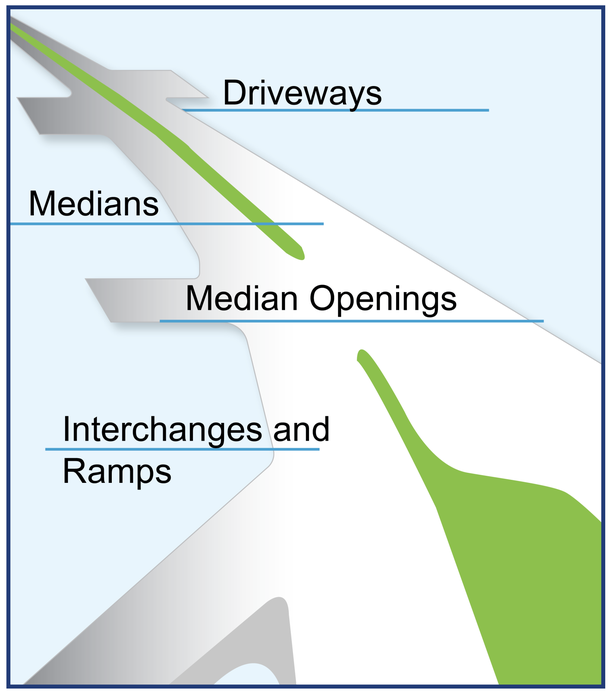
ACCESS MANAGEMENT

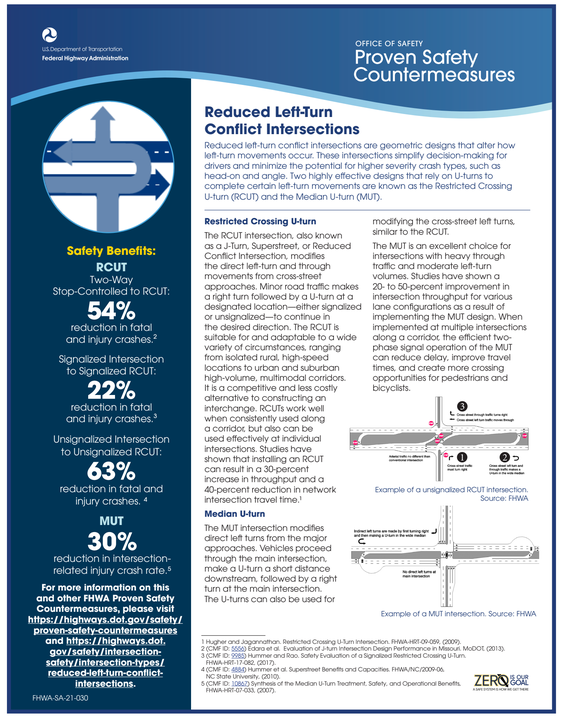
Access management is the coordinated planning, regulation, and design of access between roadways and land development. It promotes the efficient and safe movement of people and goods by reducing conflicts on the roadway system and at its interface with other modes of travel.

The purpose of access management is to provide access in a manner that preserves the safety and efficiency of the transportation system.



Conflict Point

- Areas where paths legally cross within an intersection
- Reducing the number of conflict points increases safety
- Per FHWA, converting to an unsignalized RCUT results in a 63% reduction in fatal and injury crashes



U.S. Department of Transportation
Federal Highway Administration

OFFICE OF SAFETY
Proven Safety Countermeasures

Reduced Left-Turn Conflict Intersections

Reduced left-turn conflict intersections are geometric designs that alter how left-turn movements occur. These intersections simplify decision-making for drivers and minimize the potential for higher severity crash types, such as head-on and angle. Two highly effective designs that rely on U-turns to complete certain left-turn movements are known as the Restricted Crossing U-turn (RCUT) and the Median U-turn (MUT).

Safety Benefits:

RCUT
Two-Way Stop-Controlled to RCUT:
54% reduction in fatal and injury crashes.[2]

Signalized Intersection to Signalized RCUT:
22% reduction in fatal and injury crashes.[3]

Unsignalized Intersection to Unsignalized RCUT:
63% reduction in fatal and injury crashes. [4]

MUT
30% reduction in intersection-related injury crash rate.[5]

For more information on this and other FHWA Proven Safety Countermeasures, please visit https://highways.dot.gov/safety/proven-safety-countermeasures and https://highways.dot.gov/safety/intersection-safety/intersection-types/reduced-left-turn-conflict-intersections.

