

Progress Made - Q3 2016 (July-September)

SAFETY

Safety Activities - Safety activities during the third quarter of 2016 included:

- Application Time - Together with statewide Transportation Planning Regions, CDOT recently requested local agencies throughout the state from small rural towns to Front Range counties to apply for federal Highway Safety Improvement Program (HSIP) funding assistance for infrastructure safety improvements. Roadway safety upgrades implemented through this recurring program have achieved significant reductions in the frequency of serious injury and fatal crashes on Colorado's transportation network. More information on the HSIP federal safety funding program is available at: <https://www.codot.gov/library/traffic/hsip/docs>.
- Town of Grand Lake - In another effort to accomplish the rural infrastructure strategies identified in the 2014 *Strategic Highway Safety Plan* (SHSP), nearly two dozen road signs are being replaced or installed in the Town of Grand Lake with bright, new signs made by CDOT's Sign Shop. Grand Lake picked up the signs in early September. The CDOT-funded *Grand Lake Local Agency Safety Study* recommended the signs.
- Tips for Aging Drivers - Following guidance listed in the SHSP's Aging Road User action plan, the CDOT Headquarters' Traffic & Safety Branch assisted CDOT's Office of Transportation Safety grantees during a Sept. 9 "Aging Driver's Key to Safety" event at the Wheat Ridge Seniors' Resource Center. During this event, a portion of the audience took part in a presentation on new roadway safety and operational improvements being deployed in Colorado, including:
 - Sign upgrades
 - Diverging diamond interchanges
 - Continuous flow intersections
 - Flashing yellow left-turn arrows
 - HAWK pedestrian-activated signals, for High Intensity Activated Crosswalk
 - Roundabouts



In this diverging diamond intersection at US 36 and McCaslin east of Boulder, left-turning traffic capacity is improved because left-turning traffic is separated from opposing through traffic. This configuration also reduces the potential for wrong-way entry onto ramps.



This continuous flow intersection at Madison Avenue and Eisenhower Boulevard (US 34) in Loveland is an example of another safety infrastructure strategy CDOT is employing. Continuous flow intersections such as this one result in less waiting for the red lights to change and increased traffic flow on both streets. Left-turning traffic from Madison doesn't have to cross the path of oncoming through traffic.



A pedestrian crosses a busy street at mid-block on Union in Lakewood west of the Federal Center with the help of a pedestrian-activated crosswalk signal.

MOBILITY

Bustang Projections Exceeded - CDOT's interregional transit express bus service, Bustang, celebrated its first anniversary on July 13, 2016. Bustang exceeded projections for ridership, revenue, and fare box recovery during its first year of service. Ridership outpaced Bustang's forecasted numbers by close to 15,000 passengers. Overall system revenue eclipsed projected sums by nearly 36 percent, with a fare box recovery ratio tallying 8 percent over initial estimates. During its first year, Bustang added a round-trip weekend service between Denver and Glenwood Springs and the RamsRoute service from Colorado State University in Fort Collins to Denver on Friday afternoon, with a return trip to campus Sunday evening during the academic year. Due to increasing demand on the West Line, CDOT also added a second daily run between Vail and Frisco and Denver beginning Sept. 11. Bustang fulfills a key responsibility to alleviate congestion and offer more travel choices for longer-distance commuters on the state's major corridors. For more information and a closer look at this new era of transportation, please visit www.ridebustang.com.

ECONOMIC VITALITY

Better Roads, Better Economy - It's widely accepted that transportation investments spur economic activity. But attributing just jobs created by building and maintaining transportation infrastructure doesn't tell the whole story. Now economic case studies for CDOT also show that the value of savings in time and fuel alone soar into billions of dollars for big transportation projects like rebuilding and expanding Central I-70 in Denver. The *Denver Business Journal* highlighted these return-on-investment case studies in its August 19-25 issue. The case studies used computer models (Transportation Investment Analysis Tool, fueled by TREDIS) to estimate the value of time and fuel savings across millions of motorists and the

new business and economic activity generated by a re-investment of time and energy that would otherwise have been spent sitting in traffic. The case studies look at the economic impacts of 12 major proposed road, transit, and bridge projects across Colorado spread over 25 years. Besides the Central I-70 project, the proposed transportation projects analyzed for the studies include these projects, among others:

- Expansion of I-25 in northern Colorado
- Reconfiguration of the U.S. 550/U.S. 160 connection in Durango
- Road widening and wildlife mitigation improvements on 12 miles of SH 13 north from Rifle
- Addition of express buses for 15 miles from Longmont to Boulder Junction and then on through Boulder's downtown

MAINTAINING THE SYSTEM

Innovative, Safe, Efficient - CDOT maintenance crews are always on the lookout for more efficient, safer ways of doing their work. The following maintenance innovations are detailed on the [Process Improvement](#) website for the third quarter, July through September 2016:

- Organizer Rack for Tools: Hope Tomlinson, a transportation maintenance II staffer in western Colorado, devised a safer way to store tools in the rear of a one-ton utility vehicle: an A-frame organizer rack made of one-inch square tubing. Attached to the inner and outer frame are a series of L-shaped brackets that can hold weed eaters, shovels, pipes, and signs. The device removes clutter - and tripping hazards - from the bed of the truck, while also saving time looking for things. The frame is mounted on top of the truck's utility box just under a crane.



L-shaped brackets hold tools atop truck utility box.

- Variable Message Sign Trailer: The messages about dangers ahead, adverse weather, or safe driving on variable message signs (VMS) are controlled electronically, but maintenance crews transport and set up the temporary VMS boards along our highways. In Region 2 headquartered in Pueblo, Patrol 27's Eddie Eiland, Robert Roscoe, Adam Reis, and Arley Garrison worked together to make the task of setting up the VMS signs easier and safer. They collected and attached scrap parts to secure the barrels and panels in place on the trailer used to haul the VMS signs, rather than in the truck bed. This allows for faster set-up of VMS boards for better communication with travelers and safer work conditions. Workers no longer have to climb in and out of the truck bed while handling bulky materials.
- Truck-Mounted Fencing Tool: Todd Natale of CDOT Region 2 invented a truck-mounted fencing tool that makes the often arduous task of replacing broken fencing along state highways easier. No longer do crews have to carry 80-100 pound spools of fencing material and move along the fence line by foot. Todd's tool consists of a spool of fencing wire placed on a custom-made rig at the rear of a standard fleet vehicle. The first section of new fencing is anchored to a post. The driver then begins pulling forward, and the tool uses the truck's motion to unspool the new fencing. Additional improvements extended the mount beyond the driver's blind spot. The mount also can swing to either side of a vehicle so that the driver can keep an eye on the material while operating the vehicle, preventing tangles. Todd has already built duplicate tools for maintenance crews in Region 4, headquartered in Greeley.



Fencing material is unspooled from the back of a truck, rather than unspooled by hand.