North Area Transportation Alliance Board Meeting

October 27, 2022

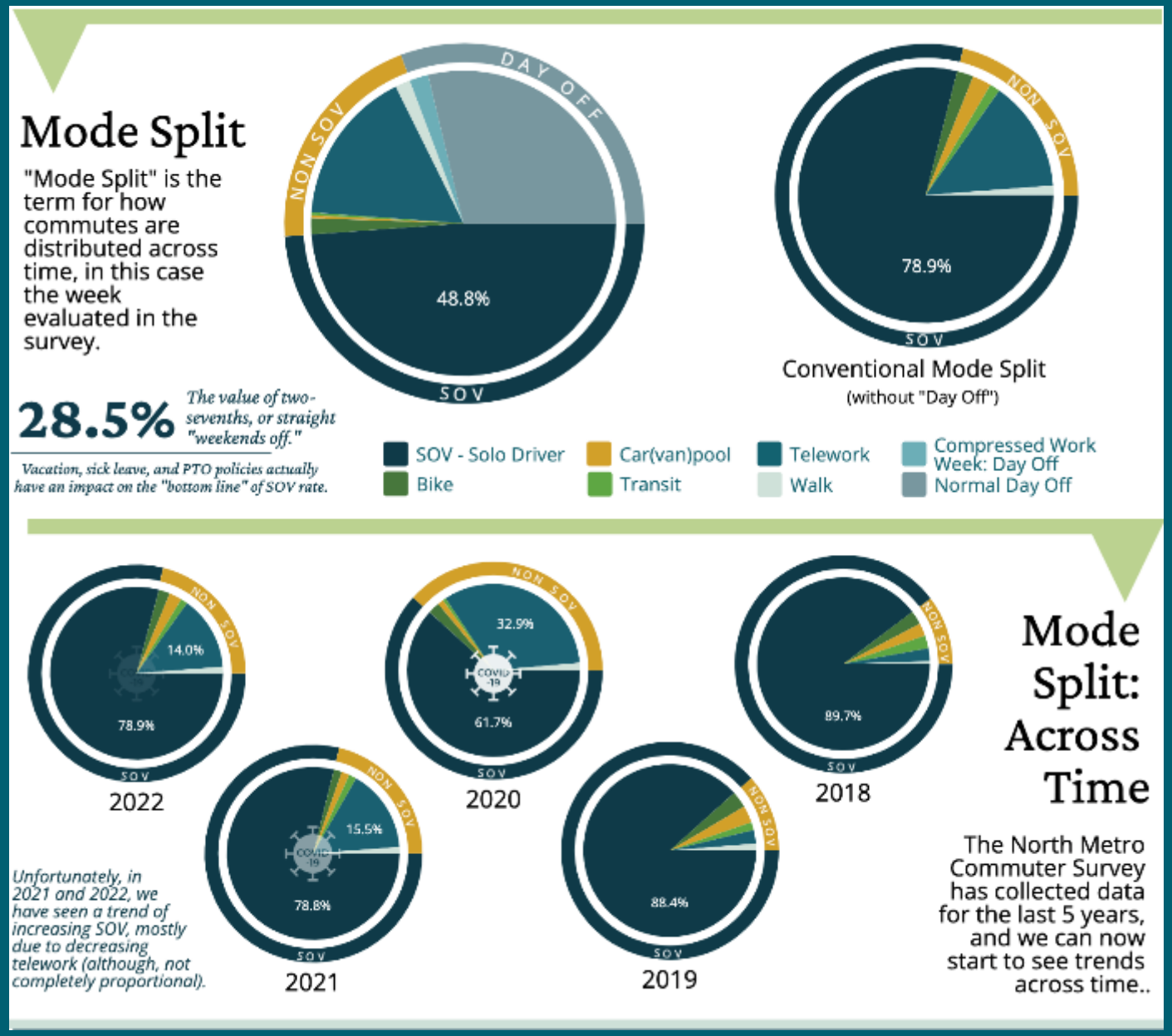
Agenda

- Welcome and introductions- Chair Lynn Baca
- Approval of September Meeting Minutes
- Discussion of 2023 officer election – Chair Lynn Baca
- Smart Commute update – Carson Priest
- CDOT Commissioner Update – Commissioner Stuart
- RTD Directors Reports - Directors Buzek, Cook, Davidson, Whitmore
- CDOT I-25 Virtual “Tour” – Andy Stratton, CDOT
- Other

Smart Commute Update

- 5th Annual Commuter Survey Preview
- eBike Phase II Deployment coming soon – 25 more eBikes in Adams & Broomfield Counties
- Community Outreach – RTD Station Outreach, WestyFest, more!
- 2nd Annual CDOT/ACT TDM Conference – 11/4

5TH Annual Commuter Survey



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I-25 Corridor - Commission Bus Tour Recap

NATA Presentation

October 27, 2022

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I-25, Segment 2 & 3 - Commission Road Trip

(I-270 to CO 7)

(Looking South from 88th Ave)

October 27, 2022

Plan to Deliver I-25 Projects on the 10-Year Plan

Segment 2 - 84th Ave to 104th Ave

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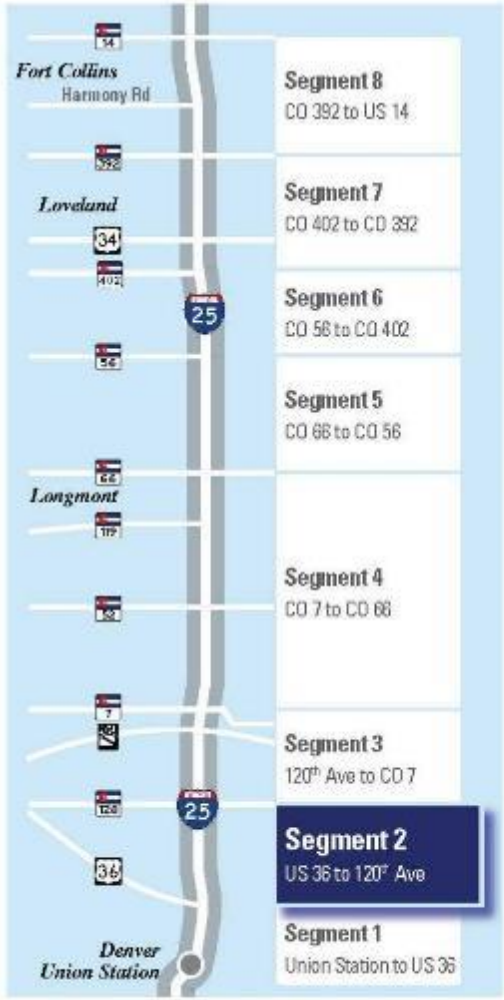
CENTRAL PROJECTS

