GUIDANCE FOR LOCATING AND DESIGNING A.T. SHELTERS AND FORMAL CAMPSITES

Endorsed by ATC Stewardship Council on November 3, 2007, with the recognition that future actions will be necessary to address requirements for universal accessibility elements (U.S. Access Board's pending federal rulemaking). The Shelter Approval Checklist at the end of this document must be signed by the appropriate parties before a shelter is constructed. Documents referenced below in italics can be found at www.appalachiantrail.org/policies.

INTRODUCTION

From the Appalachian Trail's inception in 1925, shelters have been a part of the Trail experience, and ATC policy calls for that tradition to continue. However, many changes have occurred in the intervening years that affect the ways that shelters and campsites should be located, designed and managed. Prior to the 1960s, Trail use was light and lightweight tents were not available, so shelters were often the only overnight option available for long-distance hikers. Now that many sections of the Trail have to support heavy visitor use, shelters serve to concentrate overnight use impacts in a managed site. Further, most hikers now carry tents or other shelter, and many seek a less social experience than can be had at a popular shelter. Consequently, the shelter system has evolved into a mix of shelters and campsites, giving hikers options for overnight accommodations.

Appalachian Trail shelters are usually simple structures with three sides and a roof. Formal camping areas can be co-located with shelters to provide greater overnight capacity near dependable water sources, or located more distantly to provide a primitive, solitude-based camping experience. Both types of facilities concentrate camping-related traffic to minimize resource impacts and limit crowding and conflicts when designed with adequate separation. This Appalachian Trail Conservancy (ATC) document provides guidance to hiking clubs seeking to replace or add shelters or formal camping areas. It consolidates and replaces guidance from several previous documents. Unofficial, visitor-created campsites also provide for overnight visitation, though this guidance does not address their management.

The Trail community has expended a tremendous amount of energy and money to prevent external threats and forces from degrading the Trail experience—similar vigilance is necessary to preserve the A.T. experience as it has existed through most of the Trail's history from our own management decisions within the Trail corridor. While there is a long history of shelter design emphasizing "primitive" or rustic structures, recent years have seen substantial "structure creep"—a shift to more elaborate structures with added amenities. It is also important for Trail managers to provide enough overnight use capacity to avoid resource impacts while not "overbuilding" in terms of facility size and number. This guidance is an attempt to clarify the meaning of primitive for clubs and volunteers, while continuing the tradition of volunteer creativity in shelter design and construction.

A small number of larger shelters with modern designs and visitor amenities are no cause for alarm, but if current trends continue, the cumulative effect over several decades could be an unintentional transformation of the A.T. shelter camping experience. Such changes cater to hiker comfort and convenience, and, while some hikers may welcome or request them, they serve no resource-protection function. More importantly, they transform the A.T. hiking experience from one emphasizing self-reliance and intimate contact with nature to a "cabin camping" experience that is increasingly at odds with the Trail community's definition of the "Appalachian Trail Experience":

> "The sum of opportunities that are available for those walking on the Appalachian Trail to interact with the wild, scenic, pastoral, cultural, and natural elements of the

> environment of the Appalachian Trail, unfettered and unimpeded by competing sights or sounds, and in as direct and intimate a manner as possible. Integral to this Trail Experience are opportunities for observation, contemplation, enjoyment, and exploration of the natural world; a sense of remoteness and detachment from civilization, opportunities to experience solitude, freedom, personal accomplishment, self-reliance, and self discovery; a sense of being on the height of the land; a feeling of being part of the natural environment; …and opportunities for travel on foot, including opportunities for long-distance hiking." (See policy on the *Appalachian Trail Experience*…)

This statement and other guiding documents provide a shared common vision that should guide A.T. shelter and campsite design. Modern large-capacity shelters can profoundly alter the nature of A.T. camping, promoting overnight experiences that increasingly emphasize socializing in highly developed facilities. A recent survey of A.T. visitors provides evidence that visitors are perceiving problems with crowding at overnight shelters and campsites along the A.T.[1]

For example, about one-third of hikers saw more people than they preferred to see camping within sight and sound of them. Hikers reported that they preferred to see an average of three other parties of people camped within sight and sound of them and that nine other parties were the maximum that should be allowed.

