sanitation, and resource protection.*

4. **Roaded Natural** *settings are characterized by predominately natural-appearing settings, with moderate sights and sounds of human activities and development. The overall perception is one of naturalness. Evidence of human activity varies from area to area and may include improved highways and high-maintenance-level roads, developed campgrounds and other recreation sites, small resorts and summer homes, and evidence of other multiple uses and management activities, such as livestock grazing, timber harvesting, mining, watershed restoration activities, and oil and gas operations. Roads, motorized equipment, and vehicles are common in this setting. Nonmotorized uses are also present. The density of use is moderate except at developed sites, where concentrations of use are higher. Regulations pertaining to user behaviors are common but generally less restrictive than those in the rural and urban ROS classes.*
5. **Rural** *settings are characterized as modified natural environments. While these landscapes often contain geometric patterns created by management activities, there is a dominant sense of open greenspace, typically characterized as pastoral farm and ranch lands. Facilities are common and may include resorts and summer home complexes, administrative sites and work centers, and highly developed campgrounds, interpretive sites, trailheads, picnic areas, and other recreation facilities. The sights and sounds of human activity and management are readily evident, and the level of interaction with other users ranges from moderate to high.*
6. **Urban** *settings are characterized as highly modified landscapes, dominated by structures and other infrastructure. Clustered facilities contain amenities for user convenience and comfort. There is a preponderance of onsite regulations that direct and limit the behavior of visitors. Very high and concentrated use levels are common. These settings are typically small in overall size and not common on National Forest System lands. Large ski areas, visitor centers, and resorts are sometimes classified as urban ROS settings.*

Recreation Opportunity Spectrum (ROS) Subclass. *Areas within one of the six primary desired ROS classes that exhibit unique or distinct characteristics that occur in more than one location across the unit, region, or nation. The purpose of subclasses is to better convey desired setting characteristics (physical, social, and/or managerial) so that management direction and actions can be designed to maintain or achieve those desired characteristics and associated benefits. Reference FSH 1909.12, section 23.23a, 2.a.*

Scenic Character. *A combination of the physical, biological, and cultural images that gives an area its scenic identity and contributes to its sense of place. Scenic character provides a frame of reference from which to determine scenic attractiveness and to measure scenic integrity (36 CFR 219.19). The term scenic character replaces the term landscape character, as defined and referenced in FSM 2380 and Agriculture Handbook 701.*

Scenic Integrity Objectives. *The minimum degree to which desired scenic character attributes are to remain intact (Agriculture Handbook 701, pp. 5-9, 20). There are four nationally defined scenic integrity objectives that can serve as desired conditions, and one ("Very Low") used only in describing existing (not desired) conditions. Each is defined below.*

- **Very High.** *The landscape is intact with only minor changes from the valued attributes described in the scenic character.*
- **High.** *Management activities are unnoticed, and the landscape appears unaltered.*
- **Moderate.** *Management activities are noticeable but are subordinate to the scenic character. The landscape appears slightly altered.*
- **Low.** *The landscape appears altered. Management activities are evident and sometimes dominate but are designed to blend with surroundings by repeating form, line, color, and texture of attributes described in the scenic character.*

- **Very Low.** *Used to describe landscapes that are heavily altered and in which the valued attributes described in the scenic character are not evident. Very Low is used only to describe the existing scenic integrity. It is NOT used as a scenic integrity objective or desired condition.*

Scenery Management System. *The Scenery Management System provides a systematic approach to inventory, analyze, monitor, and define desired conditions for the scenic resources on National Forest System lands. Reference FSM 2380 and Agriculture Handbook 701.*

Scenic Stability/Sustainability. *The degree to which the valued scenic character and its scenery attributes can be sustained through time and ecological progression. Reference the "Scenic Stability/Sustainability Technical Guide," sometimes referred to as "appendix J."*

Sense of Place. *The cultural and physical attributes of an area that provide meaning or value to communities and visitors. Sense of place characterizes the connection people have with specific landscapes. In a land management plan context, sense of place can help inform a unit's distinctive roles and contributions, describe valued places, and focus plan components to ensure the values and connections people have with the plan area are maintained for future generations.*

Sustainable Recreation. *The set of recreation settings and opportunities on the National Forest System that is ecologically, economically, and socially sustainable for present and future generations (36 CFR 219.19 and FSH 1909.12, zero code, sec. 05). At the forest-scale, sustainable recreation is derived through the integrated planning process and emerges as the resultant set of desired recreation opportunities spectrum classes and other plan components (FSH 1909.12, ch. 20, 23.23 1.d).*

Appendix A. ROS and Travel Management Rule

This appendix provides more detailed information on the relationship between ROS and the Travel Management Rule. In section **Land Management Plan and Travel Management**, a common point of confusion between land management plan decisions and travel management decisions was highlighted. Site-specific public motorized use designations and decisions are not land management plan decisions. They are analyzed and designated through travel management planning. Land management plans assign desired ROS classes. Desired ROS classes, as well as other plan components and content, provide the framework and sideboards for future travel management planning processes. The land management plan does not, however, make decisions regarding the location of specific designated routes. In other words, desired ROS classes do not open, close, or designate routes or areas for public use, but they inform future project-level decisions (callout box 17). The unit's motor vehicle use maps (and over-snow vehicle use maps, if applicable) display where and what type of public motorized use is allowed across the unit (36 CFR 219.15; FSH 1909.12, secs. 21.41 and 23.23l).