Project Type	Total Est. Project Cost	Total Strategic Funding	Other Funding	Funded FY 19-22	Proposed FY 23-26 (We are here!)	Planned FY 27+	Project Status	Planning Project ID
Highway & Transit – Region 1								
I-25 North between 84th Ave and 104th Ave	H,T	TBD	$110M		$4M	$16M	$90M		2594, 2642



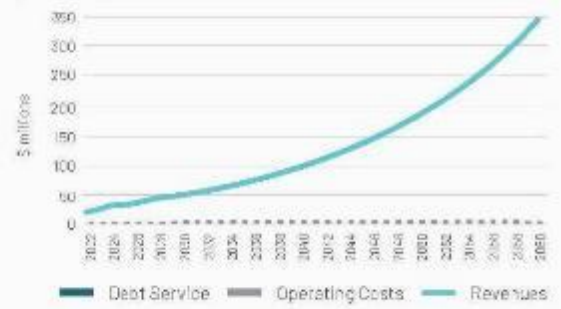
Segment 2 has identified $110 million of strategic funding in the 10-year plan and will be advancing $20 million in the next four fiscal years (FY23- FY26) to fund analysis of a project, or suite of projects, that supports a connected multimodal transportation system with consideration of a center loading transit station and addresses the long-standing bottleneck and safety concerns north of US 36 that results in stop-and-go traffic.

The Project will address:

- **Safety** - Fatalities and crashes within Segment 2 have increased since 2015 due to rear-end and weaving/side-swipe crashes associated with congestion. Solutions will seek to enhance safety and reduce crashes for the long-term given the high AADT in this stretch of 182,000.
- **Air Pollution** - Idling or slow-moving vehicles can lead to higher "hot spot" concentrations of tailpipe pollutants due to longer residence time (i.e. sitting in stop-and-go traffic). Solutions will be multimodal addressing the turbulence between freight, transit and SOVs.
- **Traffic Operations** - Solutions will address the lack in operational reliability due to the imbalance of lane utilization between the managed and general purpose lanes and limited options for incident response. Additionally, solutions will address short interchange spacing and the northbound grade that result in unsafe merging and weaving, causing conflicts with freight and transit.

Once NEPA is complete, CTIO and CDOT are committed to financing options (including but not limited to TIFIA) to deliver the identified project(s). Segment 2 has been open for tolling since July 2016 and Segment 3 since June 2020. Based on actual revenue collections and updated tolling and revenue forecasts, these Segments have more than enough capacity to cover debt service and support all ongoing operating costs.

Segments 2 & 3: Estimated Revenue, Debt and Operating Costs



Schedule

I-25, Segment 2

Existing and Projected 2040 Operational Deficiencies

What causes bottleneck delays?

Bottleneck delays occur on freeways because of many reasons, such as:

- Short or noncontiguous auxiliary lanes or acceleration lanes from on-ramps;
- Sections with high vehicle weaving movements between closely spaced on-ramps and off-ramps;
- Freeway sections and interchanges built many years ago to less efficient design standards and geometrics;
- Locations where the freeway loses a lane, also known as a lane drop;
- Steep upgrades/downgrades along the freeway;
- Tight curves that cause vehicles to slow down;
- Narrow lanes, or the perception of narrow lanes, that cause drivers to slow down as they approach the area (i.e. at tunnels, underpasses, or areas without shoulders);
- Joining of major roadways (i.e. traffic from one freeway merging with the traffic of another freeway); and
- Any combination of the above characteristics may contribute to a higher incidence of traffic crashes, which leads to more congestion (DRCOG, 2009).

A The southbound on-ramp vehicles at Thornton Parkway merging onto southbound I-25 create queues on I-25 that currently extend north of Thornton Parkway. By 2040 this southbound morning (AM) peak hour queue is projected to extend north of the 104th Avenue.

B The northbound evening (PM) peak hour merge and weaving interactions from the US 36 and I-270 ramps onto I-25 currently operate at LOS D. By 2040 increased travel demand is expected to reduce operation to LOS F.

C Buses exiting the Thornton Park-n-Ride at 88th Avenue create queues, slow traffic, and reduce vehicle through-put along I-25 when merging and weaving across northbound and southbound traffic into the Express Lanes from the bus-only on-ramps.

D The existing average AM peak hour southbound speeds range from 30 to 50 miles per hour (MPH) (on an incident-free day). By 2040 these speeds are projected to decrease to between 20 and 45 MPH. Morning AM peak hour southbound travel times between the 104th Avenue and 84th Avenue interchanges are projected to nearly double from 2 to 4 minutes in 2017 to 4 to 6 minutes in 2040.

E The existing average PM peak hour northbound speeds range from 25 to 45 MPH (on an incident-free day). By 2040, these speeds are projected to decrease to between 10 and 40 MPH. Evening PM peak hour northbound travel times from US 36/I-270 to 104th Avenue, are projected to nearly double from 6 to 8 minutes in 2017 to 10 to 12 minutes in 2040.

