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OUTDOOR RECREATION

Camp Loop Design Guidelines

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Campgrounds should be safe and convenient for users; administratively functional for managers; and environmentally sound to protect the resource base. This publication considers a number of planning, design, and construction techniques for developing camp loops. To "fit" a group of camp units onto a specific piece of land, planners should address those three areas of concern: users, management, and the environment.

Since situation specific aspects of individual areas like topography, soils, and vegetation will influence each design differently, there is no single "right" solution to the challenge of loop design. There are, however, several techniques available that speak to the three areas of concern. Generally, you encounter two basic types of resource bases when planning a group of camp units: the narrow site and the broad, generous site. These require different approaches to design and are considered separately below by looking at both poor and functional solutions to loop design.

LOOPS ON NARROW SITES

Often, a piece of land for a camp loop will be long and narrow. One example is a site between the edge of a ridge and a lake or a stream. A similar development site exists along the top of a narrow ridge bordered by steeply sloping land on either side. Figure 1 illustrates a typical "solution" to this design challenge. The basic problem with the design in Figure 1, however, is the excess of road involved.

An excessive amount of road, aside from being expensive, tends to use up the limited unit space on narrow sites. The solution here contains 11 camp units. Figure 2 shows another poor loop design for narrow sites, frequently found in both the public and private sectors.

This solution violates sound design principles from three perspectives. From the manager's standpoint, it's poor practice to move traffic through one loop into another one, since this technique makes it difficult (or impossible) to administer loops separately. The design also creates an inconvenient and

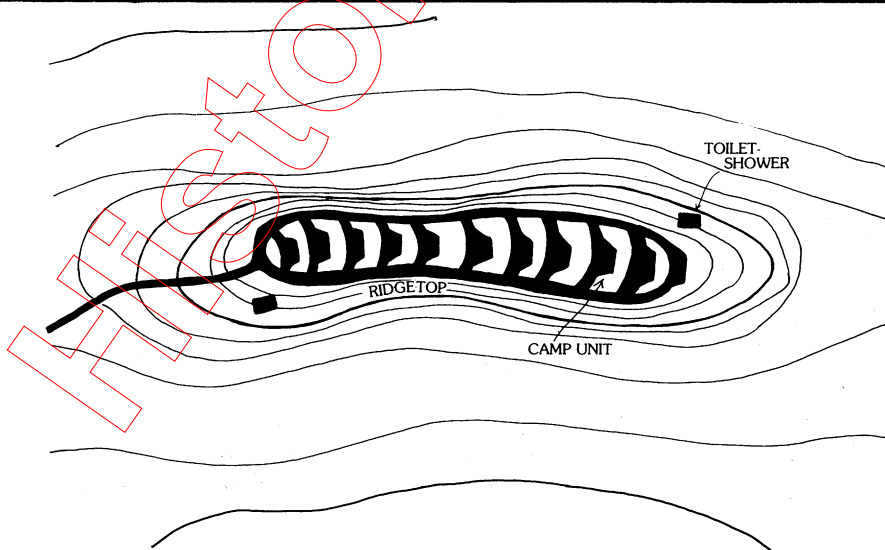


Figure 1.
The narrow site:
a poor solution
with too much space
taken up by roads.

unsafe condition for users, since the more heavily traveled main collector road bisects the loops. Finally, placing the toilet-shower buildings in the center of the loops creates as many pathways to these buildings as there are camp units — a situation leading to unnecessary impact on the resource base.

Figure 3 demonstrates a more functional solution to building camp units on a narrow site. Consider the following features. First, this design uses much less road access than either Figures 1 or 2. By aligning the loop road with the portion of the site at the top of the drawing, you can free the remainder of the site for camp unit layout. The units themselves are laid out in an “up and back” sequence with long parking spurs interspersed with shorter ones on both sides of the road to take full advantage of the limited space available. You can fit 22 camp units here — double the number shown in Figure 1 with considerably less road access. Note, too, how the placement of the toilet-shower building, coupled with a little judicious vegetative screening, moves people psychologically to and from the building on the reinforced road surface. Thus, even with the addition of several camp units you can improve environmental conditions.