Subpart A

Subpart A requires each National Forest System unit to:

- Identify the minimum road system needed for: (1) safe and efficient travel, and (2) for administration, utilization, and protection of National Forest System lands.
- Identify the roads under National Forest System jurisdiction that are no longer needed to: (1) meet forest recreation and resource management objectives and (2) reflect long-term funding expectations.
- Decommission, or consider for other uses, those roads identified as unneeded.

Identifying the minimum road system requires a dynamic, interdisciplinary, and integrated travel analysis among all resource areas.

Travel Analysis Process + Travel Analysis Report

- The travel analysis process is a science-based process to ensure that future travel management decisions are based on the consideration of environmental, social, and economic impacts on all National Forest System roads.
- The travel analysis process results in a travel analysis report and corresponding map, which displays recommended "Likely Needed" and "Likely Not Needed" roads. The travel analysis report provides the basis for developing proposed actions to implement the minimum road system or change travel management decisions.
- Travel analysis reports themselves represent a "snapshot" in time. As site-specific environmental analysis should build on and incorporate relevant information developed during travel analysis, travel analysis reports should be subsequently updated to reflect decisions.

Minimum Road System

A minimum road system consists of National Forest System roads, maintenance levels 1 through 5. The minimum road system can be considered the "backbone" of the road system as it includes all National Forest System roads. Any road not identified as part of the minimum road system is considered unneeded and should be scheduled for decommissioning or conversion to another use.

An example of conversion of an unneeded road to another use would be a road converted to a motorized or nonmotorized trail. Priority for decommissioning should be given to those unneeded roads that pose the greatest risk to public safety or environmental degradation. In the land management plan process, subpart A can inform the Assessment and Plan Development phases, as well as associated plan direction, including desired ROS and the monitoring and evaluation program.

Subpart A Summary

The identification of the minimum road system will be incrementally completed as proposed actions, informed by travel analysis report recommendations, and resulting in NEPA decisions. Each NEPA project's "Purpose and Need" section must clearly state the minimum road system and unneeded roads. Subpart A is summarized in the following steps:

1. Conduct a travel analysis, sometimes referred to as the "travel analysis process."
2. Report the analysis' findings in a travel analysis report.
3. Use the report to identify the analysis area's minimum road system.
4. Implement the minimum road system and subsequent travel management as proposed actions within projects adhering to NEPA.

Subpart B

Subpart B describes the requirements for each National Forest System unit to: (1) designate roads, trails, and areas for motor vehicle use and (2) identify designated roads, trails, and areas on a motor vehicle use map.

In the land management plan development process, subpart B decisions inform existing ROS mapping (existing conditions). Desired ROS classes developed in the land management plan process and finalized in the land management plan decision guide and constrain future travel management decisions. All travel management decisions must be consistent with plan direction (desired ROS, desired conditions, and other plan components).

Minimum Road System versus Subpart B Motor Vehicle Use Map

While the minimum road system represents all needed roads open or closed to public motorized use, the motor vehicle use map displays the "subset" of the minimum road system roads (trails and areas) that are designated for public motorized use by vehicle class and time of year. The motor vehicle use map does not display intermittent (authorized/permitted) use roads, roads in storage (maintenance level 1), or nonmotorized trails. The motor vehicle use map is used to enforce public motorized use.

Subpart C

In January 2015, the USDA amended Travel Management Rule, subpart C, requiring the responsible official to designate National Forest System roads, National Forest System trails, and areas on National Forest System lands where over-snow vehicle use is allowed based on where snowfall is adequate for over-snow vehicle use to occur.

Subpart C decisions (where relevant) inform existing winter ROS mapping. Desired winter ROS settings guide and constrain future winter travel management decisions.

Callout Box 18. Useful ROS and Land Management Plan Talking Points.

Route designations are NOT land management plan decisions as they require site-specific analysis and a separate decision document.

- Subpart A is NOT a decision document, but CAN INFORM the assessment and plan components, including desired ROS classes and the monitoring and evaluation program.
- Subpart B decisions inform existing ROS mapping (existing conditions). Desired ROS classes guide and constrain future travel management decisions.
- Subpart C decisions (where relevant) inform existing winter ROS mapping. Desired winter ROS classes guide and constrain future winter travel management decisions.

All travel management decisions must be consistent with plan direction (ROS settings, desired conditions, and other plan components), or the plan must be amended.

(36 CFR Part 212, 36 CFR 219.15 & FSH 1909.12, secs. 21.41 and 23.23l)

Should Desired Winter ROS Classes Be Mapped in the Revised Land Management Plan?

This answer depends on each unit's unique situation. The directives state that the plan must include desired conditions for sustainable recreation using mapped desired ROS classes and that the desired recreation settings and opportunities may vary by season (callout box 19).

Callout Box 19. Directives Regarding Varying Desired Recreation Settings by Season.

The plan must include plan components, including standards or guidelines, to provide for sustainable recreation integrated with other plan components as described in 23.21a. To meet this requirement the plan:

a. ***Must*** *include desired conditions for sustainable recreation using mapped desired ROS classes… Desired recreation settings and opportunities may complement surrounding land uses and* ***may vary by season.***

(FSH 1909.12, sec. 23.23a, 2a)

For most units, the recommendation is to complete environmental analysis of subpart C first. This recommendation is based on the following key considerations:

- What is the size of the unit? Completing desired winter ROS classes before subpart C is more helpful for smaller units. It is more challenging to address desired winter ROS classes for large units due to the scale of land management plan mapping.
- Are there existing winter travel management decisions? If some winter travel planning decisions exist or much of the forest has been analyzed in regard to winter travel planning, the team is likely somewhat informed on the partner and public concerns and desired outcomes.
- Is the unit fully informed on partner and public concerns? Plan revision process often does not have enough time or staff for public collaboration or have site-specific knowledge regarding winter travel planning.

