

using a narrower cartway width and a landscaped island. The reduced pavement coverage has several positive results: less impermeable surface, which results in less runoff and lower street maintenance costs. The narrower cartway width is a practical response to the fact that there will be no through traffic. The limited number of residences on the cul-de-sac should be the primary guideline in determining the cartway width.

There are many ways in which to design a cul-de-sac or dead-end street, as shown in Fig. 5.26. However, the objective of the design is usually the same—that is, to develop an environment that is a pleasant place to live—safe, attractive, and desirable from the day construction is finished through to its maturity. Administrative constraints in the form of local design ordinances and requirements should serve as guidelines for the early design (see Table 5.16). These guidelines often do not account for the conditions found on a specific site or the requirements of a particular product. Generally design requirements for cul-de-sacs revolve around the number of units allowed, the length of the cul-de-sac, and the radius of the turnaround. The design of the cul-de-sac should be based on its intended use rather than prescriptive standards. A cul-de-sac designed for multifamily units should be different from a cul-de-sac designed to create a small separate community feeling. The ideal number of families on a cul-de-sac is difficult to determine. Beyond a single family, the next most basic social unit is a group of between 3 and 12 families. This is consistent with the opinions stated in informal discussions with residents of cul-de-sacs who have indicated that on cul-de-sacs with greater than 10 or 12 families, there is no special identity among the residents as there is on those with fewer families. Most ordinances limit the number of units to between 21 and 28, but there are few empirical arguments to support such a high number.

The cul-de-sac forms a cluster of residences. It is the cluster arrangement that creates a sense of privacy or exclusivity that many buyers desire. It is possible to arrange several clusters along a single cul-de-sac. In such cases, a waiver from a local guideline may be necessary. The requirement to limit cul-de-sac length seems to have developed out of a concern for traffic congestion. If these issues are adequately addressed in a design, a waiver of the requirement would seem appropriate. Cul-de-sac lengths are commonly limited to about 1000 ft, but they may run up to 1500 ft. In completing the research for this work, no empirical basis was found for determining a limit to the number of units or the length of a cul-de-sac based solely on the number of dwelling units. The most logical argument for limiting cul-de-sac length is the amount of traffic that might be generated from the single point of ingress and egress during peak traffic times. If lot sizes are larger than an acre, the guideline should be adapted appropriately. In projects with large lot sizes, the distance between houses can create the same effects as do too many units, and the sense of place and neighborhood does not develop as it would in a higher-density circumstance. In a cul-de-sac with a length that exceeds 1000 ft, an interim turnaround might be considered.

The design of the terminal end of a cul-de-sac is the source of the most discussion and concern. The choice of the design vehicle is fundamental to the design