U.S. Department of Transportation

ITS for Highway Safety

The total number of estimated highway fatalities increased by 15% on rural interstates and 11% on urban interstates from 2020 to 2021, as reported by the National Highway Traffic Safety Administration (NHTSA).[1]

Rural Interstate Fatalities ↑ **15%**

Urban Interstate Fatalities ↑ **11%**

Advancements in making roadways safer with Intelligent Transportation Systems (ITS) are a key part of achieving USDOT's vision of zero deaths and serious injuries on the Nation's roads.[2]

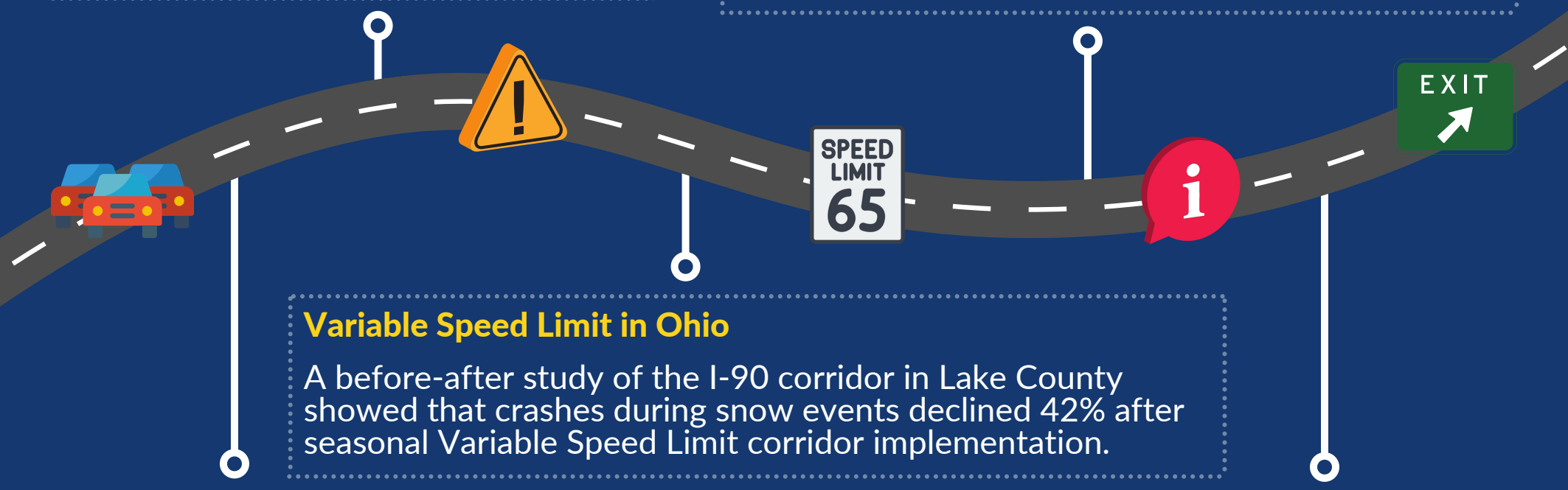
This document provides examples of ITS technologies deployed to **improve highway safety**. The featured benefits are based on past evaluations of ITS projects contained in the ITS Databases at: www.itsknowledgeresources.its.dot.gov. ***Click on each example to learn more.***

Dynamic Shoulder Lane in Michigan

Deployment of an Active Traffic Management (ATM) system with a dynamic shoulder lane in Ann Arbor reduced crashes by 17% and yielded a benefit-cost ratio of up to 3.01.

Integrated Corridor Management in New York

Integrated Corridor Management in the Buffalo - Niagara Falls metro region that included dynamic traveler information, freeway incident detection, service patrol, ramp metering, variable speed limits, queue warnings, and variable toll pricing was estimated to prevent $2.7 million in crash costs in a simulation study.



Variable Speed Limit in Ohio

A before-after study of the I-90 corridor in Lake County showed that crashes during snow events declined 42% after seasonal Variable Speed Limit corridor implementation.

Queue Warning System in Minnesota

In the Twin Cities, a queue warning system resulted in a 22% decrease in crashes and a 54% decrease in near crashes. The system seeks to prevent rear-end collisions by using intelligent lane control signals spaced every half-mile over every lane to warn motorists upstream.

Integrated Corridor Management in Iowa

Integrated Corridor Management in the Des Moines metropolitan area aimed to balance highway capacity improvements and roadway operations. It was estimated to reduce crash frequency by 10% and peak period vehicle hours traveled by 28%.

1. NHTSA, Early Estimates of Motor Vehicle Traffic Fatalities And Fatality Rate by Sub-Categories in 2021.
2. USDOT, National Roadway Safety Strategy.

Last modified on October 28, 2022