Appendix B. Physical, Managerial, and Social Characteristics for Each ROS Class

Table 6. Summer Season Physical, Managerial, and Social Characteristics for Each ROS Setting.

	PRIMITIVE	SEMI-PRIMITIVE NONMOTORIZED	SEMI-PRIMITIVE MOTORIZED	ROADED NATURAL	RURAL	URBAN
Physical Theme	Predominately unmodified; naturally evolving, vast, and remote. Typically 3 miles or more from designated motorized routes and areas and large in scale (5,000 or more acres).	Predominately natural/ natural appearing; rustic improvements to protect resources. Typically ½ mile or more from designated motorized routes and areas and moderate to large in scale (2,500 or more acres).	Predominately natural appearing; motorized use visible and audible. Typically contain designated high-clearance vehicle roads and motorized trails or areas (2,500 or more acres).	Natural appearing with nodes and corridors of development, such as campgrounds, trailheads, boat launches, and rustic, small-scale resorts. Typically within ½ mile of designated improved roads.	Altered landscapes with cultural emphasis, such as rural, pastoral, or agricultural. Administrative sites, historic complexes, and moderately developed resorts are typical.	Highly developed site modifications and facilities. Regionally significant destination resorts, as well as large, highly developed visitor centers are examples of urban nodes within National Forest System lands.
Infrastructure (access and facilities)	Access: Nonmotorized trails; typically trail class 1; travel on foot and horse; no motorized travel; no mechanized travel within designated wilderness. Recreation sites: Typically development scale 0; no improvements. Sanitation: No facilities; leave no trace. Water supply: Undeveloped, natural. Signing: Minimal; constructed of rustic, natural materials. Interpretation: Through self-discovery. Water crossing: Minimal; pedestrian only; made of natural materials.	Access: Nonmotorized routes; trail classes 1-2 typical. Foot, horse, mountain bike use; no motorized travel. Closed and temporary roads may be present. Recreation sites: Typically development scale 0-1, sometimes development scale 2. Minor investments to protect natural and cultural resources. Sanitation: No facilities; leave no trace. Water supply: Undeveloped; natural. Signing: Rustic, natural materials. Interpretation: Typically self-discovery. Water crossing: Rustic structures for foot, horse, and bicycle traffic.	Access: Motorized routes; maintenance level 2 roads and trail class 2 typical; off-highway vehicles allowed on designated routes and areas. Recreation sites: Typically development scales 0-2; purpose of infrastructure is to protect natural and cultural resources. Sanitation: Limited facilities; outhouses may be in areas of concentrated use. Water supply: Undeveloped; natural. Signing: Rustic, made of natural materials. Interpretation: Self-discovery; located offsite or at trailheads. Water crossing: Rustic structures or bridges.	Access: Typically maintenance level 3-5 roads; maintenance level 2 roads may also be present. Typically trail classes 3-4. Highway vehicles, off-highway vehicles, and other motorized travel on designated routes. Recreation sites: Typically development scales 0-3, sometimes development scale 4. Sanitation: Typically vault toilets. Water supply: Often developed. Signing: Variety of materials; blend with natural setting. Interpretation: Simple roadside signs; some interpretive displays. Water crossings: Bridges, natural materials.	Access: Typically maintenance level 3-5; roads and trail classes 3-5; mass transit sometimes available. Recreation sites: Typically development scale 4-5. Sanitation: Flush toilets. Water supply: Developed; showers common. Signing: Natural and synthetic materials. Interpretation: Roadside exhibits, interpretive programs, etc. Water crossings: Bridges that accommodate highway vehicles, recreation vehicles, and heavy equipment.	Access: Typically maintenance level 4-5; roads and trail classes 4-5; mass transit often available. Recreation sites: Typically development scale 5, sometimes development scale 4. Sanitation: Flush toilets. Water supply: Hot water, showers. Signing: Extensive. Interpretation: Exhibits in staffed visitor centers; highly developed and formalized exhibits. Water crossings: Bridges for highway vehicles, buses, recreation vehicles, and heavy equipment.

	PRIMITIVE	SEMI-PRIMITIVE NONMOTORIZED	SEMI-PRIMITIVE MOTORIZED	ROADED NATURAL	RURAL	URBAN
Vegetation	Natural, no treatments except for fire use.	Treatments enhance forest health and mimic natural vegetation patterns.	Treatments improve forest health and mimic natural vegetation patterns.	Vegetation treatments are evident but in harmony with the scenic character.	Treatments often visible, blend with landscape.	Often planted, manicured, and maintained.
Scenic Integrity	Very High	Typically High	Typically High to Moderate	Ranges from High to Low	Ranges from High to Low	Ranges from High to Low
Managerial	Little to no onsite regimentation; few encounters with Forest Service personnel. Visitor use management is largely offsite and accomplished through regulation, permitting, and other visitor use management techniques.	Minimum or subtle signing, regulations, or other onsite regimentation. Low encounters with Forest Service personnel, partners, or volunteers working on behalf of the agency.	Minimum, subtle onsite controls; designated motorized routes and areas.	Signs and regulations present but typically subordinate to the setting. Moderate likelihood of encountering Forest Service personnel, volunteers, or partners working on behalf of the agency.	Obvious signing (regulation and information); education and law enforcement staff. Motorized and mechanized travel common and often separated.	Intensive onsite management, obvious signs, and staffing; education and law enforcement available. Motorized and mechanized travel on designated routes.
Social	Very high probability of solitude; closeness to nature; self-reliance. High challenge and risk; little evidence of people. Typically 6 or fewer encounters with other parties on trails, and fewer than 3 parties visible from camping sites.	High probability of solitude; closeness to nature; self-reliance. High to moderate challenge and risk. Usually 6 to 15 encounters with other parties on trails; 6 or fewer parties visible from camping sites.	Moderate to high probability of solitude. High to moderate degree of risk and challenge. Usually 6 to 15 encounters with other parties on trails; 6 or fewer parties visible from camping sites.	Moderate evidence of human sights and sounds; moderate concentration of users at developed recreation sites; little challenge or risk is expected in these outdoor settings due to nearby amenities and management controls; opportunities to socialize.	High interaction among users is common. Other people in constant view. Little challenge or risk associated with being outdoors.	High degree of interaction with people. People are in constant view. Challenge and risk are unimportant, except for competitive sports.