Existing Safety Facts & Concerns

I-25 Mainline, MP 217 - 223

Crash Data 2016-2020:

- Total Crashes: 4,092 (3,132 Property Damage Only, 853 Injury, 7 Fatal)
- Roughly 66% of all crashes occur SB and 34% in the NB
- Roughly 14% of all crashes include driver distraction as a contributing factor
- Roughly 10% of all crashes occur during adverse weather conditions
- Roughly 3% of all crashes involve drugs/alcohol

Distribution by most common crash types (enlarged graph on page reverse):

- 73% of total crashes are Rear-End crashes
- 18% of total crashes are Sideswipe Same Direction crashes
- 5% of total crashes are related to all types of barriers and crash cushions
- 4% of total crashes include all other types

Crash Data 2021 and 2022:

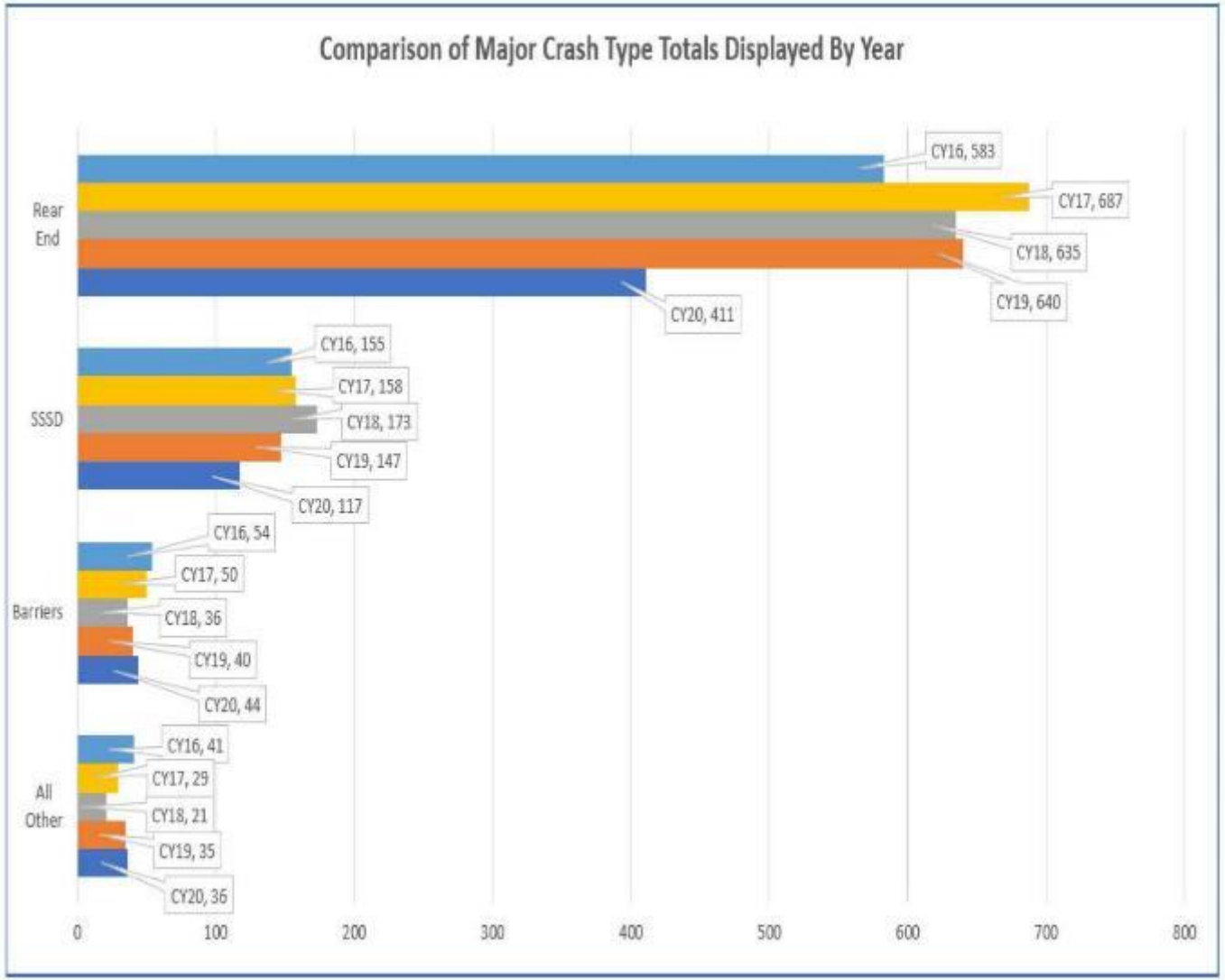
- 2021 crash data is presently being further evaluated in detail; however, at present, trends appear to be consistent in terms of the distributions described previously for this segment, both in this fact sheet as well as the originally completed RSA. Total crashes are roughly 906 for calendar year 2021.
- 2022 crash data is considered preliminary at this point and is presently going through the standard evaluation and data clarifying process to be employed in analyses.

Contributing Roadway Factors:

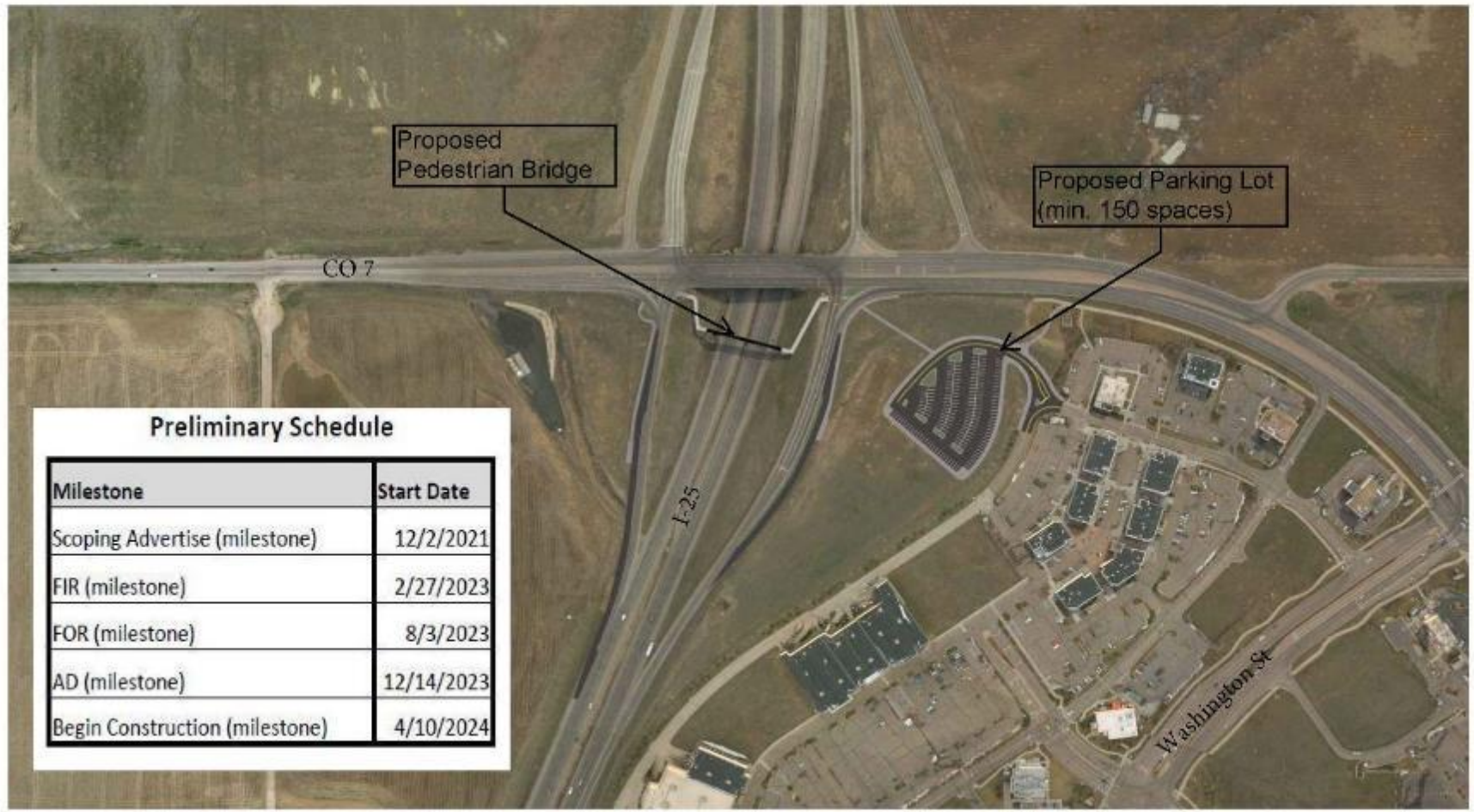
- Substandard Shoulders
- Narrow buffer between Express Lane (EL) & General Purpose Lane (GP) (Existing is 2', Minimum Recommended is 4', Physical Separation is Preferred)
- Topography, including horizontal and vertical curvature and interchange spacing
- Major vehicle weaving movements between interchanges and GP/EL's
- Heavy truck route (9%)
- 88th Ave Park-n-Ride bus operations adjacent to freeway
- Unlawful ingress/egress of Express Lane to avoid tolls and pass vehicles
- Limited enforcement capabilities on the segment due to geometric constraints, which increases risk to the traveling public & law enforcement.

Existing Safety Facts & Concerns

I-25 Mainline, MP 217 - 223



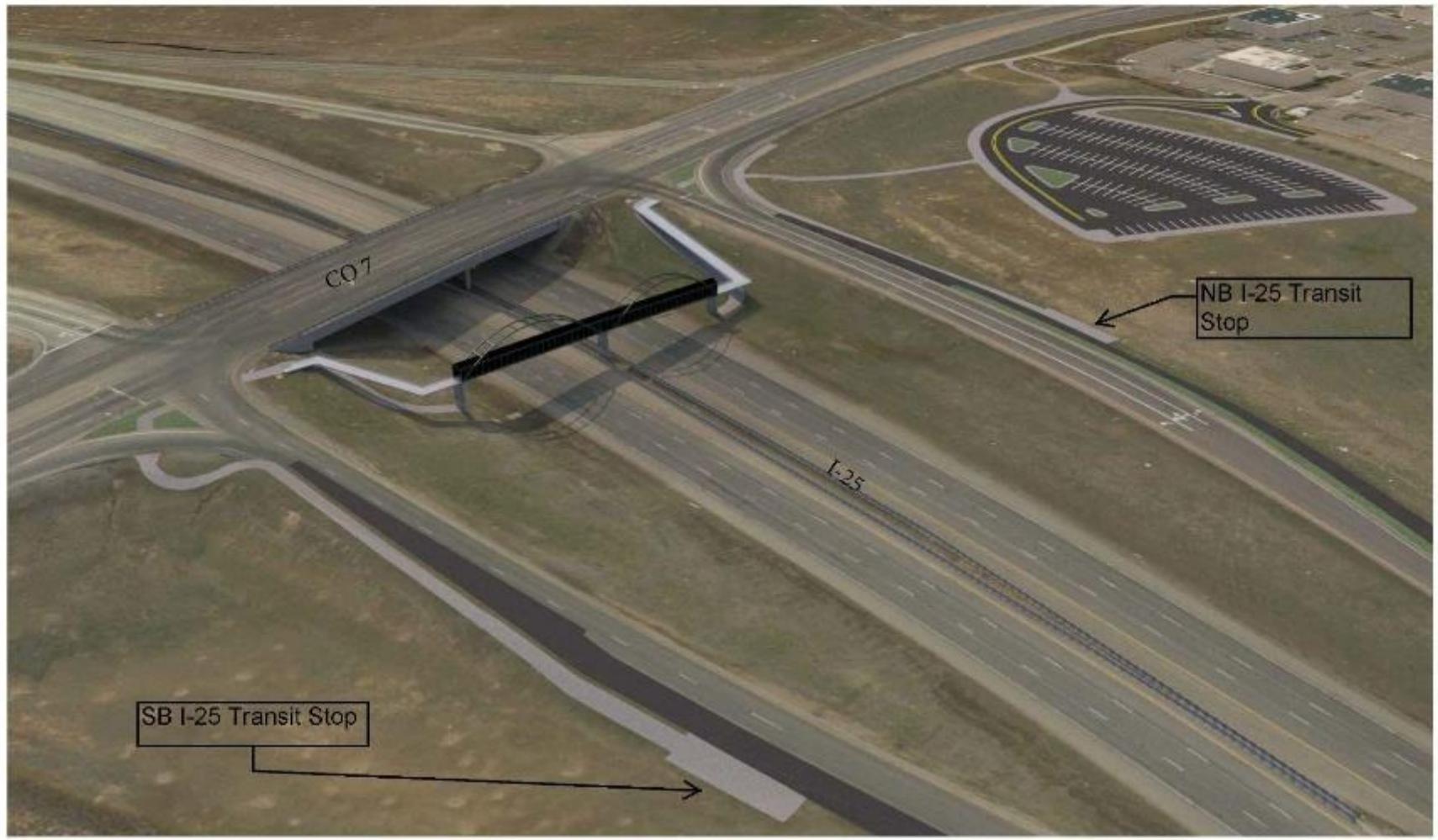
I-25/CO-7 Interim Transit Improvements



Preliminary Schedule

Milestone	Start Date
Scoping Advertise (milestone)	12/2/2021
FIR (milestone)	2/27/2023
FOR (milestone)	8/3/2023
AD (milestone)	12/14/2023
Begin Construction (milestone)	4/10/2024