FHWA-SA-21-030

Restricted Crossing U-turn

The RCUT intersection, also known as a J-Turn, Superstreet, or Reduced Conflict Intersection, modifies the direct left-turn and through movements from cross-street approaches. Minor road traffic makes a right turn followed by a U-turn at a designated location—either signalized or unsignalized—to continue in the desired direction. The RCUT is suitable for and adaptable to a wide variety of circumstances, ranging from isolated rural, high-speed locations to urban and suburban high-volume, multimodal corridors. It is a competitive and less costly alternative to constructing an interchange. RCUTs work well when consistently used along a corridor, but also can be used effectively at individual intersections. Studies have shown that installing an RCUT can result in a 30-percent increase in throughput and a 40-percent reduction in network intersection travel time.[1]

Median U-turn

The MUT intersection modifies direct left turns from the major approaches. Vehicles proceed through the main intersection, make a U-turn a short distance downstream, followed by a right turn at the main intersection. The U-turns can also be used for modifying the cross-street left turns, similar to the RCUT.

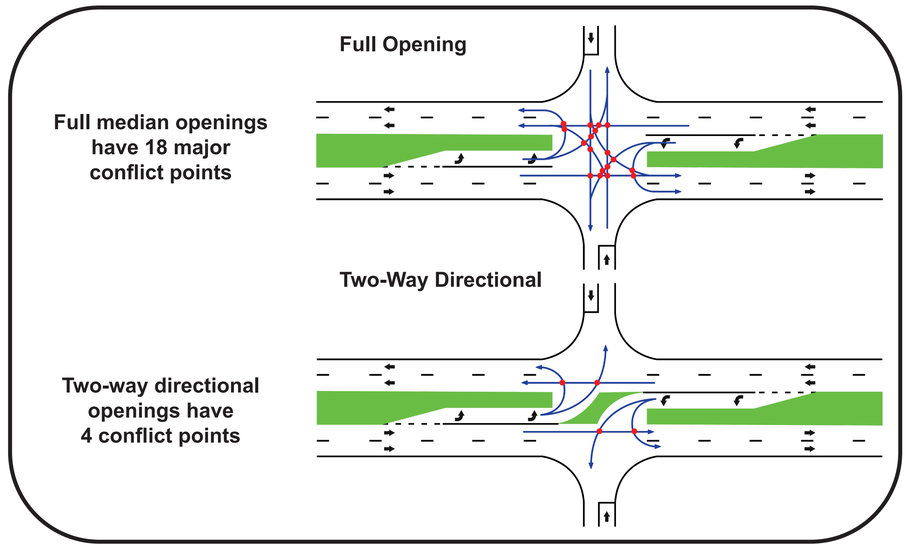
The MUT is an excellent choice for intersections with heavy through traffic and moderate left-turn volumes. Studies have shown a 20- to 50-percent improvement in intersection throughput for various lane configurations as a result of implementing the MUT design. When implemented at multiple intersections along a corridor, the efficient two-phase signal operation of the MUT can reduce delay, improve travel times, and create more crossing opportunities for pedestrians and bicyclists.

Example of a unsignalized RCUT intersection. Source: FHWA

Example of a MUT intersection. Source: FHWA

1 Hughes and Jagannathan. Restricted Crossing U-Turn Intersection. FHWA-HRT-09-069. (2009).
2 (CMF ID: 5556) Edara et al. Evaluation of J-Turn Intersection Design Performance in Missouri. MoDOT. (2013).
3 (CMF ID: 9980) Hummer and Rao. Safety Evaluation of a Signalized Restricted Crossing U-Turn. (FHWA-HRT-17-082. (2017).
4 (CMF ID: 4858) Hummer et al. Superstreet Benefits and Capacities. FHWA/NC/2009-06. NC State University. (2010).
5 (CMF ID: 10867) Synthesis of the Median U-Turn Treatment, Safety, and Operational Benefits. FHWA-HRT-07-033. (2007).

ZERO IS OUR GOAL



Unsignalized RCUT

63%

reduction injury/fatal crashes

Source: https://highways.dot.gov/safety/proven-safety-countermeasures/reduced-left-turn-conflict-intersections