FHWA-SA-22-021

Advancing Speed Management Strategies with HSIP—2020

Saving Lives by Designing for Safe Speeds

KEEPING ALL ROAD USERS SAFE

In 2019, 26 percent of total traffic fatalities in the United States involved speeding.[1] Struck by a car going 50 miles per hour (mph), a pedestrian is highly unlikely to survive. However, reducing the vehicle's speed to 42 mph increases the pedestrian's chances to 50 percent. Furthermore, if we can drop the speed to 16 mph, that pedestrian has a 90 percent chance of survival.[2] Because higher speeds increase fatality rates, new approaches in speed management are needed to reduce roadway fatalities and increase safety for all road users. A key element of the Safe System Approach is road design that keeps speed at survivable levels if a crash occurs. Ultimately, the Safe System Approach aims to reduce fatalities on the Nation's roadway system to zero.

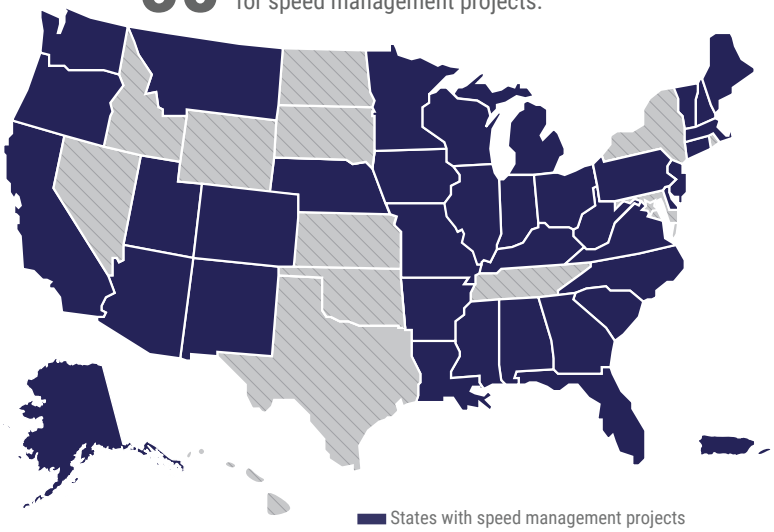
Speed management is an approach to setting appropriate speed limits, reducing speeding, reducing or mitigating the impact of speeding-related crashes, and achieving safe mobility.[3] The Highway Safety Improvement Program (HSIP) can help fund proven speed management countermeasures.

In 2020, States obligated more than $345 million in HSIP funds to 303 projects that help manage roadway speed.

This figure represents roughly 14% of the $2.4 billion total HSIP funding.

HSIP in 2020

38 States used HSIP funds for speed management projects.



States with speed management projects

5 states used **30%** or more of obligated HSIP funds for speed management: New Hampshire (64%), Minnesota (40%), Maine (33%), Nebraska (32%), and Massachusetts (30%).

ROAD DIETS

Roadway reconfigurations—or "Road Diets"—typically convert four-lane roadways into three-lane roadways with a center two-way left turn lane. Reducing through-lanes calms traffic and helps vehicles travel at more consistent speeds. Road Diets are a proven safety countermeasure and can reduce crashes by as much as 47 percent.

For more information about Road Diets, visit https://safety.fhwa.dot.gov/provencountermeasures/road_diets/.

Approximately 75% of speed management projects were on roads owned by State Departments of Transportation.

There were an equal number (106) of speed management projects completed on urban and rural roads.

71% of HSIP funds were used for 162 speed management projects that converted existing intersection types to roundabouts.

This information comes from 2020 State HSIP reports. For individual reports, visit https://safety.fhwa.dot.gov/hsip/reports/.

[1] NHTSA "Traffic Safety Facts: Speeding" (October 2021), 1, https://bit.ly/3I26CHS.
[2] AAA Foundation for Traffic Safety, *Impact Speed and a Pedestrian's Risk of Severe Injury or Death* (September 2011), https://bit.ly/3oEgl02.
[3] FHWA, *Research and Development: Speed Management* (October 2020), https://bit.ly/3GUoVyy.

2020 HSIP-FUNDED SPEED MANAGEMENT IMPROVEMENTS

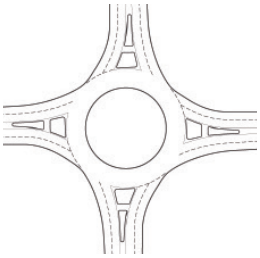
- Auxiliary lanes—modify free-flow turn lanes
- Congestion detection/traffic monitoring system
- Curve-related warning signs and flashers
- Modify control—modifications to roundabout
- Modify control—no control to roundabout
- Modify control—traffic signal to roundabout
- Modify control—two-way stop to roundabout
- Radar speed signs
- Roadway narrowing (Road Diet, roadway reconfiguration)
- Speed detection/truck warning system
- Traffic calming
- Change speed limit

Proven Safety Countermeasure

Roundabouts

In a modern roundabout, approaching drivers yield to the vehicles already circulating. Roundabouts can replace traffic signals as well as two- or all-way stop controls on both urban and rural roads. They are especially effective tools to help drivers safely transition from high-speed environments to low-speed ones. Converting a two-way stop-controlled intersection to a roundabout can reduce fatal and injury crashes by as much as 82 percent.

For more on roundabouts, see https://safety.fhwa.dot.gov/provencountermeasures/roundabouts/.



HSIP in Action

Oregon

Congestion, crashes, stalled vehicles, work zones, and weather can suddenly or unexpectedly change roadway conditions. Variable speed limits (VSLs) improve safety by helping drivers be more responsive to changing road conditions. VSLs can improve visibility, give drivers more time to stop safely, and reduce impact forces if crashes do occur.[4]

In 2016, the Oregon Department of Transportation (ODOT) used HSIP funds to install VSLs on a on a 30-mile stretch of I-84 where two mountain ranges frequently cause microclimates. Fog, blowing snow, and ice compounded issues from the road's high volume of truck traffic, a speed limit increase the previous year, and its curvilinear alignment.

To address these challenging conditions on I-84, ODOT installed cameras as well as pavement, air temperature/relative humidity, and traffic sensors to collect critical roadway data. ODOT uses these data to reduce and set speed limits in real time. Signs over the travel lane display the current speed limit and warn drivers about ice or low-visibility conditions.[5]

alert drivers about variable weather conditions that require speed reduction.

For more on this project, visit https://bit.ly/3whM8Gd. Along I-84, ODOT combines VSL and changeable message signs (CMS) to

[4] FHWA, *Proven Safety Countermeasures: Variable Speed Limits*, https://bit.ly/2ZVaMAR.
[5] Rudolph Price, I-84 Baker Valley Variable Speed Limit System (June 2017), https://slideplayer.com/slide/12256666/.

To find out how HSIP can help save lives in your community, contact your State DOT:

https://www.fhwa.dot.gov/about/webstate.cfm

ZERO IS OUR GOAL
A SAFE SYSTEM IS HOW WE GET THERE

U.S.Department of Transportation
Federal Highway Administration

Have an HSIP success story? Share your projects on Facebook, Twitter, and Instagram with #HSIPSavesLives.