I-25/CO-7 Interim Transit Improvements



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I-25 North Express Lanes: Segments 5 - 8 – Mead to Ft. Collins

I-25 North NATA Presentation

October 27, 2022

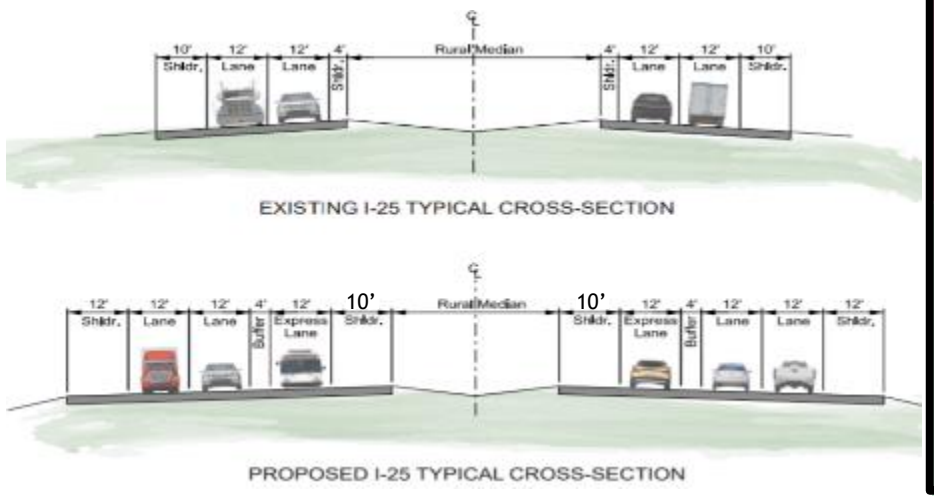
Corridor Scope
I-25 North: Denver to Ft. Collins

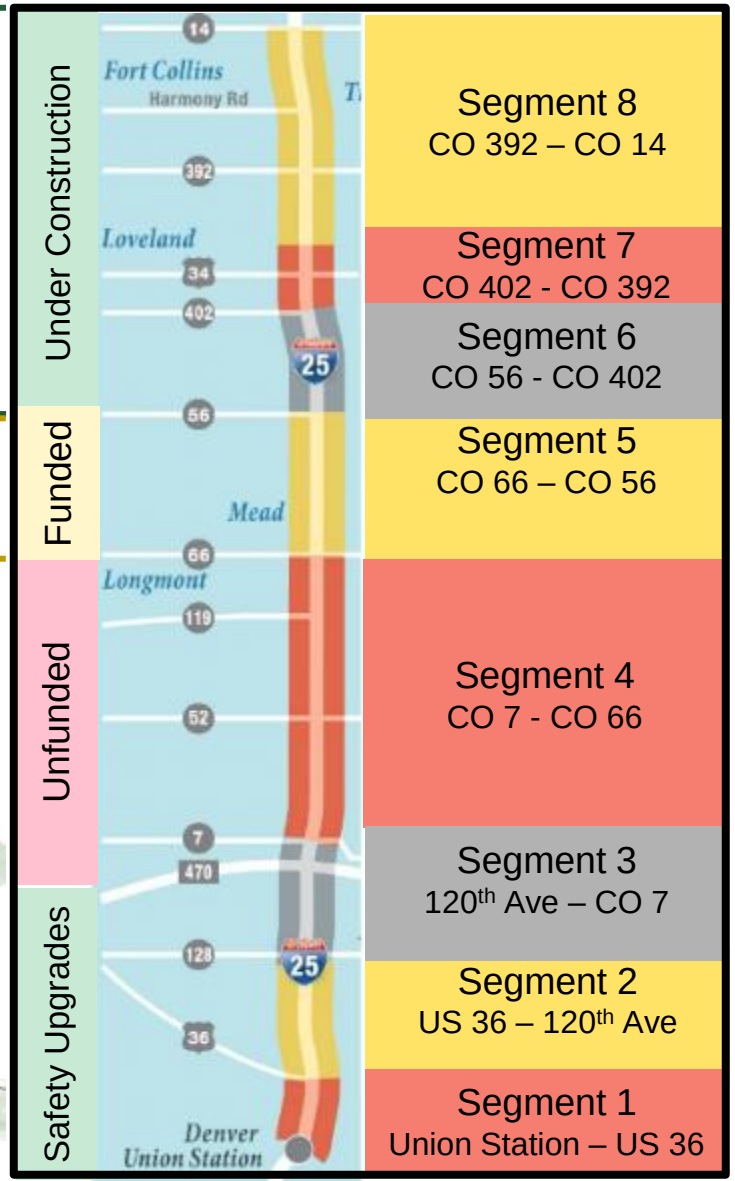
Active Construction:

- Segments 7&8 - DB Delivery
  - 14 miles of widening
  - ~$600M
- Segment 6 – CM/GC Delivery
  - 5.5 miles
  - ~$300M

Upcoming Project:

- Segment 5 – CM/GC Delivery
  - 6 miles
  - ~$400M





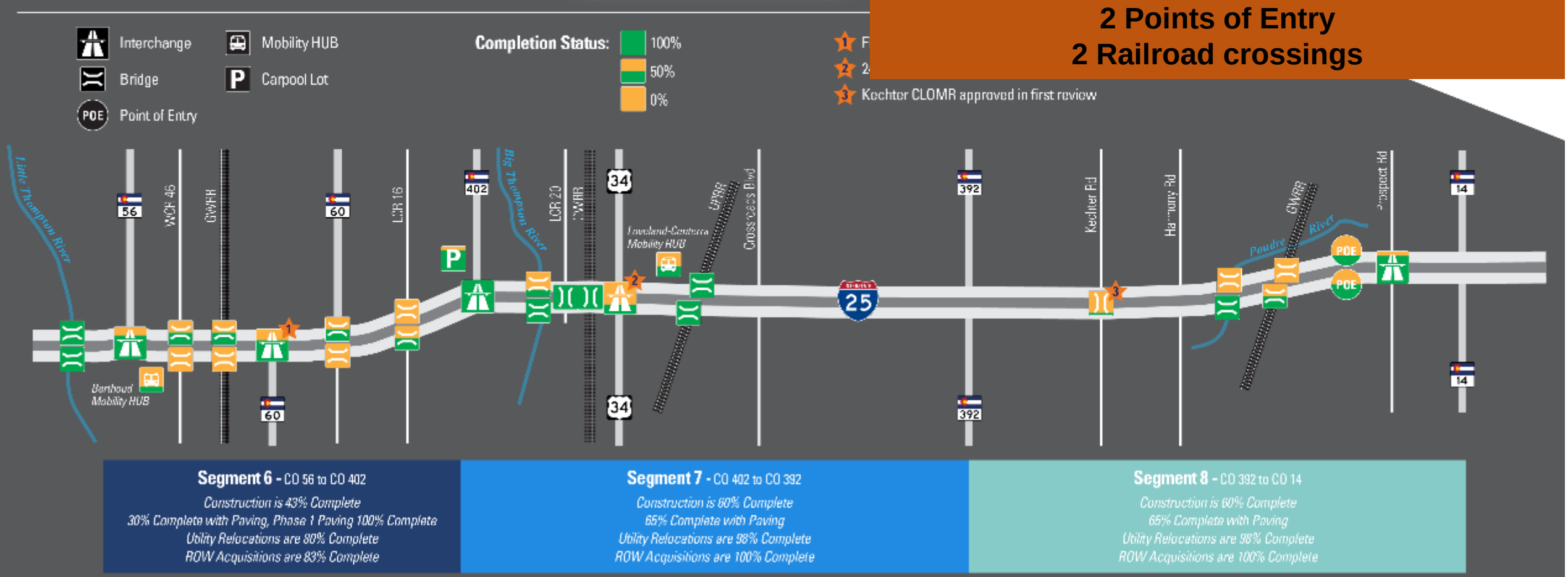
2021 Year in Review

I-25 NORTH EXPRESS LANES SEGMENT 6, 7, AND 8

BERTHOUD TO FORT COLLINS

Year in Review

~20 Miles
5 Major Interchange Reconstructions
2 Mobility Hubs
27 Bridges
2 Points of Entry
2 Railroad crossings



Segment 6 - CO 56 to CO 402

Construction is 43% Complete
30% Complete with Paving, Phase 1 Paving 100% Complete
Utility Relocations are 80% Complete
ROW Acquisitions are 83% Complete

Segment 7 - CO 402 to CO 392

Construction is 60% Complete
65% Complete with Paving
Utility Relocations are 98% Complete
ROW Acquisitions are 100% Complete

Segment 8 - CO 392 to CO 14

Construction is 60% Complete
65% Complete with Paving
Utility Relocations are 98% Complete
ROW Acquisitions are 100% Complete

2021 Year in Review

I-25 NORTH EXPRESS LANES SEGMENT 6, 7, AND 8

BERTHOUD TO FORT COLLINS

Year in Review

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EXPRESS LANES NORTH I-25
Johnstown to Fort Collins

$203,399,674 *with*
486,689 Labor Hours
436,478 Equipment Hours
Completed on Project