The challenge of developing camp loops on a narrow site can demonstrate another good design technique. Figure 4 shows a narrow site, in this case a peninsula of land jutting out into a lake. The problem would seem to be how to provide access to the camp units you want to build here. Figure 5 shows one way of doing this. The road generally follows a single contour line, so elevation changes are not a problem. In fact, this is how most designers would address such a site, but this solution, as in Figure 1, uses too much road. The real problem here, however, is more basic: roads are support facilities and, as such, you should not allow them to dictate the location of primary facilities such as camp units.

Figure 6 shows an alternative solution. Here, we select the best locations for camp units as the initial step in the design process — the sites marked with “x’s” in the drawing. This step provides the information needed for an informed judgment about where to locate the loop road to reach these points. This approach results in the design shown in Figure 7. Here, the location of camp units is the determinate factor in the decision about where to align the center line of the road. While the illustration shows how to develop a specific kind of facility on a specific resource base, the point has broader appli-

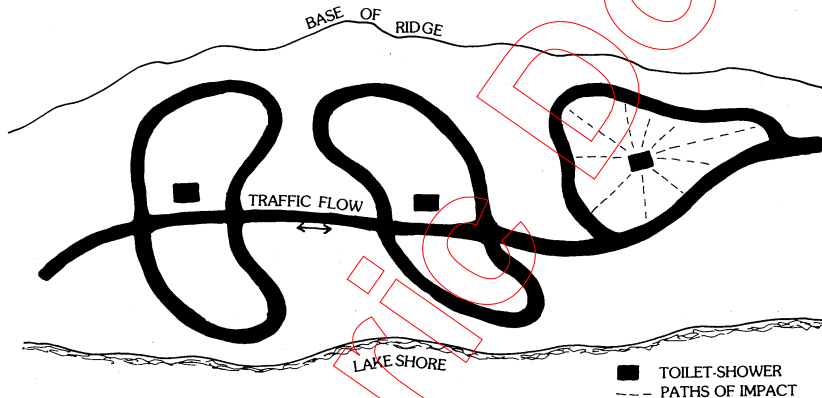


Figure 2.
Another poor solution to the narrow site because of traffic patterns and too many pathways to toilet-showers.

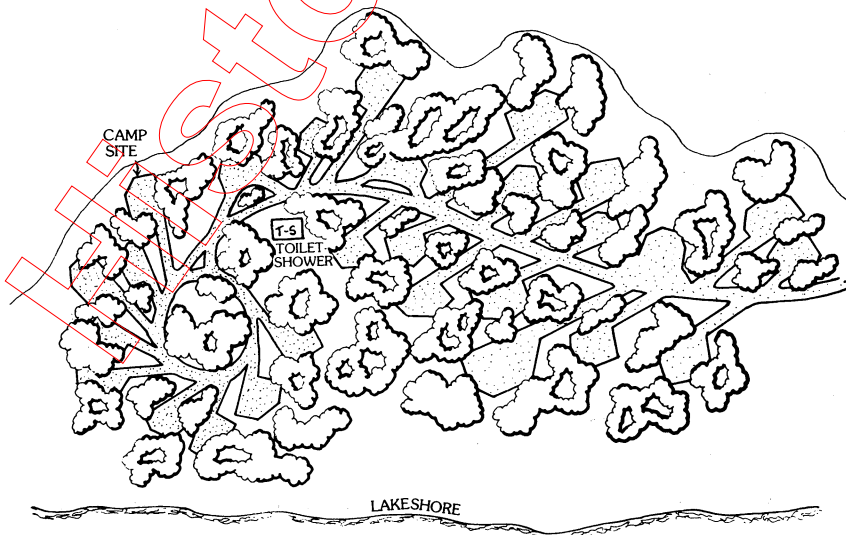


Figure 3.
The narrow site: an effective design.

