

Narrowed Vehicle Lanes

Description

Vehicle lane widths in urban areas are commonly set between 3.3 to 4.0 metres. Reducing urban vehicle lanes widths to between 2.75 to 3.0 metres, however, has numerous safety and practical benefits.

How It Works

Narrower lanes influence drivers' perception of their margin of error, causing them to slow down. Reducing speeds, meanwhile, increases the objective margin of error, while also making crashes less severe when they do occur.

Reducing lane width can also help create space for the implementation of other road safety measures.

Evidence of Effectiveness

A study by Mbatta and his colleagues found that changing the outer lane width of a multi-lane urban road led to a CMF that has the following functional form noted below, where $x_{outside}$ is the new outer lane width (in feet). This function is applicable to all crash types and severity levels.

$$CMF = e^{-0.36(x_{outside}-12)}$$

Several studies have found that narrower roads and lanes lead to slower vehicle travel speeds.

One study found that where lanes had been narrowed from 12 feet (3.66 metres) to 9 to 11 feet (2.75 to 3.36 metres), there were fewer fatal and injury crashes, or that the number of fatal and injury crashes remained unchanged.

A study commissioned by the City of Surrey found that the reduction of travel lane widths on some of the city's arterial roads resulted in 13 to 20 km/h reductions in speed. The narrower lanes did not adversely affect drivers' lane control, meaning cyclists and other vulnerable road users were not placed at greater risk of crashes with errant vehicles.

Typical Implementation Considerations

Narrowing or removing vehicle lanes can provide more space for implementing other measures, such as **protected bicycle lanes, reduced pedestrian crossing distances, smaller corner radii, or wider sidewalks**. Municipalities may also install 2.10 to 2.75 metres demarcated parking lanes to help indicate to drivers how close they are to parked vehicles.