Table 7. Winter Season Physical, Managerial, and Social Characteristics for Each ROS Setting.

	PRIMITIVE	SEMI-PRIMITIVE NONMOTORIZED	SEMI-PRIMITIVE MOTORIZED	ROADED NATURAL	RURAL	URBAN
Physical Theme	Predominately unmodified; naturally evolving, vast, and remote. Typically 3 miles or more from designated motorized routes and areas and large in scale (5,000 or more acres).	Predominately natural/ natural appearing; rustic improvements to protect resources. Typically ½ mile or more from designated motorized routes and areas and moderate to large in scale (2,500 or more acres).	Predominately natural appearing; motorized use visible and audible Typically contain designated high-clearance vehicle roads and motorized trails or areas (2,500 or more acres).	Natural appearing with nodes and corridors of development, such as campgrounds, trailheads, boat launches, and rustic, small-scale resorts. Typically within ½ mile of designated improved roads.	Altered landscapes with cultural emphasis, such as rural, pastoral, or agricultural. Administrative sites, historic complexes, and moderately developed resorts are typical. Not remote; often near other (non-Forest Service) rural settings and communities.	Highly developed site modifications and facilities. Regionally significant destination resorts, as well as large, highly developed visitor centers, are examples of urban nodes within National Forest System lands. Often close to towns and cities.
Infrastructure (access and facilities)	Access: No roads or motorized trails. User-created ski and snowshoe routes. No motorized over-snow vehicles are present. No mechanized travel within designated wilderness is present. No other infrastructure or facilities typically present.	Access: Ungroomed nonmotorized trails with some trail markers, user-created routes, and areas for ski or snowshoe use. No over-snow vehicles are present. No other infrastructure or facilities typically available.	Access: Ungroomed but marked over-snow vehicle routes and areas. Ungroomed ski trails. Over-snow vehicle use on designated routes and areas. Few, if any, facilities or services available.	Access: Some plowed roads and groomed over-snow vehicle routes. Groomed ski trails may also exist. Warming huts, cabins, and rustic facilities may be present.	Access: Groomed over-snow vehicle routes, groomed cross country skiing, skate skiing, and downhill ski and snowboard trails. Over-snow vehicle use on designated routes and areas. Full-service facilities and resorts often present.	Access: Groomed over-snow vehicle routes, groomed cross country skiing, skate skiing, and downhill ski and snowboard trails. Full-service facilities, visitor centers, resorts, and lodging often present.
Vegetation	Natural, no treatments except for fire use.	Treatments enhance forest health and mimic natural vegetation patterns.	Treatments improve forest health and mimic natural vegetation patterns.	Vegetation treatments are evident but in harmony with the scenic character.	Treatments often visible, blend with landscape.	Often planted, manicured, and maintained.
Scenic Integrity	Very High	Typically High	Typically High to Moderate	Ranges from High to Low.	Ranges from High to Low	Ranges from High to Low

	PRIMITIVE	SEMI-PRIMITIVE NONMOTORIZED	SEMI-PRIMITIVE MOTORIZED	ROADED NATURAL	RURAL	URBAN
Managerial	Little to no onsite regimentation; few encounters with Forest Service personnel. Visitor use management is largely offsite and accomplished through regulation, permitting, and other visitor use management techniques.	Minimum or subtle signing, regulations, or other onsite regimentation. Low encounters with Forest Service personnel, partners, or volunteers working on behalf of the agency.	Minimum, subtle onsite controls; designated motorized routes and areas.	Signs and regulations present but typically subordinate to the setting. Moderate likelihood of encountering Forest Service personnel, volunteers, or partners working on behalf of the agency.	Obvious signing (regulation and information); education and law enforcement staff. Motorized and mechanized travel common and often separated.	Intensive onsite management, obvious signs, and staffing; education and law enforcement available. Motorized and mechanized travel on designated routes.
Social	Very high probability of solitude; closeness to nature; self-reliance. High challenge and risk; little evidence of people. Typically 6 or fewer encounters with other parties on trails, and fewer than 3 parties visible from camping sites.	High probability of solitude; closeness to nature; self-reliance. High to moderate challenge and risk. Usually 6 to 15 encounters with other parties on trails; 6 or fewer parties visible from camping sites.	Moderate to high probability of solitude. High to moderate degree of risk or challenge. Usually 6 to 15 encounters with other parties on trails; 6 or fewer parties visible from camping sites.	Moderate evidence of human sights and sounds; moderate concentration of users at developed recreation sites; little challenge or risk is expected in these outdoor settings due to nearby amenities and management controls; opportunities to socialize.	High interaction among users is common. Other people in constant view. Little challenge or risk associated with being outdoors.	High degree of interaction with people. People are in constant view. Challenge and risk are unimportant, except for competitive sports.