586 Subcontractors
142 DBE

1.2 Million Cubic Yards
of Embankment Earthwork

88,519 Square Feet
of walls

11,862 Square Feet
of Sidewalks & Bikeways

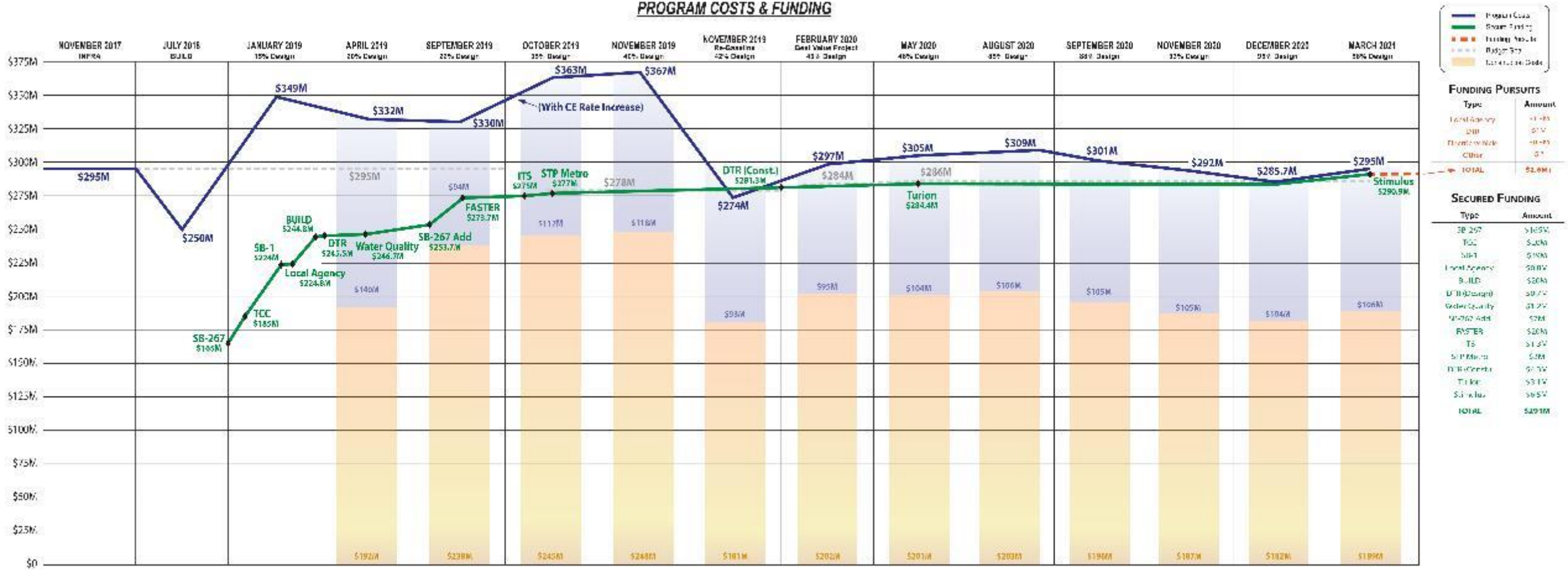
262,914 Square Yards
of Concrete Paving

61,627 Tons
of Asphalt

24,788 Feet
of drainage pipe

3 Water Quality Ponds
Constructed

The Funding & Budget Evolution
Segment 6



Project Wins, Innovations, & Savings

Pavement Alignment and Hybrid | Cost Savings & Innovation

- Shifted from EIS to optimized alignment to minimize ROW take and use existing subgrade, base, and pavement
- Implemented a composite typical section, instead of 12.5” concrete, using 3” asphalt overlaid with 8” of concrete

Railroad Bridge Widening | Innovation, Partnering, & Cost Savings

- Jacked, raised, and widened existing GWRR to maintain 17’ clearance
- **New bridge would have mandated a 23’ clearance, requiring entire mainline I-25 to be raised ~6’ costing a lot of money**

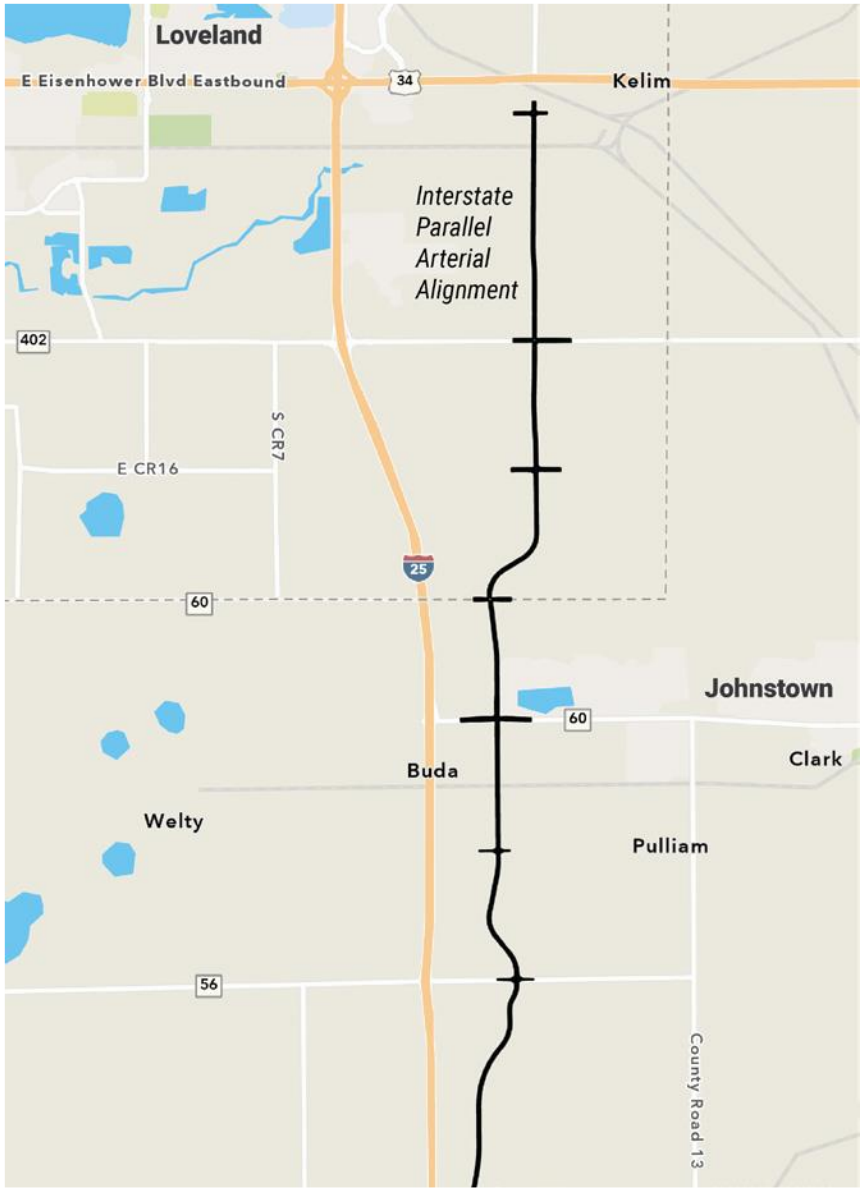
Project Wins, Innovations, & Savings

Frontage Roads | Innovation, Partnering, & Cost Savings

- Closed four miles of frontage roads from just south of SH 56 to LCR 14
- Replacing with a parallel arterial (High Plains Blvd)
- **Deleted ~143 acres of needed ROW**

Bridge/Cross Roads Savings | Cost Savings & Partnering

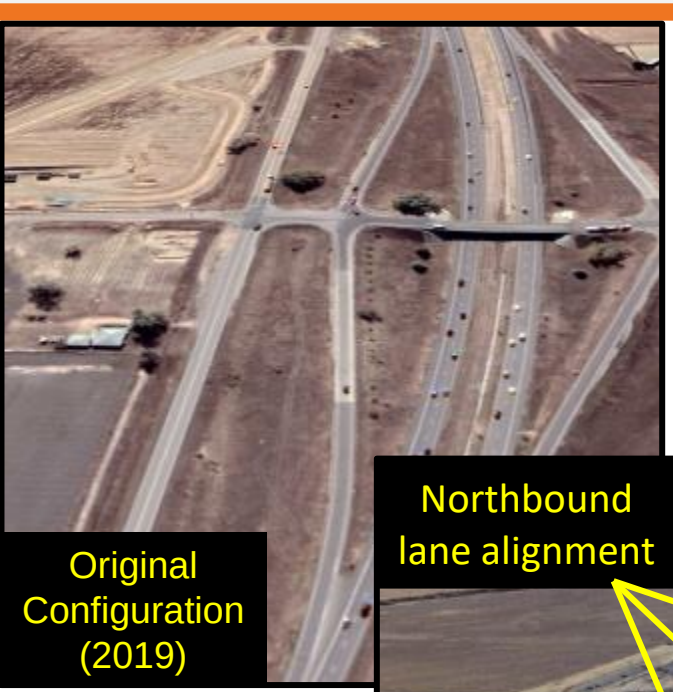
- Reduced local road bridge clearances from 16.5’ to 14.5’
- **Designed bridge to allow future lowering and widening**



