

Appalachian Trail Overnight Site Planning Guidance

September 2023 by ATC Stewardship Council

[Note: Page references below are to the document by Jeffrey L. Marion entitled [Camping Impact Management on the Appalachian National Scenic Trail](#).]

This document updates and supersedes Appalachian Trail Conservancy's (ATC) 2007 *Guidance for Locating and Designing A.T. Shelters and Formal Campsites*.

Planning for New or Renovated A.T. Overnight Use Areas

Overnight sites and their associated facilities are a significant part of the Appalachian Trail's (A.T.) infrastructure. Trail managers must consider the potential long-term financial, regulatory, visitor use, biophysical resource, historic and experiential consequences and/or impacts of adding new sites or investing resources to maintain existing ones.

The Changing Role of the Shelter

Managers should closely evaluate the current density and location of shelters in light of the changing role they now play in the visitor experience. Until the 1960's and 70's, backpacking gear was relatively heavy and bulky and not very waterproof. Lightweight, waterproof tents were not available. A successful hike was based on reaching a trail shelter nearly every night. As a result, the A.T. was conceived in the 1920s and 1930s with a system of shelters spaced about 10 to 15 miles apart. Later, in some areas, shelters were considered a management tool to concentrate use and biophysical impacts at specific locations (although some of them were not sustainably sited).

In the past two decades, backpacking gear has become significantly lighter and more waterproof, and a wide range of tent materials, designs and capacities are available. Advances in telecommunications, social media, off-Trail resupply, and trail navigation resources have made the Trail more accessible, and overnight visitation has significantly increased. As a result, with exceptions, shelters are not as essential for hiker safety and itinerary planning as they once were. Shelters do provide opportunities for social connection and concentrate biophysical impacts in specific locations, being convenient places to stop for water, meals, and rest. However, these objectives can often be met just as well with improved campsites that do not include a shelter.

In some areas A.T. land managers restrict camping to officially designated sites; however, not all of them have, or need to have, a shelter.

Some shelters, particularly those within easy access to public roads, are increasingly subject to inappropriate use by visitors, placing increasing ongoing maintenance and management burdens on volunteers and land managers. There is at least anecdotal evidence that improved campsites, which do not include a shelter, are less susceptible to inappropriate use.

Shelters are a tradition on the A.T., but the use of the Trail should not depend on them. No attempt is made to provide such amenities for every potential user, so each person must be prepared to do without them.

Comprehensive Plan for the Protection, Management and Use of the Appalachian National Scenic Trail (1981)

As managers plan for significant repairs or improvements to existing overnight sites, or contemplate new facilities, they should evaluate the necessity and desirability of continuing to retain or include individual shelters as part of the facilities available in some areas. *This is an effort to make sure the overnight facility is the best solution for the desired A.T. Experience-- including use level and resource protections.* New or renovated facilities should meet the standards outlined in this document. Managers should also consider alternatives to shelters such

as improved tenting areas and/or tent platforms to meet the need for overnight camping opportunities for A.T. campers, without the potential disadvantages that may occur with shelters in some areas.

Key Planning Considerations

When planning renovation, replacement, and/or new construction work activities on A.T. overnight use areas (OUA), Trail Clubs must consult with ATC and their land management partners to ensure regulatory requirements including NEPA (National Environmental Policy Act) and Section 106 (National Historic Preservation Act) are adhered to. Such consultations must occur early in the planning process to ensure there is support for the proposed project and that resource protection and regulatory requirements are incorporated into the project.

All structures on the Trail are part of its historic fabric. Overnight use areas have been identified as one of five contributing resource types to the A.T. National Register District, and therefore warrant particular consideration. As such, modifications to a structure or site will include a review of potential impacts to biophysical, experiential *and* historic resources. Facilities must be maintained in a manner that does not adversely affect the attributes of the District. While biophysical standards are well established, as of this writing (2023) guidance and best practices for historic and cultural review, protection and/or preservation are under development. Consult with land management team members early in the planning process for the most recent information.

Supporting Desired Experiential Opportunities

In addition to regulatory requirements noted above, stated desired conditions for Trail visitor experiential zones provide important guidance regarding the design, capacity and location of the project and must also be referenced throughout the planning process. While not yet formally included in all land manager regulations, adherence to this more comprehensive and locally developed guidance can promote more consistent decision-making and support to maintain or achieve the desired A.T. visitor experience.