Following are examples using the matrix format with the ROS setting characteristics highlighted. The existing ROS class has a green outline, and desired ROS class cells are shaded green. The arrows show the direction of change between setting characteristics to maintain the overall desired ROS. See the "Managing ROS Setting Characteristics" section for descriptions of these examples.

Table 8. Full Example: ROS Matrix for Dispersed Camping Areas Maintaining Lower Level of Development.

	PRIMITIVE	SEMI-PRIMITIVE NONMOTORIZED	SEMI-PRIMITIVE MOTORIZED	ROADED NATURAL	RURAL	URBAN
Physical Theme	Predominately unmodified; naturally evolving, vast, and remote. Typically 3 miles or more from designated motorized routes and/ areas and large in scale (5,000 or more acres).	Predominately natural/ natural appearing; rustic improvements to protect resources. Typically ½ mile or more from designated motorized routes and areas and moderate to large in scale (2,500 or more acres).	**Predominately natural appearing; motorized use visible and audible.** **Typically contain designated high-clearance vehicle roads and motorized trails or areas (2,500 or more acres).**	Natural appearing with nodes and corridors of development, such as campgrounds, trailheads, boat launches, and rustic, small-scale resorts. Typically within ½ mile of designated improved roads.	Altered landscapes with cultural emphasis, such as rural, pastoral, or agricultural. Administrative sites, historic complexes, and moderately developed resorts are typical.	Highly developed site modifications and facilities. Regionally significant destination resorts; highly developed visitor centers are examples of urban nodes within National Forest System lands.
Infrastructure (access and facilities)	Access: Nonmotorized trails; typically trail class 1; travel on foot and horse; no motorized travel; no mechanized travel within designated wilderness. Recreation sites: Typically development scale 0; no improvements. Sanitation: No facilities; leave no trace. Water supply: Undeveloped, natural. Signing: Minimal; constructed of rustic, natural materials. Interpretation: Through self-discovery. Water crossing: Minimal; pedestrian only; made of natural materials.	Access: Nonmotorized routes; trail classes 1-2 typical. Foot, horse, mountain bike use; no motorized travel. Closed and temporary roads may be present. Recreation sites: Typically development scale 0-1, sometimes development scale 2. Minor investments to protect natural and cultural resources. Sanitation: No facilities; leave no trace. Water supply: Undeveloped, natural. Signing: Rustic, natural materials. Interpretation: Typically self-discovery. Water crossing: Rustic structures for foot, horse, and bicycle traffic.	**Access: Motorized routes; maintenance level 2 roads and trail class 2 typical; off-highway vehicles allowed on designated routes/areas.** **Recreation sites: Typically development scales 0-2; purpose of infrastructure is to protect natural and cultural resources.** **Sanitation: Limited facilities; outhouses may be in areas of concentrated use.** **Water supply: Undeveloped, natural.** **Signing: Rustic, made of natural materials.** **Interpretation: Self-discover; located offsite or at trailheads.** **Water crossing: Rustic structures or bridges.**	Access: Typically maintenance level 3-5 roads; maintenance level 2 roads may also be present. Typically trail classes 3-4; highway vehicles, off-highway vehicles, and other motorized travel on designated routes. Recreation sites: Typically development scales 0-3, sometimes development scale 4. Sanitation: Typically vault toilets. Water supply: Often developed. Signing: Variety of materials; blend with natural setting. Interpretation: Simple roadside signs; some interpretive displays. Water crossings: Bridges, natural materials.	Access: Typically maintenance level 3-5; roads and trail classes 3-5; mass transit sometimes available. Recreation sites: Typically development scale 4-5. Sanitation: Flush toilets. Water supply: Developed; showers common. Signing: Natural and synthetic materials. Interpretation: Roadside exhibits, interpretive programs, etc. Water crossings: Bridges that accommodate highway vehicles, recreation vehicles, and heavy equipment.	Access: Typically maintenance level 4-5; roads and trail classes 4-5; mass transit often available. Recreation sites: Typically development scale 5, sometimes development scale 4. Sanitation: Flush toilets. Water supply: Hot water, showers. Signing: Extensive. Interpretation: Exhibits in staffed visitor centers; highly developed and formalized exhibits. Water crossings: Bridges for highway vehicles, buses, recreation vehicles, and heavy equipment.

