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I-25: The New Pueblo Freeway



ILEX STREET TO CITY CENTER DRIVE ▶

Colorado Department of Transportation

May 2017 eNewsletter

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Please forward/share this email with others who may have an interest in the Ilex Design-Build project.

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Current Design Work

- Landscaping & irrigation plans nearing completion

Current Construction

How to Merge Effectively

Of all the reasons for traffic congestion, lane closures tend to bring out the most anxiety and confusion because many of us don't understand the optimal way to merge.

Most people assume as soon as they see a notice of a lane closing ahead, they should immediately move over to the lane remaining open. People who wait until just before the lane ends to merge often receive honks, cars attempting to block their path, and abrupt braking for merging cars.

Surprisingly, those who wait to merge until just before the lane ends are the ones doing it right.

Merge points are specifically set up to move in a "zipper fashion" so traffic keeps flowing. Each car should "zipper" into the remaining open lane just before the point of closure.

Most driving educators don't provide instruction on the correct way to merge, so drivers that "followed the rules" and get over right away may feel cheated and get angry at drivers who wait to merge following the proper "zipper" method of merging.

- Deck replacement on the northbound I-25 bridge over Indiana Ave completed
- Work is nearing completion on the rehabilitation of Mesa Ave. over I-25
- Piers & pier caps for the CML bridge over the railroad complete & abutment construction underway
- Embankment operations between the I-25 bridges over Gruma & UPRR (railroad) underway
- US 50C Truss Bridge over Arkansas River rehabilitation
- Northern Ave bridge rehabilitation
- Clark and D Street cul-de-sac drainage & roadway construction
- Mechanically Stabilized Earth (MSE) walls from Gruma to City Center Drive
- MSE walls from CML to Gruma
- Storm drainage installation on the north portion of the project
- Bridge Deck construction on I-25 over Gruma
- Center piers & crash wall construction on Bridge over Phelps Creek Trails & UPRR Easement

Here is how it works: in the event of an impending lane closure, drivers should fill in both lanes equally. Just before the lane ends, cars should take turn filling in the open lane carefully and resume full speed.

According to traffic engineers, when motorists merge correctly in the zipper fashion, it is faster, safer, and can reduce backups by almost 40 percent on average!

Because the zipper merge only works as well as the number of people who are aware of it, CDOT is working to educate the traveling public.

"There is usually increased congestion through construction projects when vehicles merge into a single lane too soon, creating unnecessary backups prior to the work area," said CDOT Project Manager Jennifer Billings. "It may seem counterintuitive to many people, so we are providing "zipper merge" education to make it easier for traveling through some of our closures this summer. When a late merge, or zipper merge, works effectively, drivers shouldn't even need to put their foot on the brake at all," said Billings.

For a CDOT informational video about zipper merging, click [here](#).

How Do You Build Half an Interstate?

A priority of the I-25/Ilex Design-Build team has always been to keep traffic flowing on Interstate-25 as much as possible, but work still needs to happen. It's not an option to completely close I-25, so the team used a variety of methods to strategically plan and build the new interstate one half at a time.

Several feet of dirt are placed to build up the ground to the level of the future road and bridge. Since the new roadway is higher than the current roadway, the dirt needs to be placed above the current bridge.

Upcoming Construction

- Construction of the bridges over the UPRR resumes
- Northbound I-25 over Indiana roadway work
- Northern Phase 3 construction including sidewalk removal & deck repairs on the north side
- Northbound I-25 bridge over Santa Fe deck repairs
- Bridge over Phelps Creek Trail & UPRR easement
- MSE walls adjacent to I-25 from Phelps Creek Trail north to UPRR

[waiting for photo from Flatiron]

To stabilize this large amount of dirt next to the existing bridge, something called Gabion Baskets are used. Gabion Baskets work like a retaining wall and can be made with welded mesh or woven wire filled with rock. This allows the work to be completed without affecting the existing road.

Next, the construction crews begin building the new bridge abutments and piers to hold the new bridge girders. This process takes several weeks to complete, but is critical for building a strong bridge. Once the bridge abutments and piers are completed, crews place the new bridge girders. Following the girders, the new bridge deck and roadway pavement are placed which also takes several weeks to complete.

Upon completing the first half of the new bridge, the team shifts traffic onto it providing clearance to remove the old bridge structure and construct the second half of the new structure. This process allows for a brand-new portion of interstate, built one half at a time, with minimal impact to the traveling public.

Estimated completion for this process on the I-25/Ilex Design-Build project is estimated for 2018.