An Overnight Site Planning Tool

When initiating planning to renovate or rebuild an existing OUA, the facility's components should be evaluated to determine if they support desired experience conditions, the structures are well sited, minimize impacts to natural resources, contribute to the historical integrity of the Trail and do not conflict with stated A.T. values. The [Overnight Site Facility Assessment Tool](#) and [background instructions](#) are tools to summarize a site and identify areas that may not be meeting the desired conditions and purpose of the facility.

All management partners should also assess their own resources to determine if they have the capacity available to continue to successfully perform their role in maintaining the site or structure, including routine costs such as roof repair/replacement, painting, litter/graffiti removal and privy management.

Experiential Zones

The ATC's [1995 Policy on Managing the Trail for a Primitive Experience](#) defines and directs managers to provide the desired A.T. visitor experience. While this policy is helpful, it addresses the entire A.T. in a general way.

In 2015, ATC, trail clubs and agency partners began working within the Interagency Visitor Use Management Council's (IVUMC) framework for managing visitor use. As part of that framework, beginning in 2021, each trail club and its land managing partners applied a more nuanced experiential zoning process to describe desired biophysical, social and managerial conditions for A.T. segments and most overnight sites. These desired condition zones are organized in the [A.T.](#)

[Experience Zone Matrix](#) and range from Zone 1 (Wilderness) to Zone 6 (Urban). A relative few A.T. overnight sites are in Zone 1, most A.T. overnight sites are in Zones 2 (Semi-Primitive), 3 (Natural) and 4 (Semi-Natural)--with the preponderance of sites being in zones 2 and 3. For more info about the IVUMC Framework, see this [summary](#) and contact the ATC Director of Visitor Use Management.

Principles for Locating and Designing Overnight Site Facilities

- Review current and desired condition statements expressed in the [A.T. Experience Zone Matrix](#) for the overnight site area and surrounding trail segment(s).
- Review the best available data to determine use patterns and visitor impacts to overnight sites and surrounding areas (see ATC Indicator Selection Guide, pending, late 2023).
- Discuss findings with all management partners to design and locate site(s) that balance visitor use with protecting environmental, cultural and experiential resources.
- Consider the visitor use at the site and the management objectives for the zone when determining the capacity of new, expanded, or relocated facilities. Below are some basic considerations:

Size, Density and Type

- If renovating or building a new shelter, limit capacity to 15, except in the most heavily used areas. Construct additional tenting sites co-located with the shelter, or in nearby locations to address high visitation occurrences, rather than enlarging a single site or shelter.
- The density of shelters or formal campsites within Trail segment(s) should be in keeping with the desired experience zone. Study use patterns carefully to avoid visitor use that might overwhelm other nearby existing sites.
- Physical capacity estimates for shelters can be calculated at one person per 21sq ft. (7ft x 3ft) which will comfortably accommodate around 6 visitors in a single level 12ft x 20ft shelter. Bunks or lofts may be included to increase available capacity in a given footprint. The number of tent sites needed for a formal campsite of equivalent capacity is typically 1-2 times the capacity of the shelter.
- When deemed appropriate for the defined experiential zone and use patterns from the above data, construct well-designed formal camping areas rather than new shelters.
- When proposing significant rebuilding or replacement of existing shelters or campsites, use the [Overnight Site Facility Assessment Tool](#) as part of the planning process and consult with land managers regarding NEPA and Section 106 requirements as noted above.

For proposed new shelter construction, or significant renovation of an existing shelter, include a justification explaining why a shelter is preferable to a campsite and how the proposal supports the desired conditions within the existing experiential zone.

Appropriate Location

Overnight Use Areas should be:

- *Near permanent sources of water*—A permanent source of water that can be rendered safe for drinking by typical backpacking water treatment devices or procedures is a nearly essential requirement. The highest mid-slope location within a drainage that retains flowing water during drought periods is best. Springs are preferred over small streams, but they must have a dependable flow history over several years. Land within the drainage above the site should be in public ownership and have no human habitations or grazing. Locate shelters, campsites and other structures at least 200 feet from water sources.
- *Remote from motorized access*—To promote a remote backcountry experience, where possible, locate overnight sites at least two miles from motorized access points such as roads, formal or informal ORV trails and private land.
- *Conflicts*--Sites should not be located where conflicts can occur with neighbors and motorized users or where opportunities for inappropriate use are likely to be

common.

