

## **Internal Circulation in Land Developments**

Internal site design is probably the most neglected discussion point in access management. It would be natural to think that access management concerns stop at the roadway right-of-way line, but in fact they carry through into the property that is provided with access.

### **Why is internal site design important?**

The movement of traffic into and out of properties can be dramatically affected by the internal design for on-site circulation. The internal design of circulation on a property may help or hinder traffic turning off or onto an arterial street. This in turn affects the speed differential between turning and through traffic.

### **What is the best way to design for internal circulation?**

The internal circulation of a land development functions well when it is designed with respect to highway access point(s) rather than the building(s). Design should start from the outside in and finish with the parking and building. Very often, the opposite approach is taken. The circulation design of driveways and parking lots are done last. Here is the optimal internal circulation design approach:

1. Provide safe and reasonable access to and from the street to motorists and pedestrians.
2. Provide a reasonable transition between the access and the internal circulation, especially by making sure the driveways are wide and long enough.
3. Design the parking area and individual parking spaces.
4. Design the building footprint within the constraints of the internal circulation and the parking.

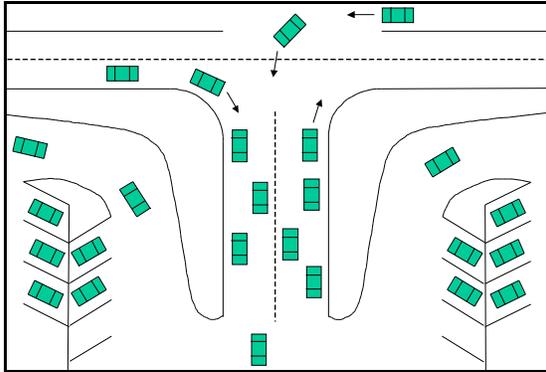
### **What is the “throat length” of a driveway and why is it important?**

The throat length is the distance between the street and the end of the driveway inside the land development. The following table provides recommended throat lengths:

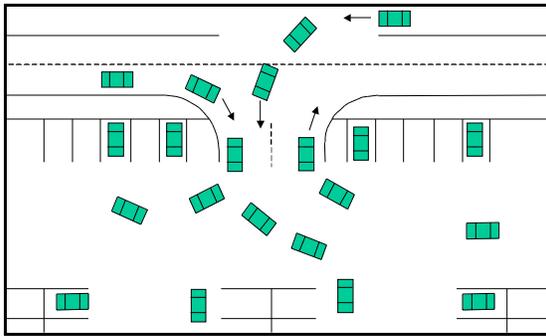
<b>Commercial Development Type</b>	<b>Recommended Driveway Throat Length</b>
Large and medium shopping centers with greater than 200,000 gross leaseable square feet in floor area	200 to 250 feet (about 15 car lengths)
Small commercial developments with signalized access driveways	80 to 90 feet (five to six car lengths)
Small commercial developments with unsignalized commercial driveways	30 to 50 feet (two to three car lengths)

Source: Florida Department of Transportation.

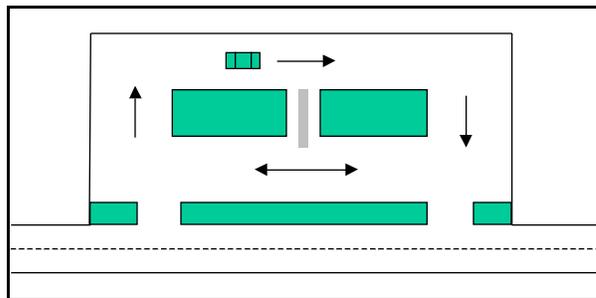
Inadequate driveway throat length is the number one problem that occurs when internal land development circulation is poorly designed. Note that, particularly in the last category of the table (small commercial developments with unsignalized driveways), short driveway throat lengths are quite common. Most commercial developments do not include a two to three car length driveway. This can lead to situations in which traffic circulation within the commercial development is chaotic. It can also lead to situations in which traffic turning into a development queues on the arterial roadway while waiting for vehicles to clear the short driveway. This is unsafe and may cause accidents.



Adequate throat length allows stacking, or queuing, to occur on site. This reduces driver confusion, traffic problems, and unsafe conditions.



Insufficient throat length and poor site planning can cause unsafe conditions and result in vehicles backing out onto the arterial, interrupting traffic flow.



Complete on-site circulation and cross access between adjacent properties allow vehicles to travel between adjacent businesses without having to re-enter the arterial.

**Are there issues that should be considered in conjunction with internal circulation?**

Driveway throat length is closely related to the following access management subjects: driveway turn radius, driveway width, driveway grade, shared/joint driveways and/or cross access, driveway-related crashes, and speed differential between turning vehicles and through traffic.