



# Smart 25 Pilot 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. Existing 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 much 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 will be gathered for all 18 ramps along the corridor and be used to control the timing of the ramp signals that allow vehicles to enter the highway, reducing stop-and-go traffic. 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. Northbound I-25 between Ridgeway and University is similar to the corridor in Australia where such a ramp metering system has been very successful.

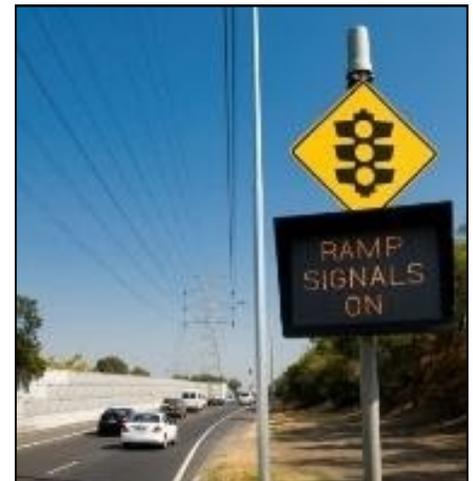


- If congestion forms due to heavy traffic entering the highway from I-225, for example, this system would temporarily slow the entrance of vehicles from the Belleview and Orchard ramps so that vehicles can continue to flow smoothly through the corridor without forming a bottleneck.
- The system is also 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.
- 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.

# The Smart 25 Pilot Project is the first of its kind in Colorado and North America

## Benefits

- Reduce congestion between the southeast business corridor and downtown Denver, Colorado's two largest job centers, without the cost of major construction
- Improve travel time reliability
- Reduce traffic-related crashes, fatalities and injuries
- Reduce emissions
- This system was developed and first implemented by the Victoria State Department of Transportation (VicRoads) in Melbourne, Australia. Results include:
  - ⇒ Increased traffic flow by 25%
  - ⇒ Improved average traffic speeds between 35% to 60%
  - ⇒ Improved overall travel time reliability between 150% (morning peak travel times) and 500% (evening peak travel times)
  - ⇒ Prevention of backups onto local streets
  - ⇒ All with minimal capital costs and no highway expansion



## Status/next steps

### Construction

Complete

Restriping, minor pavement widening and installation of vehicle detection devices and communications infrastructure along northbound I-25 between Ridgeway and University.

### Data Collection

Summer 2021

Collect data of current traffic volumes prior to switching the new ramp metering system on.

### Soft Launch

Summer to fall 2021

Incremental roll-out of the new system. Motorists may notice a gradual change in the timing of ramp meter lights. Necessary adjustments will be made for optimal performance.

### Full Operation

Fall to early 2022

The new ramp metering system will be in full operation and closely monitored. Depending on the outcome of the new system, CDOT will transition from pilot status to full implementation.