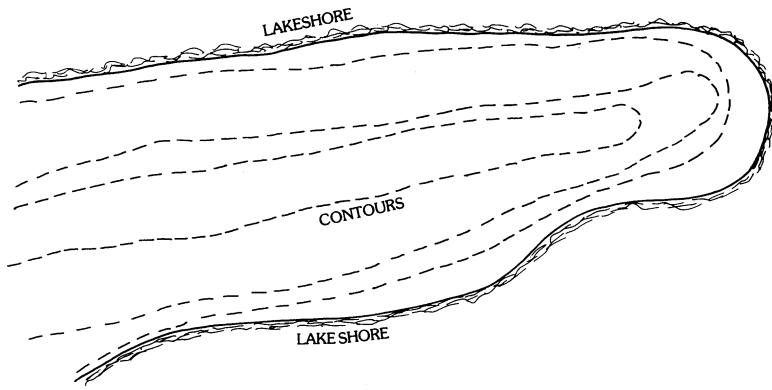


Figure 4.
Base map for
a narrow peninsula.

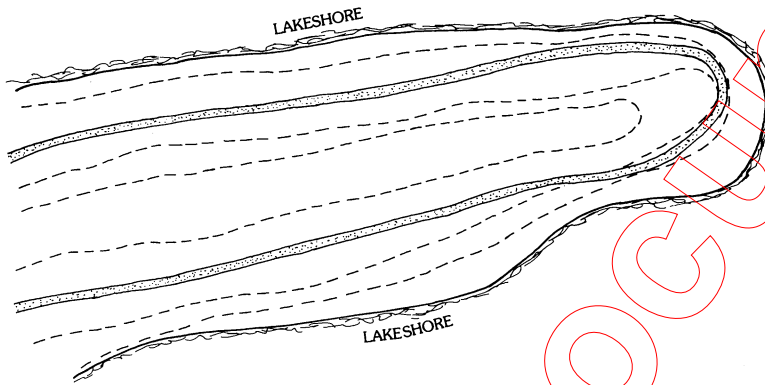


Figure 5.
This access road
follows a single
contour line,
but its alignment
uses too much
primary facility space.

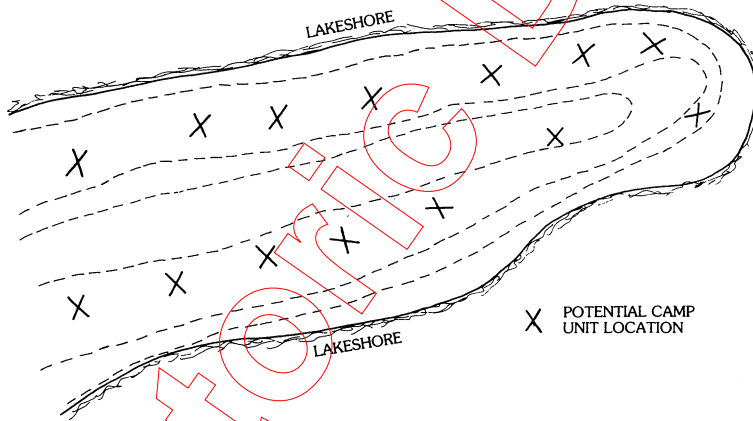


Figure 6.
Determining primary
facilities first.

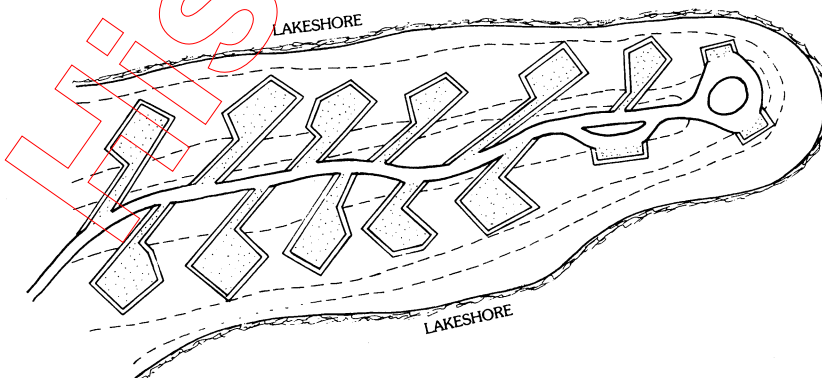


Figure 7.
Road alignment
supporting primary
facilities.

cation: primary facilities should dictate the placement of support facilities rather than the other way around.

