

Clear Zones, Utility Placement, and Lighting

Adequate clear zones with proper placement of utilities and sufficient lighting are essential components of well designed roadways. Proper design will help ensure sufficient sight distance and improve roadway operating safety.

What is a clear zone?

The American Association of State Highway and Transportation Officials (AASHTO) *Green Book* states that “a clear zone is used to designate the unobstructed, relatively flat area provided beyond the edge of the traveled way for the recovery of errant vehicles.” Utilities, structures, signs, trees, and other objects should not be located within the clear zone.

How wide should the clear zone be?

The width of this clear zone is influenced by traffic volumes, speed, and embankment slopes. AASHTO’s *Roadside Design Guide* can be used to determine appropriate clear zones for higher speed rural roads.

Because space for clear zones is generally restricted in urban areas, the Iowa Department of Transportation (Iowa DOT) recommends a minimum clear zone of 10 feet on reduced-speed urban arterials, with 12 feet desirable. The width of the clear zone is measured from the back of the curb. Where no reasonable alternative exists, the Iowa DOT allows above-ground utilities to be accommodated in the outermost 2-foot width of the right-of-way. Preferably, all objects should be located outside the minimum clear zone. If this placement is not practical, the Iowa DOT allows for “breakaway” objects, such as certain sign supports, within this area. In all cases, the edge of any object should be no closer than 1.5 feet to the back of the curb.



Wide clear zone with good lighting on 100th Street in Clive, Iowa. The sidewalk is well delineated, trees are located a good distance from the roadway, and utilities are underground.

Why are clear zones, utility placement, and lighting important?

Access management projects provide a good opportunity to improve clear zones and enhance roadside lighting (see photographs of Douglas Avenue). Attention to clear zones and lighting can reduce crashes and improve traffic flow by enhancing the visibility of other vehicles, pedestrians, and access points as well as provide a relatively safe space for vehicles that leave the roadway.

Proper design of clear zones and lighting can

- reduce roadway maintenance costs
- improve drainage
- provide space for snow removal
- assist in orderly roadside development
- delineate and protect pedestrian walkways
- delineate driveways and access points
- enhance roadside aesthetics
- reduce right-of-way requirements

Uniform, well designed streetlights and other hardware can be used to enhance roadside aesthetics and create a sense of community. Utility lines can be placed underground to eliminate them from view and reduce the need for utility poles. Signs can be removed from the clear zone and/or modified to make them less obtrusive. Landscaping can help delineate driveways, making it easier for motorists to locate driveway entry/exit points.



Wide clear zones on Douglas Avenue in Urbandale, Iowa. Utilities and fire hydrants have been set back a good distance from the roadway. Uniform, attractive lighting creates visual appeal.



Inadequate clear zones on Douglas/Euclid Avenue in Des Moines, Iowa. Utilities are located too close to the curb. Driveways and sidewalks, which have been blocked by snow and ice, are not well delineated.