ATC Stream Crossings and Bridge Policy

Adopted by the Appalachian Trail Conservancy on May 21, 2011

The footpath of the Appalachian Trail should be located to minimize the need for stream crossings and bridges. However, in some areas, the best route for the Trail may require stream crossings. Fords, step-stones, or bridges should be located and installed to improve safety, minimize impacts to natural resources, or enhance the hiking experience.

**Crossing Design:** To preserve the natural, remote, and wild character of the Trail, stream crossings should employ the simplest means available that will provide a safe passage for Trail visitors and protect riparian and aquatic resources, including free upstream and downstream passage of aquatic organisms. A simple, well-designed ford or a few step-stones, combined with steps to protect the streambanks from erosion, may be used for most stream crossings. Unbridged stream crossings may be impassable shortly after a storm or during late winter and spring runoff; others may provide a certain measure of challenge even in low-water conditions. These primitive conditions are essential to the Appalachian Trail experience and deserve protection.

Partners planning bridge and stream crossing projects should consider a range of alternatives from the most simple (a ford) to those that are more elaborate. In general, a bridge should be constructed or replaced only if:

1) It is essential to hiker safety during the snow-free hiking season, recognizing that a stream may not be fordable when flooding occurs; or,
2) It is absolutely necessary to protect sensitive resources, such as soils along a riverbank.

During the project planning process, the project partners should pay particular heed to primitive and wilderness values. ATC's policy "Managing the Trail for a Primitive Experience" should be followed, and the planning questions associated with that policy addressed, before proposing a project design.

**Footbridge Design:** A footbridge is defined as a permanent, artificial structure not in continuous contact with the ground, regardless of length, width, or height above the surface, with a load-bearing free span between abutments or sills, for pedestrian passage over streams, wetlands, or obstacles. Bog bridges or puncheon used for Trail hardening and fence stiles are not included in this definition.

All A.T. bridges should be designed to meet or exceed an accepted engineering design standard for pedestrian bridges in recreational trail environments. Standard bridge designs or specifications that have been developed by state or federal land managing agencies and approved by ATC may be used to meet this requirement.

All A.T. bridges must comply with the *Accessibility Guidelines for Outdoor Developed Areas* or, for bridges on USDA Forest Service lands, the *Forest Service Trail Accessibility Guidelines* (FSTAG). This requirement is not intended to mandate that every bridge be accessible, as the accessibility guidelines allow exceptions based on the setting, location, and other factors.
In backcountry and wilderness settings, bridges should be designed to minimize their size and complexity and present a rustic appearance. In these settings, all reasonable measures should be considered to keep modern materials (steel, concrete, treated wood, synthetics, etc.) disguised or hidden from view.

The size, complexity, and cost of bridges generally increase with the design flood recurrence interval.\(^1\) That is, a bridge that can withstand a 25-year flood will be smaller and less expensive than a bridge designed to pass a 100-year flood. In general, A.T. bridges should provide safe passage when a stream is at its bankfull stage. However, bridges should not be oversized or overbuilt. In practice, bridges should be built to less than a 100-year flood standard to lower their cost and make them more compatible with a backcountry setting. However, there are circumstances where, due to the nature of Trail use in the area, a bridge that is passable during a 100-year flood is necessary, resulting in a larger and more elaborate structures. In most cases, such structures should be limited to sites where there is an overwhelming public-safety or resource-protection concern or where a cost-benefit analysis clearly demonstrates the benefit of the larger structure.

**Approval Process for Bridges:** Proposals for new and replacement bridges require approval by ATC prior to construction. The approval process follows ATC’s policy “Review and Approval of Management Plans and Project Proposals.”

Proposals for new and replacement bridges must include:

1. A summary description of the need for the bridge and a map showing the location;
2. Construction plans (or an ATC-approved standard design) that show the bridge’s elevation (side view), maximum span, and the material, species, diameter, and condition of proposed bridge stringers;
3. Documentation of whether the proposed bridge will be located in a FEMA-mapped flood hazard area, and, if so, additional documentation of any requirements imposed by the municipality administering the FEMA program in that location;
4. A commitment to periodic inspections and maintenance.

Depending on the size and complexity of the structure, ATC or the land-managing agency may require that bridge plans, specifications, and the inspection/maintenance schedule and procedure be prepared under the supervision of a registered professional engineer. If that is the case, it is the responsibility of the project proponent to engage a qualified engineer. ATC may provide engineering assistance if the bridge is included in the capital plan.

**Coalignment with Public Roads**—In situations where the Appalachian Trail is coaligned, or on or under a bridge, with a road or highway, ATC will seek to ensure that state or local transportation officials include adequate provisions for safe pedestrian use of such facilities in accordance with standards established by the American Association of State Highway and Transportation Officials (AASHTO). Unless agreement is reached to the contrary, ATC expects that the agency responsible for construction, inspection, and maintenance of the bridge will also be responsible for the design, installation, and maintenance of the pedestrian portion of the coalignment.

\(^1\) The term “flood recurrence interval” is often shortened to, for example “25-year flood” or “100-year flood.” Statistically, a 25-year flood has a 4 percent probability of occurring in any given year, while the probability of a 100-year flood occurring in a given year is 1 percent.
Inventory, Assessment and Maintenance: All bridges are inventoried by ATC and the Trail clubs during the regular Trail Assessment process. Trail-Assessment inventories include details critical to ATC’s oversight of essential characteristics with a bearing on safety. During the Trail Assessment, conducted at least once every five years, the condition of bridges should be evaluated, any deficiencies should be documented and corrective action pursued. Bridges requiring inspection, maintenance, repair or replacement beyond the capability of a Trail club should be listed in the capital plan for technical or funding assistance.