LOOPS ON BROAD SITES

Often, an ample land base may be available for developing camp areas. Tops of wide ridges or a broad space between the edge of a ridge and a water attraction exemplify such sites. Figure 8 illustrates one way of designing camp loops on a broad site. One problem with this design is the placement of the main road between campers and the water attraction they use for recreation. Such placement creates a safety hazard for users. Locating the boat ramp beyond the camping area is also a problem. If management wanted to keep the ramp open after closing the campground for the season, they would have to barricade eight entry/exit points to the camping area (two on each loop).

Also, the long, narrow "finger shaped" loops complicate placement of the toilet shower buildings. The placement in loop 1 maximizes pedestrian

impact as shown in Figure 2. The approach in loop 2 doubles the construction cost of sanitary facilities and still fails to minimize impact. Locating the toilet-shower between two loops as in 3 and 4 results in impact and inconveniences campers on the side of each loop away from the building.

Figure 9 shows another poor solution to the broad site. Here again, the toilet-shower locations will contribute to environmental problems. Further, the site of these facilities is inconvenient for campers because of the distance between the toilet-showers and many of the camp units. Another design problem here is the wasted space created by developing "fat" loops — wide spaces between parallel sections of road (see the section on basic loop design, below).

The traffic flow of this design can also cause problems for users in terms of confusion: what this plan view shows is not what confronts users on the ground from an eye level perspective. Entering the area shown in Figure 9 in their vehicles, campers find a series of choices. At several intersections, they have to decide whether to turn right or left. A

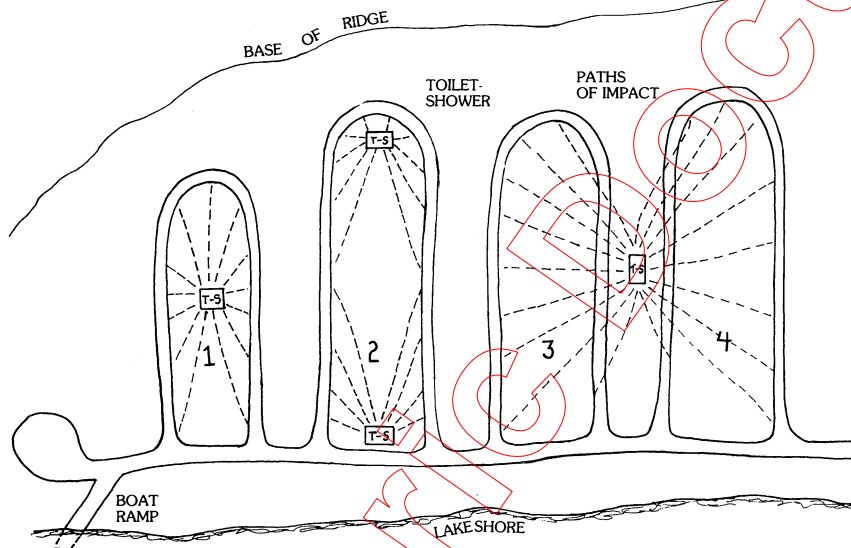


Figure 8.
The broad site:
a poor solution
because of the main road
between campers
and the water attraction.

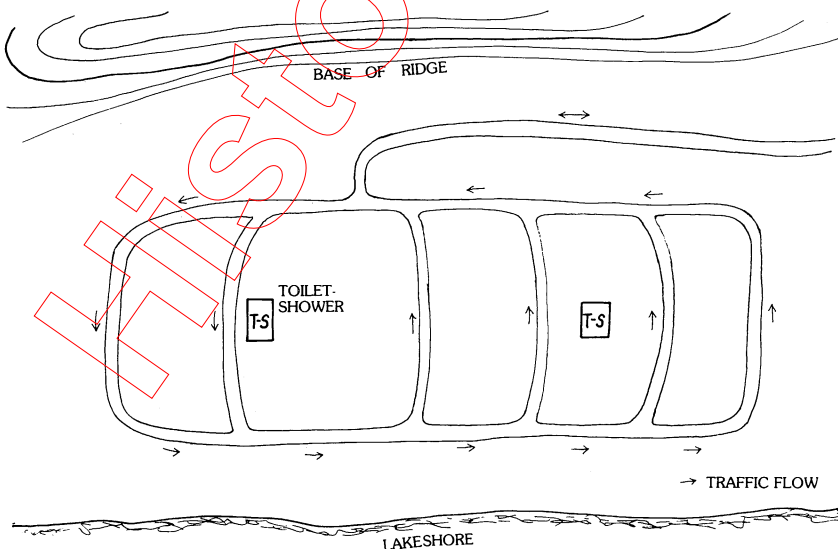


Figure 9.
Another poor solution
to the broad site;
distance to toilet-showers
means camper inconvenience
and environmental problems.

design is more “comfortable” for users if planners make as many of these decisions for them as possible by creating “preselected” traffic flow options: intersections within campgrounds designed so users can only go one way.