Project Schedule

Northbound I-25: Spring 2015 to Fall 2017

Southbound I-25: Fall 2017 to Fall 2018

Bridge Rehabilitations: Summer 2015 to Summer 2017

Anticipated Completion: Fall 2018

New D Street Extension Opens

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What the Project Involves

The Ilex interchange is the first segment to be constructed as part of the New Pueblo Freeway.

The project consists of replacing bridges on I-25 between Ilex Street and City Center Drive in Pueblo. Work includes rehabilitation of bridges on northbound I-25 over Santa Fe Avenue (US 50C), I-25 over Indiana Avenue, on the Santa Fe



An integral part of the I-25/Ilex Design-Build project opened last week with the new D Street Extension. The extension offers new and improved access to Runyon Field and surrounding businesses, and marks a milestone in the I-25/Ilex project.

Bridges 101: Understanding the Parts of a Bridge

We drive over bridges all the time, but have you ever taken the time to think about what really goes into them? There are many different types of bridges, but they all have the same three components - substructure, superstructure, and deck.

SUBSTRUCTURE

Beginning at the bottom, the substructure is similar to the foundation of a house. It often begins with long steel beams called piles driven into the bedrock. Or, if the ground can be excavated, huge augers drill holes so rebar cages can be inserted and filled with concrete, resulting in something called a caisson.

Avenue (US 50C) bridge over the Arkansas River, and on Northern Avenue and Mesa Avenue over I-25.

Structurally deficient bridges on I-25 over Gruma Drive, the Union Pacific Railroad, and Ilex Street will also be removed and replaced.

Interchange ramps will be lengthened to provide safer transitions onto and off of the Interstate, especially the 1st Street ramp to southbound I-25. Roadway curves will be softened to improve visibility and provide a smoother ride for motorists.

Local roadway improvements are included at D Street, Ilex Street, Bennett Street cul-de-sac, Clark Street cul-de-sac, and along Santa Fe Avenue.

Bridges will be widened at City Center Drive and I-25 over Santa Fe Avenue (widened to the median).

Noise abatement will also occur along some segments of I-25.

Project Partners

- Colorado Department of Transportation

Next, concrete is poured over the caisson or pile, followed by pouring a concrete footer on top of that. On a shorter-span bridge, the footer is called an abutment and is at each end of the bridge supporting the girders - similar to the walls of a house. If the span is wider than 100 feet, a pier or column is poured midway between the abutments, and a pier cap is added to the top to hold the multiple girders needed to cover the distance and provide the proper support.

SUPERSTRUCTURE

The superstructure is the portion of the bridge that supports the deck, and connects one substructure element to another. This includes the girders, or beams, of a bridge, which are similar to the ceiling joists on a house, supporting the load above.

If you stood underneath the bridge and looked up, you would see cross braces or diaphragms, which is a web of reinforcement between the girders.

DECK

Finally, there is the portion of a bridge that most people notice - the deck. The deck can be compared to the roof of the house. The deck is generally made of poured-in-place concrete, but can also be constructed with precast concrete panels. In addition to the roadway surface of concrete or asphalt, the deck also includes barrier or railings, medians, lighting, possibly sidewalks, and a few things you might not notice, such as drainage elements.

This concludes the Bridges 101 lesson. The next time you drive across a bridge, take a minute and think about the amazing structure that lies beneath!

That's a Lot of Dirt!

People don't even see a lot of the work that happens on the I-25/Ilex Design-Build project. Underneath the existing viaducts (bridges consisting of a number of short spans),

- Federal Highway Administration
- City of Pueblo
- Pueblo County
- The Community

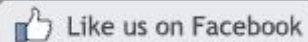
Funding

State of Colorado revenues from a safety fee placed on vehicle registrations have helped fund the Ilex Design-Build project.

Funding sources for the project:

Bridge Enterprise

RAMP (Responsible Acceleration of Maintenance and Partnerships)

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more than 500,000 tons of dirt has been placed to prepare for the future new roadway.



Photos showing progress of dirt build-up underneath I-25.

The reason is, it is more cost-effective to build and maintain shorter span bridges than to build large, multi-span bridge structures, or new viaducts.

Part of this process was determining the amount of dirt settlement after placement. The construction crews wrapped two layers of plastic (yellow in the photo) around each column with a layer of pipe soap lubricant in between so the wrap would slide without the weight of the dirt pulling down, or putting stress on the columns during settling. The team conducted daily surveys of each column to ensure there was no movement.

This area is now ready for when the contractor is set to place the new roadway, and all of this happened while motorists continued to drive overhead!

Additional Project Information

For more information about the I-25 Ilex Design-Build project, visit the [CDOT website project page](#). To receive future Ilex Design-Build project e-newsletters and construction notices, send an email to

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