

Description	The size of residential street cul-de-sacs is minimized and landscaped areas incorporated to reduce impervious cover. The radius of cul-de-sacs should be the minimum required to accommodate emergency and maintenance vehicles.
General Information	<p>Dead end streets in residential subdivisions are usually required to have an acceptable option for vehicles to turnaround, with the circular cul-de-sac being the most common. Figure 21-1 depicts a range of different turnaround options. Each provides a minimum internal turning radius of 17 to 20 feet to accommodate the larger vehicles, but there are differences in the amount of impervious cover of each option.</p> <p>The amount of impervious cover can be reduced from the standard impervious 40-foot radius circle. For most residential streets serving less than 25 homes, a minimum cul-de-sac open turnaround radius of 30 feet is recommended. A landscaped island can be placed in the center of the cul-de-sac turnaround as long as it maintains an internal turning radius of 17 to 20 feet. This island can be designed as a depression to accept stormwater runoff from the surrounding pavement, thus furthering infiltration. A flat apron curb will stabilize roadway pavement and allow for runoff to flow into the cul-de-sac's open center. Alternative turnarounds such as the T-shaped "hammerhead," create even less impervious cover than any circular option, and should be encouraged in shorter cul-de-sacs, particularly in rural areas (Schueler, 1995a).</p> <p>Alternative turnarounds can be applied in the design of residential, commercial, and mixed-use development. Combined with alternative pavers, green parking, curb elimination, and other techniques, the total reduction to site impervious cover can be dramatic, reducing the amount of storm water runoff from the site.</p>
Additional Resources	<p>Coffman, L., 2000. <i>Low Impact Development Design Strategies</i>. Available on EPA website.</p> <p>Schueler, 1995. <i>Site Planning for Urban Stream Protection</i>. Available on Center for Watershed Protection website.</p> <p>USEPA, <i>Storm Water BMPs: Alternative turnarounds</i>. Available on EPA website.</p>

Figure 21-1. Alternative turnarounds