Planning

It is critical that overnight sites be viewed as a system and that the design and maintenance of that system be properly planned. The location, type (shelter or campsite) and design of facilities should be considered during local management planning and multi-year work planning. During these planning processes, determinations should be made to maintain an existing site as-is, expand or reduce it, or abandon it. In the latter case, the site could be replaced with a new facility at a location where there will be fewer resource impacts. It is also important to look at the possibility of developing new sites based on overnight use patterns and resource management considerations. Finally, before a new site is developed or a shelter replaced, there should be an analysis to ensure that the new facility is appropriate for the setting. In general, as one moves from frontcountry, through backcountry to wilderness, the "primitiveness" of the facility should increase, with campsites occupying the most primitive end of the scale.

Shelter Approval Process

Construction of shelters and large formal campsites require approval by both ATC and land management agencies. The ATC *Local Management Planning Guide* (ATC 1997, Chapter 2 (F), Overnight-Use Areas) states:

> *Shelter Review Procedure*—ATC's Regional Partnership Committee Chair will consult with the club proposing the shelter...to assess the basic soundness based on ATC's *Shelter Approval Checklist*. The RPC Chair and Stewardship Council Chair approve proposals contingent on approvals by the landowning agency and state/local permits. This policy is necessary for new shelters or large campsites with more than one pit privy and applies to all club sections and all ownerships crossed by the A.T.

[1] Manning, Robert E., William Valliere, James J. Bacon, Alan Graefe, Gerard Kyle and Rita Hennessy. 2000. Use and users of the Appalachian Trail: A source book. USD1, National Park Service, Appalachian National Scenic Trail, Harpers Ferry, WV

The NPS A.T. Park Office also has adopted a compliance review process that requires environmental assessments for "new shelters and large campsites with more than one pit privy located on NPS-acquired lands." Similar environmental reviews may be required by other federal and state agencies. Contact them early and allow at least two years for their reviews. Also, contact county offices to procure all necessary local building permits, and check zoning requirements to avoid conflicts with counties and towns. ATC staff can provide additional information and assistance.

SPECIFIC GUIDANCE

This section provides more specific guidance on topics like shelter/campsite capacity, location, site design, shelter/campsite design, sanitation, maintenance, and visitor-use management. Generic guidance is provided where possible, but the A.T. crosses diverse environments, from pristine wilderness, to backcountry, to highly accessible frontcountry. The type of setting or area should influence the type and design of facilities, so this section begins by discussing how overnight site design might vary by environmental setting.

The ATC's "Trail Experience" statement provides a "shared vision" of the desired A.T. visitor experience that the Trail community seeks to provide. While the "Trail Experience" statement is helpful, it applies equally to the entire A.T., including frontcountry, backcountry, and wilderness settings. *Frontcountry* areas are close to paved roads and developed areas and are highly visited. *Backcountry* areas are more distant from paved roads and developed areas and environmental settings are more natural. *Wilderness* areas are either federally designated or managed as Wilderness Study Areas. When designing a shelter or formal campsite, Trail clubs should consult with ATC and their land-management partners to determine which type of area the proposed development falls within, and then consider the following guidance. Adherence to this more explicit guidance can help promote more consistent decision-making for each type of area along the A.T.

Shelter and Formal Campsite Capacity

Design the shelters and campsites to:

- ✓ *Minimize crowding and conflicts*—Limit new shelter capacities to 15. Consider constructing two separate shelters when higher visitation requires additional capacity that cannot be accommodated by campsites. Limit total overnight camping capacity from co-located shelters and campsites to the following: Frontcountry—35; Backcountry—25; Wilderness—15. Capacity limits may be increased based on documented, site-specific management considerations.

- ✓ Capacity estimates for shelters can be calculated at one person per 15 ft^2; capacity for campsites is best estimated by observing the typical number of campers in the area on high, but not peak, use nights.