Figure 10 shows an even worse camp loop design for the generous site, yet one frequently found in practice. The layout contains eight of the mistakes discussed earlier. These include:

- location of main road
- number of toilet/showers
- location of boat ramp
- amount of road
- poor space allocation
- location of toilet/showers
- number of gates and signs
- lost and confused campers

Figure 11 shows a better way of approaching the design of camp loops on broad sites. Several aspects of this design improve on Figures 8, 9, and 10. To begin with, the main road is at the base, or “toe” of the ridge, reducing the potential hazard of routing traffic between the camp loops and the water attraction. Also, “keeping the road high,” as this approach is called, moves the circulation patterns out of the area suitable for development.

This design also creates the potential for managerial control of the area. The boat ramp is part of the development complex but away from the camping zone, so the manager has the options of closing the entire area (close gate 1), opening only the boat ramp (close gate 2), opening a limited portion of the campground during slow periods (close gate 3), opening more of the area to camping as use increases (close gate 4 or 5, depending upon need), or opening the entire area. This aspect of the design has two advantages. First, management controls use. Decisions to open or close various portions of the area can be made on site as current

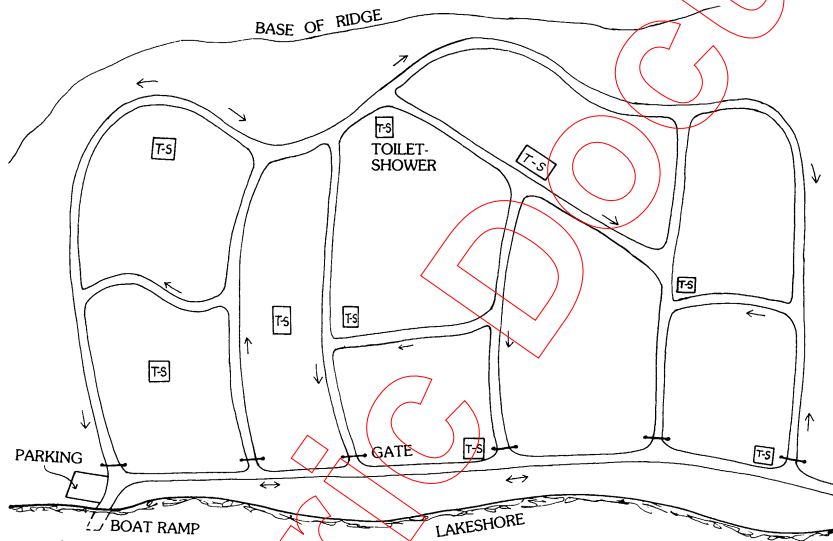


Figure 10.
A typical (and poor) camp loop incorporating several impediments in its design.