Legend: Existing ROS | **Desired ROS** | Direction of change ❮ ❯

	PRIMITIVE	SEMI-PRIMITIVE NONMOTORIZED	SEMI-PRIMITIVE MOTORIZED	ROADED NATURAL	RURAL	URBAN
Vegetation	Natural; no treatments except for fire use.	Treatments enhance forest health and mimic natural vegetation patterns.	**Treatments improve forest health and mimic natural vegetation patterns.**	Vegetation treatments are evident but in harmony with the scenic character.	Treatments often visible, blend with landscape.	Often planted, manicured, and maintained.
Scenic Integrity	Very High	Typically High	**Typically High to Moderate**	Ranges from High to Low	Ranges from High to Low	Ranges from High to Low
Managerial	Little to no onsite regimentation; few encounters with Forest Service personnel. Visitor use management is largely offsite and accomplished through regulation, permitting, and other visitor use management techniques.	Minimum or subtle signing, regulations, or other onsite regimentation. Low encounters with Forest Service personnel, partners, or volunteers working on behalf of the agency.	Minimum, subtle onsite controls; designated motorized routes and areas.	**Signs and regulations present but typically subordinate to the setting. Moderate likelihood of encountering Forest Service personnel, volunteers, or partners working on behalf of the agency.**	**Obvious signing (regulation and information); education and law enforcement staff. Motorized and mechanized travel common and often separated.**	Intensive onsite management, obvious signs, and staffing; education and law enforcement available. Motorized and mechanized travel on designated routes.
Social	Very high probability of solitude; closeness to nature; self-reliance, High challenge and risk; little evidence of people. Typically 6 or fewer encounters with other parties on trails, and fewer than 3 parties visible from camping sites.	High probability of solitude; closeness to nature; self-reliance. High to moderate challenge and risk. Usually 6 to 15 encounters with other parties on trails; 6 or fewer parties visible from camping sites.	**Moderate to high probability of solitude. High to moderate degree of risk and challenge. Usually 6 to 15 encounters with other parties on trails; 6 or fewer parties visible from camping sites.**	Moderate evidence of human sights and sounds; moderate concentration of users at developed recreation sites; little challenge or risk is expected in these outdoor settings due to nearby amenities and management controls; opportunities to socialize.	High interaction among users is common. Other people in constant view. Little challenge or risk associated with being outdoors.	High degree of interaction with people. People are in constant view. Challenge and risk are unimportant, except for competitive sports.

Table 9. Full Example: ROS Matrix for Dispersed Camping Area Shifting Toward Higher Development.

	PRIMITIVE	SEMI-PRIMITIVE NONMOTORIZED	SEMI-PRIMITIVE MOTORIZED	ROADED NATURAL	RURAL	URBAN
Physical Theme	Predominately unmodified; naturally evolving, vast, and remote. Typically 3 miles or more from designated motorized routes and areas and large in scale (5,000 or more acres).	Predominately natural/ natural appearing; rustic improvements to protect resources. Typically ½ mile or more from designated motorized routes and areas and moderate to large in scale (2,500 or more acres).	Predominately natural appearing; motorized use visible and audible. Typically contain designated high-clearance vehicle roads and motorized trails or areas (2,500 or more acres).	Natural appearing with nodes and corridors of development, such as campgrounds, trailheads, boat launches, and rustic, small-scale resorts. Typically within ½ mile of designated improved roads.	Altered landscapes with cultural emphasis, such as rural, pastoral, or agricultural. Administrative sites, historic complexes, and moderately developed resorts are typical.	Highly developed site modifications and facilities. Regionally significant destination resorts, as well as large, highly developed visitor centers, are examples of urban nodes within National Forest System lands.
Infrastructure (access and facilities)	Access: Nonmotorized trails; typically trail class 1; travel on foot and horse; no motorized travel; no mechanized travel within designated wilderness. Recreation sites: Typically development scale 0; no improvements. Sanitation: No facilities; leave no trace. Water supply: Undeveloped; natural. Signing: Minimal; constructed of rustic, natural materials. Interpretation: Through self-discovery. Water crossing: Minimal; pedestrian only; made of natural materials.	Access: Nonmotorized routes; trail classes 1-2 typical. Foot, horse, mountain bike use; no motorized travel. Closed and temporary roads may be present. Recreation sites: Typically development scale 0-1, sometimes development scale 2. Minor investments to protect natural and cultural resources. Sanitation: No facilities; leave no trace. Water supply: Undeveloped; natural. Signing. Rustic, natural materials. Interpretation: Typically self-discovery. Water crossing: Rustic structures for foot, horse, and bicycle traffic.	Access: Motorized routes; maintenance level 2 roads and trail class 2 typical; off-highway vehicles allowed on designated routes and areas. Recreation sites: Typically development scales 0-2; purpose of infrastructure is to protect natural and cultural resources. Sanitation: Limited facilities; outhouses may be in areas of concentrated use. Water supply: Undeveloped; natural. Signing: Rustic, made of natural materials. Interpretation: Self-discovery; located offsite or at trailheads. Water crossing: Rustic structures or bridges.	Access: Typically maintenance level 3-5 roads; maintenance level 2 roads may also be present. Typically trail classes 3-4; highway vehicles, off-highway vehicles, and other motorized travel on designated routes. Recreation sites: Typically development scales 0-3, sometimes development scale 4. Sanitation: Typically vault toilets. Water supply: Often developed. Signing: Variety of materials; blend with natural setting. Interpretation: Simple roadside signs; some interpretive displays. Water crossings: Bridges, natural materials.	Access: Typically maintenance level 3-5; roads and trail classes 3-5; mass transit sometimes available. Recreation sites: Typically development scale 4-5. Sanitation: Flush toilets. Water supply: Developed; showers common. Signing: Natural and synthetic materials. Interpretation: Roadside exhibits, interpretive programs, etc. Water crossings: Bridges that accommodate highway vehicles, recreation vehicles, and heavy equipment.	Access: Typically maintenance level 4-5; roads and trail classes 4-5; mass transit often available. Recreation sites: Typically development scale 5, sometimes development scale 4. Sanitation: Flush toilets. Water supply: Hot water, showers. Signing: Extensive. Interpretation: Exhibits in staffed visitor centers; highly developed and formalized exhibits. Water crossings: Bridges for highway vehicles, buses, recreation vehicles, and heavy equipment.

