



# Smart 25 Pilot Project

## About the project

The Colorado Department of Transportation is testing a new ramp metering system that is expected to reduce congestion and improve travel times on northbound I-25 between Ridgeway Parkway and University Boulevard. Generally, ramp meters time signals depending on the time of day to control the flow of traffic entering the highway. The new ramp metering system is expected to work more effectively, with signals updating in real time based on actual traffic conditions every 20 seconds. This is expected to result in faster travel times. The project installed vehicle detection devices along ramps that measure the number of vehicles, their speed, and the length of the line of vehicles entering the highway. This information is gathered for all 18 ramps along the corridor and used to control the timing of the ramp signals that allow vehicles to enter the highway with the goal of reducing stop-and-go traffic.

## Potential benefits

The project could reduce congestion, improve travel time reliability, reduce crashes and reduce emissions. This system has worked successfully in Melbourne, Australia. Traffic throughput increased by 25% during peak travel times, the equivalent of adding a lane at the fraction of the cost. This stretch of I-25 is similar to the corridor in Australia where such a ramp metering system has been very successful.

In exchange for a slight increase in wait times at on-ramps, drivers are expected to have a faster and more reliable trip along the corridor. If congestion forms due to heavy traffic entering the highway from I-225, for example, this system would temporarily slow the entrance of vehicles from the Belleview and Orchard ramps so that vehicles can continue to flow smoothly through the corridor without forming a bottleneck. The system is also designed to prevent on-ramp traffic from backing up onto local streets. This will be done by increasing the number of vehicles allowed into the highway when necessary.



# The Smart 25 Pilot Project is underway

## Testing schedule and traffic impacts

Beginning in the fall of 2021, the new ramp metering system was activated incrementally to provide an adjustment period for drivers and allow for system tweaks.

### Traffic impacts:

- Motorists may notice a change in the timing of the ramp metering lights at the end of the on-ramps to northbound I-25 between Ridgeway Parkway and University Boulevard. The light timing is expected to improve the flow of traffic as vehicles enter I-25.

- Most of the ramps continue to have two ramp metering signal lights, but there are some ramps that have an additional signal. Three new signals are installed at the westbound Lincoln Avenue, Dry Creek Road and westbound Arapahoe Road on-ramps to northbound I-25. The right shoulder lanes can be used when the ramp metering signals are on. The use of the part-time shoulder lanes allows more drivers to enter the interstate quicker, while preventing impacts to nearby local roads. The shoulder lanes can be used ONLY when the ramp metering system is activated.



- Three new ramp metering signals are also installed at the Orchard Road on-ramp to northbound I-25. Motorists are encouraged to use all three lanes, with the far right lane separated by a raised concrete barrier.



**Early January 2022**, the ramp metering system will be extended to I-225 and C-470 on-ramps to northbound I-25. Four ramp metering signals will be at the end of each ramp. Motorists will be able to use the shoulder lanes when the ramp meters are on.



New ramp meters will also be activated on the westbound E-470 on-ramp to northbound I-25.

The system will be closely evaluated. If results show traffic conditions improve, permanent deployment is possible.