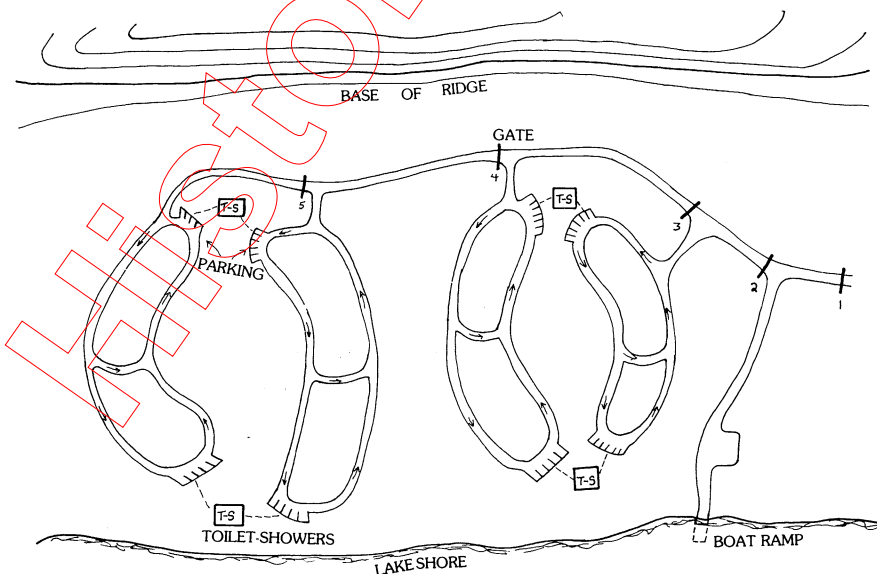


Figure 11.
The broad site: an effective design.

conditions dictate. Second, use controls management. When use levels are higher than anticipated, this design can respond to the situation through its flexibility.

Another problem this design addresses is environmental impact. Note how individual loops are "pointed" toward the toilet-shower buildings. With this orientation the most convenient way to approach these buildings is also the one that reduces pedestrian impact most effectively. Rather than cutting across the unprotected natural zones between camp units, the easiest path from individual sites to the nearest sanitary facility is on the reinforced road surface. Also, the placement of the toilet-showers keeps them close enough to users to be convenient without the need to spend capital dollars on more sanitary facilities than you really need.

BASIC LOOP DESIGN

Whether development sites are broad or narrow, there are a few general loop design issues worth considering. Specifically, these include: how wide (or narrow) loops should be; how far apart to place loops to meet user needs without wasting valuable land; and how many (or few) camp units to place on a single loop.

Camp loop width should be between 100 feet and 120 feet as Figure 12 shows. The design criterion is the length of recreation vehicles. By law, camping trailers can be up to 35 feet long; otherwise, they must be licensed as permanent house trailers. Add to this 35 feet the length of a tow vehicle and you'll find you need between 50 to 55 feet to park a camper on a camp unit. Thus, when you consider two units back to back on opposite sides of the loop as shown in Figure 12, at least 100 feet is needed from a point on the inside to the point on the opposite inside of each loop.

Conversely, making loops too wide will waste space. If two 35-foot trailers with tow vehicles are opposite each other, the necessary parking space will be about 100 feet. Add to this a neutral intersite zone or buffer of about 20 feet between the backs of the two sites and the most width needed is about 120 feet.

This information about the length of recreational vehicles can also provide you with a guide to deciding how far apart two loops should be. To accommodate the longest possible trailer and tow vehicle on a single site, you'll need about 55 feet. As the schematic of the camp units in Figure 13 shows, the units are not perpendicular to the loop road. Rather, the units are angled at less than 90 degrees to allow users an easier approach when backing a long trailer

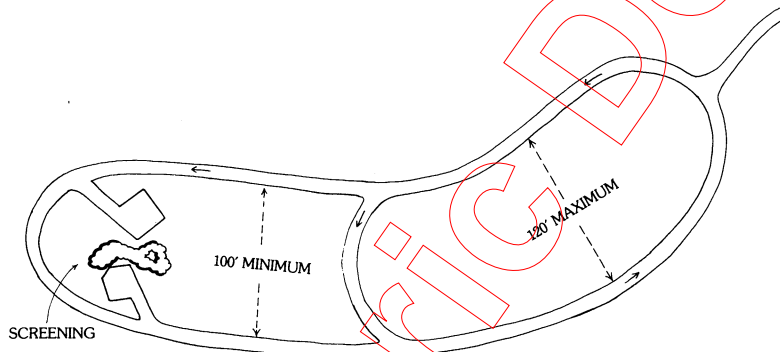


Figure 12.
Camp loop width standards measuring 100 to 120 feet.

