Effects on compliance of a HAWK signal in Las Vegas

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Abstract

In 2010, 806 crashes involving pedestrians occurred in Nevada; 36 were fatalities and 796 were injuries. Although numerous pedestrian safety countermeasures exist in Las Vegas, NV it was ranked as the 6th most dangerous large metropolitan area in the U.S. So, additional and more effective safety countermeasures were required to reduce pedestrian crashes in Las Vegas. High-intensity Activated crossWalk (HAWK) signal has been identified as a potential mechanism to reduce crashes. This study evaluates the effectiveness of such signal installed at E. Sahara Avenue, Las Vegas. Data was collected from videos captured by two cameras facing eastbound and westbound for two weeks; one week each for before and after operation of the signal. Statistical analyses (descriptive analysis and t-test) were performed considering different performance measures such as pedestrian waiting time at the curb. On an average, jaywalking occurrences dropped significantly from 32.6% to 8.2% and the total crossing time decreased by 5.3 seconds. In addition, motorist compliance, yielding to pedestrians attempting to cross the street, improved with 6.9% fewer non-yielding vehicles.

Introduction

Las Vegas is the 6th most dangerous large metropolitan area in the U.S. based on the Pedestrian Danger Index (PDI) calculated using ten years of pedestrian fatality data (2000-2009) and 2010 Census data on walking.

To mitigate pedestrian crashes, State of Nevada is implementing various pedestrian safety countermeasures.

HAWK signal is the pedestrian safety countermeasure for road crossings. It is first of its kind in Nevada and needs to be evaluated for its performance in Las Vegas. HAWK installation was done at E. Sahara Avenue, Las Vegas. The objective of this study was to evaluate the effectiveness of the HAWK (High-intensity Activated crossWalk) signal.

Site Location

Sahara Avenue is one of the busiest arterials and serves as a rapid transit corridor for buses.

Its eight-lane divided roadway with posted speed limit of 45 mph.

Curb-to-curb length of the crosswalk is 118 ft.

Conclusion and Recommendations

This study indicates that jaywalking, near-misses/crash, total pedestrian crossing time, and average number of motorists not yielding to the pedestrians were significantly reduced after the HAWK signal installed at Sahara Avenue in Las Vegas, Nevada.

Hence, the HAWK signal can be used effectively for safe and efficient pedestrian crossings.

Public awareness and education programs should be conducted to increase its usage because the HAWK signal is new for pedestrians and motorists of Las Vegas.