	PRIMITIVE	SEMI-PRIMITIVE NONMOTORIZED	SEMI-PRIMITIVE MOTORIZED	ROADED NATURAL	RURAL	URBAN
Vegetation	Natural; no treatments except for fire use.	Treatments enhance forest health and mimic natural vegetation patterns.	Treatments improve forest health and mimic natural vegetation patterns.	Vegetation treatments are evident but in harmony with the scenic character.	Treatments often visible, blend with landscape.	Often planted, manicured, and maintained.
Scenic Integrity	Very High	Typically High	Typically High to Moderate	Ranges from High to Low	Ranges from High to Low	Ranges from High to Low
Managerial	Little to no onsite regimentation; few encounters with Forest Service personnel. Visitor use management is largely offsite and accomplished through regulation, permitting, and other visitor use management techniques.	Minimum or subtle signing, regulations, or other onsite regimentation. Low encounters with Forest Service personnel, partners, or volunteers working on behalf of the agency.	Minimum; subtle onsite controls; designated motorized routes and areas.	Signs and regulations present but typically subordinate to the setting. Moderate likelihood encountering Forest Service personnel, volunteers, or partners working on behalf of the agency.	Obvious signing (regulation and information); education and law enforcement staff. Motorized and mechanized travel common and often separated.	Intensive onsite management, obvious signs, and staffing; education and law enforcement available. Motorized and mechanized travel on designated routes.
Social	Very high probability of solitude; closeness to nature; self-reliance; high challenge and risk; little evidence of people. Typically 6 or fewer encounters with other parties on trails, and fewer than 3 parties visible from camping sites.	High probability of solitude; closeness to nature; self-reliance. High to moderate challenge and risk. Usually 6 to 15 encounters with other parties on trails; 6 or fewer parties visible from camping sites.	Moderate to high probability of solitude. High to moderate degree of risk and challenge. Usually 6 to 15 encounters with other parties on trails; 6 or fewer parties visible from camping sites.	Moderate evidence of human sights and sounds; moderate concentration of users at developed recreation sites; little challenge or risk is expected in these outdoor settings due to nearby amenities and management controls; opportunities to socialize.	High interaction among users is common. Other people in constant view. Little challenge or risk associated with being outdoors.	High degree of interaction with people. People are in constant view. Challenge and risk are unimportant, except for competitive sports.

Table 10. Full Example: ROS Matrix for Wilderness Area.

	PRIMITIVE	SEMI-PRIMITIVE NONMOTORIZED	SEMI-PRIMITIVE MOTORIZED	ROADED NATURAL	RURAL	URBAN
Physical Theme	Predominately unmodified; naturally evolving, vast, and remote. Typically 3 miles or more from designated motorized routes and areas and large in scale (5,000 or more acres).	Predominately natural/ natural appearing; rustic improvements to protect resources. Typically ½ mile or more from designated motorized routes and areas and moderate to large in scale (2,500 or more acres).	Predominately natural appearing; motorized use visible and audible. Typically contain designated high-clearance vehicle roads and motorized trails or areas (2,500 or more acres).	Natural appearing with nodes and corridors of development, such as campgrounds, trailheads, boat launches, and rustic, small-scale resorts. Typically within ½ mile of designated improved roads.	Altered landscapes with cultural emphasis, such as rural, pastoral, or agricultural. Administrative sites, historic complexes, and moderately developed resorts are typical.	Highly developed site modifications and facilities. Regionally significant destination resorts, as well as large, highly developed visitor centers, are examples of urban nodes within National Forest System lands.
Infrastructure (access and facilities)	Access: Nonmotorized trails; typically trail class 1; travel on foot and horse; no motorized travel; no mechanized travel within designated wilderness. Recreation sites: Typically development scale 0; no improvements. Sanitation: No facilities; leave no trace; Water supply: Undeveloped; natural. Signing: Minimal; constructed of rustic, natural materials. Interpretation: Through self-discovery. Water crossing: Minimal; pedestrian only; made of natural materials.	Access: Nonmotorized routes; trail classes 1-2 typical. Foot, horse, mountain bike use; no motorized travel. Closed and temporary roads may be present. Recreation sites: Typically development scale 0- 1, sometimes development scale 2. Minor investments to protect natural and cultural resources. Sanitation: No facilities; leave no trace. Water supply: Undeveloped; natural. Signing: Rustic, natural materials. Interpretation: Typically self-discovery. Water crossing: Rustic structures for foot, horse, and bicycle traffic.	Access: Motorized routes; maintenance level 2; roads and trail class 2 typical; off-highway vehicles allowed on designated routes and areas. Recreation sites: Typically development scales 0-2; purpose of infrastructure is to protect natural and cultural resources. Sanitation: Limited facilities; outhouses may be in areas of concentrated use. Water supply: Undeveloped; natural. Signing: Rustic; made of natural materials. Interpretation: Self-discovery; located offsite or at trailheads. Water crossing: Rustic structures or bridges.	Access: Typically maintenance level 3-5 roads; maintenance level 2 roads may also be present. Typically trail classes 3-4; highway vehicles, off-highway vehicles, and other motorized travel on designated routes. Recreation sites: Typically development scales 0-3, sometimes development scale 4. Sanitation: Typically vault toilets. Water supply: Often developed. Signing: Variety of materials; blend with natural setting. Interpretation: Simple roadside signs; some interpretive displays. Water crossings: Bridges; natural materials.	Access: Typically maintenance level 3- 5; roads and trail classes 3-5; mass transit sometimes available. Recreation sites: Typically development scale 4-5. Sanitation: Flush toilets. Water supply: Developed; showers common. Signing: Natural and synthetic materials. Interpretation: Roadside exhibits, interpretive programs, etc. Water crossings: Bridges that accommodate highway vehicles, recreation vehicles, and heavy equipment.	Access: Typically maintenance level 4-5; roads and trail classes 4-5; mass transit often available. Recreation sites: Typically development scale 5, sometimes development scale 4. Sanitation: Flush toilets. Water supply: Hot water, showers. Signing: Extensive. Interpretation: Exhibits in staffed visitor centers; highly developed and formalized exhibits. Water crossings: Bridges for highway vehicles, buses, recreation vehicles, and heavy equipment.

