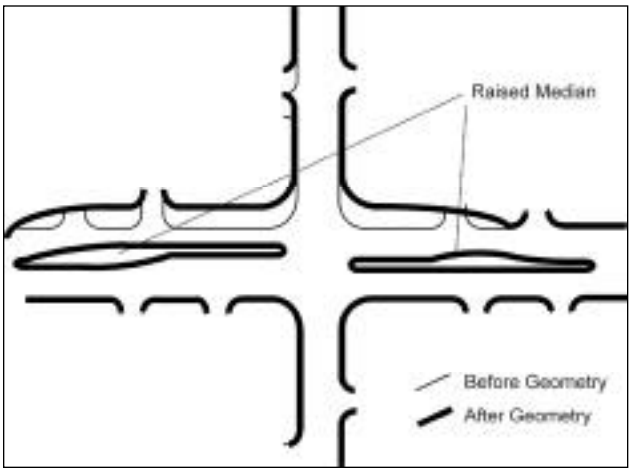
Raised Medians at Intersections

Raised medians with left-turn lanes at intersections offer a cost-effective means for reducing accidents and improving operations at higher volume intersections. The left-turn lanes separate slower turning vehicles from through traffic and provide a protected space for these vehicles to decelerate and turn. The raised median prohibits left turns into and out of driveways that may be located too close to the functional area of the intersection.



The above retrofit project shows the installation of a raised median with left-turn lanes at an intersection. The project was conducted in conjunction with a program for managing access to driveways located within the functional area of the intersection. In this example, some driveways were closed, consolidated, and cleared away from the intersection.

When are raised medians at intersections most effective?
Raised medians at intersections may be most effective in retrofit situations where high volumes of turning vehicles have degraded operations and safety, and where more extensive approaches would be too expensive because of limited right-of-way and the constraints of the built environment.

Because raised medians limit property access to right turns only, they should be used in conjunction with efforts to provide alternative access ways and promote driveway spacing objectives (driveways should not be located too close to the intersection or other driveways). To minimize the potential for any negative business impacts, affected businesses and property owners should be involved in the project throughout the planning, design and construction phases.

What is an example of an intersection that has benefited from raised medians?
A raised median located at the intersection of US Highway 18 (4th Street SW) and Pierce Avenue in Mason City, Iowa, decreased crashes by almost 40 percent during a three-year period following its completion in 1991. The project also involved changes in the number and configuration of commercial driveways. The intersection had become one of the state's top 100 improvement candidate locations. Turning traffic, both at the intersection and at commercial driveways located within the functional area of the intersection, was the major reason for the high crash rates. The left-turn lanes protected left-turning

vehicles from rear-end collisions by allowing them to diverge from through traffic at a relatively low *speed differential*. The raised median separated opposing traffic and reduced traffic *conflict points* by eliminating left turns into and out of driveways located near the intersection. The improvement in safety and traffic flow took place even though traffic volumes increased almost 16 percent after the project was completed.

What are other design considerations of raised medians at intersections?

- The length of the turn/deceleration lane. Turn lanes must be long enough to allow safe deceleration and provide storage for turning vehicles—that is, prevent queuing vehicles from backing up into the travel lanes.

- The minimum width of the median at the "nose." Very narrow median noses are difficult to see, especially at night and in inclement weather. A width of six to eight feet is preferable and provides a safe refuge for pedestrians.

- Visibility of the median. Carefully selected landscaping may be the most effective way to provide excellent visibility of the median, especially where the median islands begin. Reflective paint tends to wear and lose its reflectivity because of weather.

- The length of taper. The length of taper, or the portion of the median opening that begins the transition to the turn lane, is generally based on the approach speed: the faster the speed, the longer the taper.

- Related issues. Related issues include continuous raised media, comparison of raised medians and two-way left-turn lanes, functional areas of intersections, dedicated left and right turning lanes, speed differential between turning vehicles and through traffic, and corner clearance.

Raised median at intersection of University Avenue and 63d Street in Des Moines, Iowa. Land use at corner is primarily commercial.

Raised median, landscaped with brick paving, at intersection of Douglas Avenue and 72d Street in Urbandale, Iowa. Adjacent land use is residential.