Access Management and Pedestrian Safety

Access management is usually promoted as a way to improve driving conditions for motorists. Clearly, access management techniques can lead to roads and streets that are dramatically safer and much easier and more pleasant to drive. However, research also indicates that several key access management techniques are just as valuable to pedestrians. These include

- reducing the number of driveways, particularly commercial driveways, within a given distance (per block or mile)
- providing for greater distance separation between driveway
- providing a safe refuge for pedestrian crossings with raised medians

How does access management help improve pedestrian safety?
Every sidewalk or path that crosses a driveway represents at least four potential pedestrian/vehicle conflict points. Reducing the number of driveways per block reduces the number of conflict points proportionally. Greater separation of driveways promotes pedestrian safety by reducing overlap of the operational areas of driveways. Drivers (and pedestrians) have a difficult time mentally processing more than one conflict point at a time; a greater driveway separation helps them concentrate on one problem at a time.

Safety research also clearly shows that raised medians at street intersections and/or at midblock are a very important design feature for pedestrians. As the table below indicates, roads with raised medians are roughly twice as safe for pedestrians. The intersection crash rate includes crashes that occur at intersections; the midblock figure includes all other crashes.

Roadway Type	Median	Midblock Pedestrian Crash Rate[a]	Intersection Pedestrian Crash Rate[b]
Undivided four lane	None	6.69	2.32
Five lane (TWLTL)	Painted	6.66	2.49
Divided four lane	Raised	3.86	0.97

Source: Oregon State University, 1998.
[a]Per million vehicle miles.
[b]Per million entering vehicles.

On the other hand, two-way-left-turn lanes (TWLTL) effectively reduce automobile crashes on arterial roadways carrying moderate levels of traffic but offer no refuge for crossing pedestrians. The pedestrian safety characteristics of five-lane TWLTL roads are similar to undivided four-lane roads. In order to be effective as a refuge for crossing pedestrians, a median must be at least four feet wide. A wide, depressed (no raised curb) grass median would be a somewhat less effective pedestrian refuge than a raised median.

What are some other corridor design features that help pedestrians?
Other corridor design and access management features that can help pedestrians include the following:

- Right-turn lanes for high-volume driveways. Right-turn lanes provide a dedicated space for vehicles to decelerate and turn using a minimum turn radius. This reduces turning speeds into driveways and allows narrower driveway crossings for pedestrians.

- Sidewalk setbacks. Sidewalks located several feet from the street protect pedestrians by separating them from the traffic flow. If the buffer strip is of an adequate width, drivers can pull completely out of the traffic stream before yielding to a pedestrian. In addition, a landscaped or other clearly marked buffer helps to visually define sidewalk and driveway locations.

- Clear zone. A clear zone free of visual obstructions such as signs, large trees and bushes, or parked vehicles allows pedestrians to be seen by drivers and to see oncoming vehicles.

- Flat cross grade. A flat sidewalk cross grade improves pedestrian safety and is required by the Americans with Disabilities Act (ADA).

- Signalized midblock crossings. Where feasible, midblock pedestrian crossings can reduce crashes, travel distance, and inconvenience, especially if the distance between signalized intersections is long (0.5 mile).

A pedestrian-unfriendly corridor: high driveway density, poor sight lines, sidewalks next to the street, and no refuge for crossing pedestrians.

Pedestrians using a raised median as a crossing refuge along Lincoln Way near Iowa State University in Ames, Iowa.