	PRIMITIVE	SEMI-PRIMITIVE NONMOTORIZED	SEMI-PRIMITIVE MOTORIZED	ROADED NATURAL	RURAL	URBAN
Vegetation	Natural; no treatments except for fire use.	Treatments enhance forest health and mimic natural vegetation patterns.	Treatments improve forest health and mimic natural vegetation patterns.	Vegetation treatments are evident but in harmony with the scenic character.	Treatments often visible; blend with landscape.	Often planted, manicured, and maintained.
Scenic Integrity	Very High	Typically High	Typically High to Moderate	Ranges from High to Low	Ranges from High to Low	Ranges from High to Low
Managerial	Little to no onsite regimentation; few encounters with Forest Service personnel. Visitor use management is largely offsite and accomplished through regulation, permitting, and other visitor use management techniques.	Minimum or subtle signing, regulations, or other onsite regimentation. Low encounters with Forest Service personnel, partners, or volunteers working on behalf of the agency.	Minimum; subtle onsite controls; designated motorized routes/areas.	Signs and regulations present but typically subordinate to the setting. Moderate likelihood of encountering Forest Service personnel, volunteers, or partners working on behalf of the agency.	Obvious signing (regulation and information); education and law enforcement staff. Motorized and mechanized travel common and often separated.	Intensive onsite management, obvious signs, and staffing; education and law enforcement available. Motorized and mechanized travel on designated routes.
Social	Very high probability of solitude; closeness to nature; self-reliance; high challenge and risk; little evidence of people. Typically 6 or fewer encounters with other parties on trails, and fewer than 3 parties visible from camping sites.	High probability of solitude; closeness to nature; self-reliance. High to moderate challenge and risk. Usually 6 to 15 encounters with other parties on trails; 6 or fewer parties visible from camping sites.	Moderate to high probability of solitude. High to moderate degree of risk and challenge. Usually 6 to 15 encounters with other parties on trails; 6 or fewer parties visible from camping sites.	Moderate evidence of human sights and sounds; moderate concentration of users at developed recreation sites; little challenge or risk is expected in these outdoor settings due to nearby amenities and management controls; opportunities to socialize.	High interaction among users is common. Other people in constant view. Little challenge or risk associated with being outdoors.	High degree of interaction with people. People are in constant view. Challenge and risk are unimportant, except for competitive sports.

Appendix C. Recreation Site Development Scale

The following table displays the classification of recreation sites that distinguishes the degree of site amenities and alteration present within a spectrum based on resource protection and user comfort.

Table 11. Recreation Site Development Scale (FSH 2309.13, secs. 10.5 and 10.8).

DEVELOPMENT SCALE	TYPICAL RECREATION OPPORTUNITY SPECTRUM (ROS) CONSISTENCY	TYPICAL SITE AND FACILITY CHARACTERISTICS	TYPICAL MANAGEMENT EMPHASIS
0	May occur in any ROS setting.	• User-created dispersed use. • No Forest Service investment or amenities.	May include monitoring of resource conditions.
1	May occur in any ROS setting.	• Primarily user-created dispersed use area. • Informal vehicle circulation and parking. • Minimal Forest Service investment; may include signage.	Resource protection.
2	May occur in any ROS setting.	• Defined vehicle circulation and parking with minimal Forest Service investment to accommodate user-created dispersed-use area. • Limited amenities may include signage, tables, fire rings. In rare instances, may include vault toilet.	Resource protection.
3	Roaded Natural	• Designed developed site with significant Forest Service investment and delineation. • Amenities may include signage, fire rings, tables, toilet, waste collection, potable water. • Roads are surfaced; maintenance level 3 or 4.	Visitor comfort and resource protection.
4	Roaded Natural, Rural, Urban	• Designed developed site with significant Forest Service investment and delineation. • Amenities include signage, interpretive materials, fire rings, grills, tables, waste collection, potable water, flush toilets. • Roads, parking, and paths are surfaced and may be paved; maintenance level 4 or 5.	Visitor comfort and resource protection.
5	Rural, Urban	• Designed developed site with significant Forest Service investment and delineation. • Amenities typically include signage, interpretive displays, fire rings, grills, tables, waste collection, potable water, flush toilets. May include utility hook-ups, showers, and laundry facilities. • Roads, parking, and pathways are clearly delineated and are often paved; maintenance level 4 or 5.	Visitor comfort and resource protection.

Note: Dispersed site scales 0–2 can occur across all ROS settings; however, developed site scales 3–5 are limited to more developed ROS settings.

Appendix D. Recreation Opportunity Components.

ROS is used to describe and map desired recreation settings that are a spatial depiction of desired conditions. Desired ROS functions as a framework for: (1) meeting the persisting and evolving needs of diverse user groups and (2) ensuring that recreation is appropriately prioritized and balanced with other forest resources over time.

In general, primitive settings occur primarily in designated wilderness, recommended wilderness areas, or other areas where the desire is to preserve a remote and more challenging experience. Semi-primitive settings reflect a desire for these areas to remain less developed and potentially allow for less encounters with others than the more developed roaded natural and rural settings. Semi-primitive nonmotorized settings reflect a desire for these areas to not feature future motorized routes or areas, while semi-primitive motorized settings reflect a desire for future motorized route construction or decisions be considered.