**Description**

Impervious areas can be significantly decreased with the cul-de-sac design in subdivisions. The smallest possible radius to this area ensures that stormwater runoff has less impact on downstream water bodies.

Other combating methods of runoff acceptance in a cul-de-sac stem from the application of flat apron curbs, islands to accept runoff from surrounding area and T-shaped turnarounds.

**Suitable Applications**

- Small subdivisions having 10 or fewer homes can benefit from the T-shaped turnaround.
- Highly developed areas desiring a solution to the urban heat island effect.

**Advantages**

- Cul-de-sac designs like those suggested here result in less management of stormwater runoff and reducing the impact on downstream water bodies.
- Planted cul-de-sac islands are attractive amenities.
- Less paving can lower development costs.
- Reducing pavement lessens the urban heat island effect—the increase in air temperature that can occur when highly developed areas are exposed to the sun.
- Reducing pavement can help reduce the increased runoff temperature commonly associated with impervious cover.
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<th>Activity: Cul-de-sac Design</th>
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| **Limitations** | - City ordinances may not accommodate small radii cul-de-sacs, due to accommodations for emergency vehicles.  
- Hammerhead turnarounds require vehicles to make a three-point-turn to exit.  
- Planted islands require more maintenance than paving during the first two to three years.  
- Difficulty in emergency vehicles ability to turn around. |
| **Installation Procedures** | - Avoid compacting soil in center island, till soil to a 2 foot depth.  
- Select vegetation that thrives on high rainfall and drought. |
| **Design Criteria** | - Widen rear pavements in cul-de-sacs to ensure easier turning, especially for emergency vehicles.  
- Islands should be maintained and vegetation planted for the appropriate soil type.  
- Include an unpaved, depressed island, using whatever radius will allow an appropriate road width. |
| **Construction Criteria** | - During paving, care should be taken to avoid compacting soil in center island. Should compaction occur, it may be necessary to rip or till soils to a depth of 2 ft.  
- Choose plants that will thrive when rainfall is high, and survive droughts without watering. |
| **Maintenance** | - Cul-de-sac island planting areas must be weeded monthly during the first two to three years. After that, weeding once or twice a growing season may suffice for maintenance. |