NCDOT Traffic Safety Unit Programs

Synchronized Streets Evaluation

NCDOT completed a safety study on the conversion of 93 two-way stop controlled intersections to un-signalized synchronized street intersections across the State.

Background

The study defines a synchronized street (depending on the configuration, also known as a superstreet, directional crossover, restricted crossing U-turn (RCUT), or J-turn) as an intersection where a direct left turn and through movement have been prohibited by concrete channelization on the minor leg(s) and/or the major leg(s). Where these movements are prohibited, travelers who want to cross or turn left at the intersection must first turn right and then make a U-turn to return to their desired route.

Aerial view of a typical study site

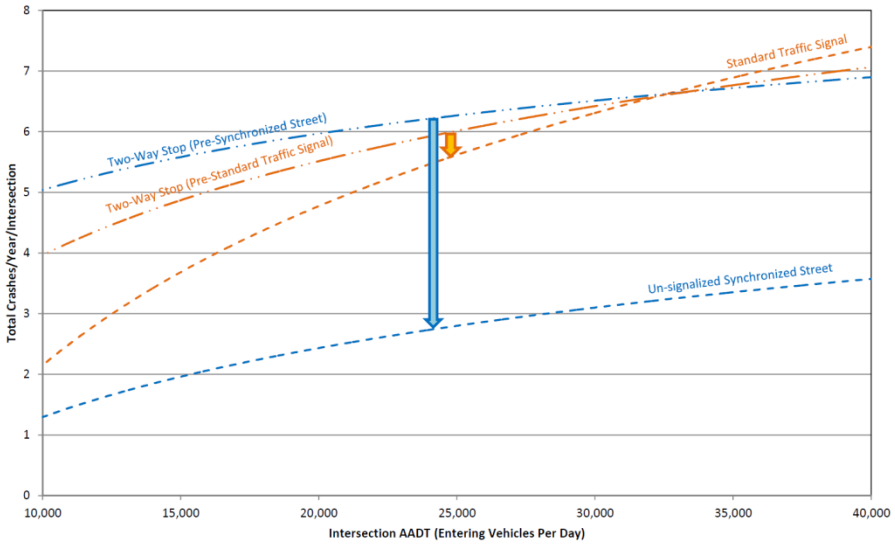
The un-signalized synchronized streets included in the analysis were installed from 1997 to 2012. Over 80% of the study sites eliminate through and left movements on the minor road alone (example shown above). The remaining sites eliminate through and left movements on a combination of the main road and minor road, or on the major road alone.

The purpose of the evaluation is to measure changes in total intersection crashes; fatal and injury crashes; and frontal impact crashes after intersections were converted to synchronized streets. We also compare the safety results to a set of 28 similar two-way stops converted to standard traffic signals.

Results

The overall results at the 93 study sites indicate a:

- 59% Reduction in Total Crashes,
- 71% Reduction in Fatal and Injury Crashes, and
- 80% Reduction in Frontal Impact Crashes.
- Also, unlike a set of standard traffic signals, the reductions in crashes remain strong across a range of intersection volumes.



Unlike a set of comparable standard traffic signals, sites converted from two-way stop control to un-signalized synchronized streets generally demonstrate large total crash reductions across a range of intersection volumes.