- ✓ Locations that currently exceed capacities can be improved by applying campsite ruination or closure techniques described in *Camping Impact Management* [Marion (2003) App. 2, pp 99–102].

- ✓ Accommodate expanding overnight visitation by constructing well-designed formal camping areas rather than new shelters (their numbers increased 14 percent from 1971 (N=237, 8.6/mile) to 2006 (N=271, 8.02/mile). Include a justification explaining why a shelter is preferable to campsites with proposals to construct new (and in Wilderness, replacement) shelters.

Shelter and Formal Campsite Location
Preferable locations for shelters and formal campsites are:

- ✓ *Near permanent sources of clean water*—A permanent source of clean water 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 and campsites more than 200 feet from water sources unless no suitable option exists.

- ✓ *Remote from motorized access*—Locate at least two miles from roads, including ORV-use areas, to deter vandalism and use by nonhikers.

- ✓ *Out-of-sight from the A.T*—To preserve a more primitive trail experience, locate facilities just beyond sight of the A.T. whenever possible. Trailside locations reduce 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 lightening strikes. Flat valley bottom or ridge top locations have poor drainage and allow the rapid proliferation and expansion of campsites and trampled areas. Placement on small flat areas within mid-slope positions enlists the sloping topography to concentrate foot traffic on the intended use areas or create gently out-sloped benches for shelter and camping sites using side-hill construction practices described in *Camping Impact Management* [Marion (2003) App. 2, pp 99–102].

- ✓ *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; and, 2) have very sparse vegetation cover or grassy cover instead of broad-leafed herbs (e.g., sunnier locations). See *Camping Impact Management* [Marion (2003) App. 2, pp 94–97] for additional guidance.

- ✓ *Protective of visitor safety and sensitive natural or cultural resources*—Avoid locations close to waterfalls and mountain, ridge, and cliff tops to promote visitor safety. Provide at least a 200-foot riparian buffer between the facility footprint and shorelines and stream banks, and build trails to provide access to the water. Avoid locations near sensitive natural and cultural resources, especially known cultural resource or natural heritage sites, to promote resource protection.

Site Design
Design the site to:

- ✓ *Prevent erosion*—Anticipate traffic patterns and design the site and trail layout to avoid the 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 side-trail signs. Refer to additional site design guidance in *Camping Impact Management* [Marion (2003) App. 2, pp 99–101].

- ✓ *Protect water sources*—Design and maintain water-access trails to prevent erosion. Route water-access trails to a durable access point that avoids traffic above the collection point and erosion at any location. Where necessary, protect springs by constructing a covered stone water box with an outlet that allows easy filling of water containers.

- ✓ *Promote solitude*—Where two shelters are built on a site, or where campsites are co-located with shelters, locate them outside the view-shed of the front side of shelters. Where possible, provide a minimum of 30 yards of separation between shelters, between campsites and other campsites or shelters, and between the A.T. and facilities.

- ✓ *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.

Shelter/Campsite Design
Design the shelter/campsite to:

- ✓ *Emphasize primitive, rustic qualities*—Use rustic architectural designs and primitive materials for shelters, e.g., sides consisting of logs, rough-cut wood, or natural stone and non-glare roofing. Use of planed, dimensional lumber should be minimized. 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 small shelter "footprint." Features such as large covered decks, windows, hanging chairs, showers, and wood stoves are generally considered inconsistent with the intended A.T. Experience and should be avoided. In Wilderness, shelter designs and associated facilities should be reduced to the absolute minimum required for resource protection. See *Camping Impact Management* [Marion (2003) App. 2, pp 102–105] for further discussion.

- ✓ *Maximize lifespan and minimize maintenance*—Provide separation between the ground and wood, and use pressure-treated lumber. In the south, use metal flashing at key places as a termite barrier. Provide adequate overhangs to keep wood sides dry and overlap roofing to prevent rot in supporting wood. Slope the land uphill from the shelter to divert water flow around the shelter area and install broad and deep drainage channels armored with rock to capture and divert roof water.