- *Out-of-sight from the treadway*—To preserve a more primitive trail experience, locate facilities just beyond sight of the A.T. footpath whenever possible. Trailside locations reduce the potential for solitude for both hikers and campers
- *In mid-slope positions*—Avoid ravines and depressions that can be seasonally wet and subject to cooler temperatures and lack of sun exposure. Similarly, ridge tops can be windy and prone to lightning strikes. Flat valley bottom and ridge top locations often have poor drainage and allow easy proliferation and expansion of tentsites and trampled areas.
- Choose locations that allow placement of tent sites or shelters on existing or constructed small flat areas within mid-slope locations, where the slope is >15%. Gently out-sloped earthen benches for shelter and tenting sites using side-hill construction may be constructed as described in *Camping Impact Management* [pp 99–102] and are best at avoiding user created site expansion.
- *Trampling resistant and expansion proof*—Minimize the loss of vegetation from trampling by choosing locations that: 1) have limited expansion potential due to topography, rockiness, or dense vegetation cover; or, 2) have very sparse vegetation cover or grassy cover instead of broad-leafed herbs (e.g., sunnier locations). See *Camping Impact Management* [pp 94–97] for additional guidance.
- *Protective of visitor safety*-- Avoid locations close to waterfalls, deep/steep drainages and mountain, ridge, and cliff tops.
- *Sensitive natural resources*—Provide at least a 200-foot buffer between the facility footprint and shorelines and stream banks; and build a non-erosive trail to provide access to water collection points. Avoid active game trails, and known feeding, nesting or denning areas.
- *Cultural Resources*--Avoid locations near other known cultural resource sites.

Site Design

Design the site to:

- *Prevent erosion*—Anticipate traffic patterns and design the site and its trail layout to avoid proliferation of visitor-created trails and erosion. A linear layout of the shelter and campsites along the contour promotes use of provided trails. Shelters and campsites should be clearly marked with access-trail signs (except in Zone 1). Refer to additional site design guidance in *Camping Impact Management* [pp 99–101].
- *Protect water sources*—Route a water-access trail to a durable collection point that minimizes traffic upstream of the point, and erosion at any location. Ideally, water access design begins at the spring or collecting point and follows a single, linear, sustainable grade (<12%) through the overnight site.
- *Promote solitude within the site's limitations*—Where two shelters are built on a site, or where campsites are co-located with shelters; locate them outside the viewshed of the front side of shelters. Where possible, and sufficient area exists, maximize separation between shelters, between campsites and other campsites or shelters, and between the A.T. and these facilities; topography can help provide both screening and separation.
- *Promote visitor safety*—Face the shelter opening away from prevailing winter season winds, preferably to the south and east. Inspect the proposed site for hazard trees and have them removed prior to the start of work.

Facility Design

- *Emphasize primitive, rustic qualities*—Use rustic architectural designs and natural materials for shelters, privies and other structures, e.g., sides consisting of logs, rough-cut wood, or natural stone and non-glare roofing. Visible use of smooth, dimensional lumber should be minimized. Use pressure treated lumber only in locations where materials are in direct contact with the ground or concrete or stone foundations. Limit the visibility of shelters by using roofing or paints with natural colors. Where possible, hide concrete footers by facing them with natural stone.