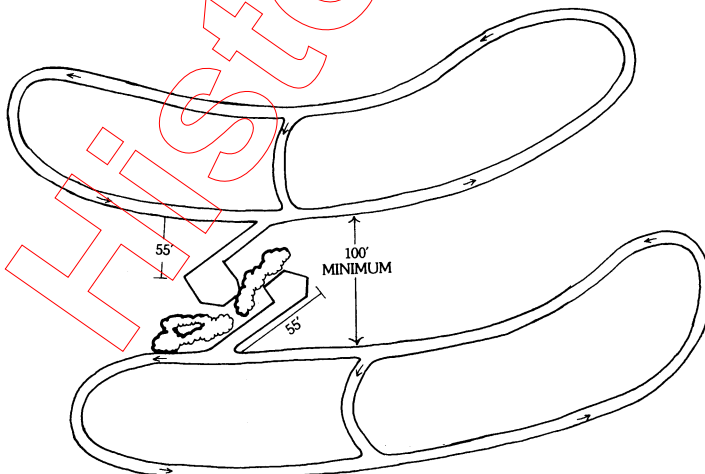


Figure 13.
Interloop distances recommending 100 feet.

onto a site. This angle also keeps the back of the camp unit less than 55 feet from the edge of the loop (straight line distance), although the unit itself is 55 feet long. You can also “stagger” camp units on adjacent loops as shown, and not all units need to be long enough to accommodate the maximum length trailers made, since many users have smaller camping vehicles. Thus, loops don’t have to be extremely far apart. A good rule of thumb to prevent crowding and avoid wasted space is to allow at least 100 feet between loops. Maximum distances will vary with terrain and vegetation for shading and screening, but in general loops should be as close together as possible given the 100-foot minimum.

The question of how many units to plan per loop depends, in part, on capacities. If you build too few units on each loop, you’ll probably end up installing more toilet-showers than you need. But too many units per loop may lead to traffic congestion. While there is no exact cutoff point, 50 is generally a good number. Since individual camp units must be designed in the field rather than on paper, it’s hard to specify exact numbers in advance. However, planners need to provide engineers and architects with a fairly accurate “ballpark” figure so that they can plan accordingly for utility lines, septic drainfield capacities, and the like.

If you look at the several functional designs we’ve discussed to this point, you will find that all loops have one thing in common: a basic “peanut” or “hotdog” shape. There are several advantages to this configuration, most of which result from the flexibility it gives you. Peanut shaped loops lend themselves to simple traffic patterns, easy administrative control, efficient use of land, lessened amounts of roadway, and greater reduction in potential impact since the shapes can be manipulated to “point” at toilet-showers and other pedestrian destinations. Figure 14 shows a variety of shapes peanut loops can take.

In conclusion, camp loop design requires attention to detail, a measure of creativity, a knowledge of users, and an understanding of management requirements. Camp loop design is not particularly difficult; most of the decisions you need to make regarding design can be arrived at by applying common sense. What is difficult about camp loop design is training yourself to see potential in the resource base rather than limitations. Probably the best method of achieving this is to develop two or more alternative designs for each area you plan; there is rarely a single “perfect” solution to any design challenge.

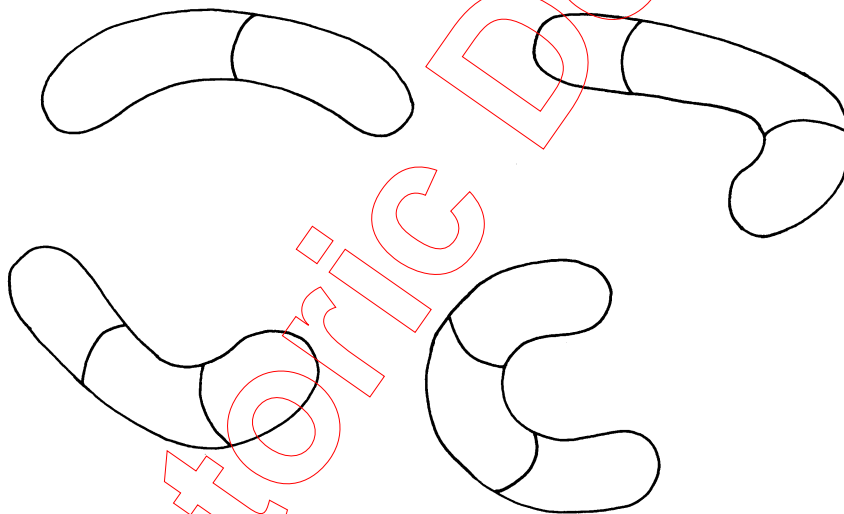


Figure 14.
Functional loop
configurations
showing a variety of
peanut shapes.

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