- ✓ *Minimize fire danger*—Where fires are allowed, fire rings should be small. Provide no more than one fire ring at a shelter. 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 and anchor fire site locations. Consult with the local Fire Marshall for approval where necessary, and note that fires are prohibited in some states and parks. 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* [Marion (2003) App. 2, pp 99-102].

- ✓ *Minimize use of tent platforms*—Tent platforms are less natural, expensive, and require sustained maintenance. Where possible, employ side-hill campsite designs to create gently-sloped tent pads; in rocky areas obtain soil from wind-thrown tree root balls or borrow pits.

- ✓ *Ensure food protection from wildlife*—Install appropriate facilities where necessary to prevent wildlife from obtaining human food. Examples include bear poles, cable systems, or steel food-storage boxes.

Sanitation
Toilet facilities should:

- ✓ *Be located in well-drained soils*—A toilet site should be more than 200 feet from all water sources and the shelter or campsites, and preferably downhill. Perform a percolation test by digging a hole and filling it with water. The hole should drain readily within a short time. Look for areas with deep soils and water tables (>4 ft), where the digging is easiest.

- ✓ *Follow applicable state and ATC guidance*—Consult and follow all state regulations for pit toilet use. Consult the ATC publication *Backcountry Sanitation Manual* (ATC and Green Mountain Club 2002) for further guidance and options.

- ✓ *Protect human and wildlife safety*—Pits and bins receiving human waste should be inaccessible to wildlife and flying insects, with openings only through a covered and screened vent stack and waste entry hole with a self-closing lid. Retired privy sites should be filled with soil and mounded at least 12 inches above grade to allow for settling.

Maintenance
Perform routine maintenance to:

- ✓ *Minimize soil erosion*—Maintain trails within the site and to the water source to minimize soil erosion. Water-source trails are often too steep and have fall-line alignments. If alternate alignments are impractical (i.e., visitors won't use them), then install sufficient tread hardening to limit erosion. Inspect shelter/campsite areas carefully for signs of erosion and install grade dips or water bars to avoid further erosion.

- ✓ *Limit fire danger*—Clear wind-thrown trees and other flammable materials away from the shelter. Keep fire rings away from the shelter overhang.

- ✓ *Maximize facility lifespan*—Check all wooden structures annually for signs of mold and rot and repair roofing or paint to prevent further deterioration. Inspect and repair other damage as needed.

- ✓ *Remove hazard trees*—Check for and remove hazard trees from shelter and designated camping areas. Hazard trees are dangerous to remove. This is an excellent job for your agency partner.

- ✓ *Preserve the natural appearance of facilities*—Use clear or semi-transparent flat (non-reflecting) paints with natural colors to preserve wood in shelters.

- ✓ *Maintain clean site appearances*—Dig out all fire grates, remove trash and scatter coals/ash in off-site areas. Pick up all litter and discarded food; clean the shelter.

Visitor Use Management
Manage visitor use to:

- ✓ *Avoid or minimize resource and social impacts*—Communicate *Leave No Trace* practices (see attached suggested guidance).

- ✓ *Minimize use of regulations*—Preserve visitor freedom by employing educational options first and regulations if problems are not resolved. Potential regulations to consider include limiting camping in shelter areas to shelters and formal campsites, prohibitions of campfires, and hanging food bags in bear country.

ATC Shelter Approval Checklist

Shelter Name: _____
A.T. Maintaining Club:_____
Submitted by:_____ Date: _____
Agency Partner: _____

New site? ☐ Replaces existing shelter? ☐
New shelter at an existing campsite? ☐ New shelter and new campsite? ☐
Is this proposal identified in the club' Local Management Plan? Yes ☐ No ☐
Is this proposal identified in the club's Trail assessment? Yes ☐ No ☐

Project Description
Describe type of shelter; construction, cost estimate, etc. (use additional sheet if needed):
_____
_____
Name of nearest shelter/overnight site (in both directions) and distance from the proposed site:
North: _____ South _____
Distance of proposed site from the A.T. (if on a side trail): _____ miles
Distance from nearest open road: _____ miles. Describe the situation: _____
_____
Distance from nearest road open only for administrative use: _____ miles.