- *Emphasize resource protection in shelter designs and facilities*—Use the minimal design necessary to concentrate sleeping and cooking activities in a compact “footprint”, but consider separating cooking/eating areas from sleeping areas. Picnic tables or other seating such as flat-topped rocks or log benches are an effective way to concentrate cooking and group social activities.
- *Limit additional “amenities” to those that directly support stated A.T. experiential guidance.* Features such as large decks, windows, hanging chairs/swings, showers, park-style benches, libraries, elaborate fire pits, wood stoves, or solar powered lights are considered inconsistent with the intended A.T. Experience and should be avoided. In Federally Designated Wilderness (ATC Experiential Zone 1), shelters, shelter designs and associated facilities should be reduced to the absolute minimum required for resource protection. See *Camping Impact Management* [pp 102–105] for further discussion.
- *Maximize lifespan and minimize maintenance*—Provide separation between the ground and wood elements, and use pressure-treated lumber for parts with ground contact. In the south, use metal flashing at key places as a termite barrier. Provide adequate roof overhangs to keep wood sides dry. Uphill from a shelter, slope the land to divert water flow around the shelter area and construct broad and deep drainage channels to capture and divert roof water. Roof gutters are not recommended as they require high levels of maintenance and can add “front country” visual elements.
- *Minimize fire danger*—Where fires are allowed, fire rings should be small. Provide no more than one central fire ring at an overnight site. Consider using firmly anchored metal fire rings/grates of a small diameter to discourage dangerous and fuel-consuming bonfires. Avoid or minimize use of substantial masonry work. At campsites, consider ice-berging large rectangular rocks to permanently define fire site locations. Consult with the local authorities for approval where necessary, and note that some land managers prohibit campfires. Emphasize Leave No Trace™ practices with respect to fires.
- *Minimize campsite proliferation/expansion*—Employ side-hill campsite design practices where possible, or use site closure/ruination practices to deter these problems in flatter terrain (see *Camping Impact Management* [pp. 99-102]).
- *Minimize use of tent platforms*—Where possible, employ side-hill campsite designs to create gently-sloped earthen tent pads. Tent platforms may be preferred in rocky or rough locations or where soils or grades make constructing tent pads impractical.
- *Ensure food protection from wildlife*—Visitors should be responsible for protecting their food from wildlife. Based on visitor volume, maintenance resources and wildlife activity, consider--where sufficient maintenance resources are available--installing appropriate facilities to prevent wildlife from obtaining human food. Examples include bear poles, cable systems, or steel food-storage boxes.
- Consider naming sites for geographical/natural features (ie, “The Hemlocks”) rather than individuals. This can reduce emotional responses that might be resistant to future redesign, closure or relocation. Consult with land manager for any relevant naming protocols.
- Human built structures (e.g., shelters, tent pads, privies) must follow accessibility design requirements as detailed in:
 - USFS - Forest Service Outdoor Recreation Accessibility Guide: <https://www.fs.usda.gov/managing-land/national-forests/grasslands/accessibility/resources>
 - NPS - United States Access Board Outdoor Developed Areas Standards: [Outdoor Developed Areas: A Summary of Accessibility Standards for Federal Outdoor Developed Areas \(access-board.gov\)](#)

Sanitation Design

Toilet facilities should be included at all manager created overnight sites, and should:

- *Be located in well-drained soils*—A toilet site must be at least 200 feet from all surface water and the shelter or campsites; and preferably downhill. Use moldering-type privies whenever possible. See *ATC Backcountry Sanitation Manual* for specific design and operational information. Consult local sanitation codes where appropriate.

- *Protect human and wildlife safety*—Pits and bins receiving human waste should be inaccessible to wildlife and flying insects

Visitor Use Management

ATC and our management partners use the [IVUMC Framework](#) for implementing visitor use strategies. At a minimum, plan to manage visitor use to:

- *Avoid or minimize resource and social impacts*—Communicate Leave No Trace™ practices to visitors. Consider on site caretakers or frequent ridgerunner presence during high use periods.
- *Employ sustainable site design and management principles.* Recent studies have shown that “dispersed” or “unconfined” camping policy by land managers in high use areas such as the A.T. have led to an overall net increase in biophysical impacts within the A.T. management corridor. Management partners should consider implementing a policy that employs carefully selected preferred and sustainable “Established” campsites in moderate use areas, and “Designated” camping in high use areas. See: [Applying Recreational Ecology Science to Sustainably Manage Camping Impacts, Marion et al, 2018](#)
- *Match site size and design with the desired A.T. Experience zone.* More primitive zones (1 & 2) generally have smaller capacity and less built infrastructure.
- *Minimize use of regulations and restrictions.* In general, the least intensive actions--or actions that are the least restrictive to visitor opportunities and experiences--that can achieve desired conditions should be used first.
- *Directly manage use.* Consider regulating certain activities (e.g. prohibitions on camping or campfires, requiring use of approved food canisters), or limiting use levels only if problems are not resolved by less direct means.