

# Road diets can improve pedestrian safety without compromising capacity

Brad Neumann, Michigan State University Extension - June 10, 2013

Since pedestrian safety is a function of vehicle speed, and vehicle speed is a function of roadway width, 4-to-3 lane conversions, also known as road diets, can improve safety without compromising capacity of the roadway.

Many cities and small towns across the U.S. have four-lane roads, with two lanes of travel in each direction, bisecting the community. The roads are typically state highways or other primary roadways and they have relatively high traffic counts, compared to other streets in the community. They also tend to have wider travel lanes and higher operating speeds than other streets. Unfortunately, such roadways are often also characterized by frequent accidents and higher rates of pedestrian fatalities. Overall, narrower streets with lower speeds that are designed more like a 'main street' have the lowest rates of vehicle-pedestrian collisions, while streets with wider travel lanes and higher speeds have the highest rates.

The good news is that communities have options to improve the design of the roadway to reduce the incidence of accidents while not necessarily reducing the capacity of the roadway to move vehicles. One such approach is to put the roadway on a 'road diet'. A 'road diet' is the conversion of a four-lane roadway to a two-lane street that includes a two-way left turn lane. This is accomplished by removing a travel lane in each direction and restriping the roadway to delineate the two travel lanes and the shared turn lane. The 'extra' roadway width resulting from the elimination of an entire lane can be used to accommodate other modes of transportation, principally bikes, by striping dedicated bike lanes. Alternatively, on-street parking could be added without changes to the curb width, or sidewalks could be added if there is sufficient width to adequately separate pedestrians from cars.

Since the late nineties, when the concept was first introduced by Dan Burden and Peter Lagerwey in Road Diets: Fixing the Big Roads, thousands of communities across the country have implemented such improvements to their roadways. Communities have seen benefits that include reduced vehicle speeds, improved mobility and access, reduced collisions and injuries, and improved livability and quality of life.

In Michigan, the Genesee County Metropolitan Planning Commission has taken leadership to put more than 19 miles of roads on road diets, thereby converting them from four-lanes to two-lanes with a turning lane. Vehicle crashes on the roads have been reduced between 15 and 47 percent, according to the Michigan Department of Transportation (MDOT (Michigan Department of Transportation)).

A Michigan Department of Transportation report states that road diets do not result in increases in delay for roads with average daily traffic of less than 10,000 vehicles per day. If average daily traffic volume was the only measure communities cared about, the application of road diets might then be rather limited. However, in an urban environment, pedestrian safety is a principal concern and the MDOT (Michigan Department of Transportation) report also states that in all applications road diets result in lower crash frequencies.

For more information about road diets, explore the additional resources below or contact a Michigan State University Extension land use educator at the Land Use Education Services page.

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