Provide a comprehensive site plan. Please address motorized access to the shelter and closure of any temporary roads following construction (use additional sheet if needed): _____
_____
_____

Describe the location of the water source relative to the shelter site: _____
Existing privy? Yes ☐ No ☐ New privy? Yes ☐ No ☐ Type: _____

Agency Approvals
USFS/NPS NEPA Compliance—Information submitted to agency? Yes ☐ No ☐
EA completed? Yes ☐ No ☐

State/local agency approval received? Yes ☐ No ☐ Not Needed ☐ Describe:_____
Agency engineering approval received? Yes ☐ No ☐
Biological evaluation (T&E species review) completed? Yes ☐ No ☐
Cultural-resource evaluation completed? Yes ☐ No ☐

Attachments
☐ Map of project location (use NPS segment map, USGS quadrangle, guidebook map, *etc.*)
☐ Site plan (showing side trail, shelter, tent pads or platforms, privy, water source, *etc.*)
☐ Shelter design (sketch or, if available, detailed plans)
☐ ☐ Materials list
☐ Other:

Approved by:

_____ Club Representative	_____ Date
_____ Agency Representative	_____ Date
_____ ATC Regional Director	_____ Date
_____ Regional Partnership Committee Chair	_____ Date
_____ ATC Stewardship Council Chair	_____ Date

A.T. Shelter and Campsite Use—*Leave No Trace* Practices

PLAN AHEAD AND PREPARE

- If you are traveling in a group of more than 5, please consider camping away from the immediate vicinity of the shelter, leaving the shelter for use by lone hikers and small groups.

TRAVEL AND CAMP ON DURABLE SURFACES

- While hiking, stay on the trail, never shortcut switchbacks. Take breaks off-trail on durable surfaces.
- To minimize impact and preserve the natural environment, restrict activities to areas where vegetation is already absent, or to pristine sites that are unlikely to be discovered and reused.

DISPOSE OF WASTE PROPERLY

- Never burn, bury, or leave litter or food anywhere. PACK IT OUT.
- Use the privy for human waste ONLY (feces). DO NOT fill with trash. If facilities are unavailable, dispose of human waste (feces) by burying in a cat-hole, 6–9" deep, 4–6" wide and at least 200 feet from water sources, trails and shelters.
- Where campfires are permitted, leave the fire ring clean by removing all trash and scattering unused wood, cold coals, and ashes away from camp.
- Wash dishes, bodies, and clothing away from water sources—minimize use of soap.

LEAVE WHAT YOU FIND

- Never build structures or alter shelters in any way.
- Never damage live trees or plants.
- Leave plants, cultural artifacts and other natural objects where you found them for others to enjoy.

MINIMIZE CAMPFIRE IMPACTS

- Use stoves for cooking—if you need a fire, build one only where it's legal and in existing fire rings using small dead and downed wood. Burn all wood to ash.

RESPECT WILDLIFE

- Our goal is ZERO RODENTS at shelters. You can help: Store all food out of reach of animals. Don't discard or drop any food, even a few noodles or pieces of granola are a large meal for mice. Clean up spills completely and pack out all food scraps.
- Bear sightings are *increasing* at shelters and campsites—even small food rewards teach them to associate humans and camping areas with food. When that happens, they are often killed to protect human safety.

BE CONSIDERATE OF OTHER VISITORS

- Be courteous to other hikers. A.T. shelter space is available on a first-come, first-served basis *regardless* of the type of hiker or length of their hike.
- Respect others by keeping loud voices and noise to a minimum
- Let nature's sounds prevail: NEVER use cell phones or audio equipment in the presence of other hikers.
- Limit-of-stay is TWO NIGHTS.
- Travel in groups of 10 or fewer hikers overnight; or 25 or fewer if day hikers.

1-800-332-4100 (http://www.LNT.org) for further information