CO 56 Construction
I-25 Segment 6 Update

- Most dangerous area on North I-25
- “Flipped” the interchange to correct vertical and horizontal curves

CO 56 Flip
I-25 Segment 6



Original Configuration (2019)

Right Before Opening (November 2021)

Final Rendering

Northbound lane alignment

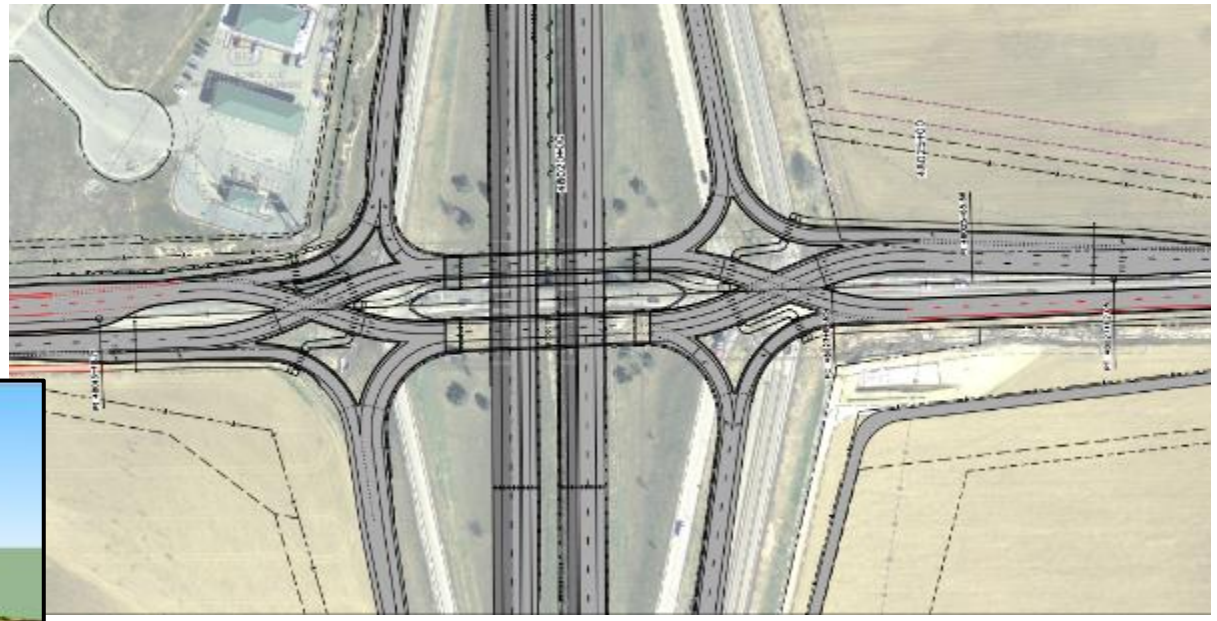
Right Before Closing 114 days (July 2021)

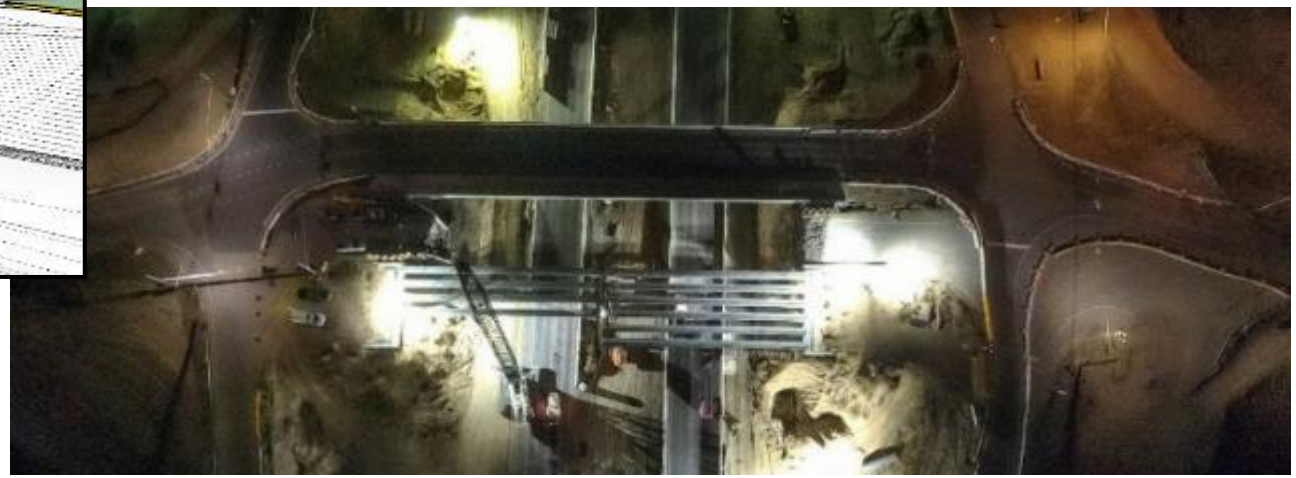
Current Configuration (August 2022)

CO 60 Construction
I-25 Segment 6 Update

CO 60 Interchange - Diverging Diamond Interchange

- Built two new bridges between old bridge to keep traffic flowing
- Johnstown is contributing money for the aesthetic improvements





CO 60 DDI
I-25 Segment 6

Original Configuration (2019)

June 2021

Current Configuration (September 2022)

Berthoud Mobility Hub
I-25 Segment 6

- 200 total parking spaces
  - 40 wired spaces to allow for future EV charging stations
  - 40 Carpool spaces
  - 450- 900 feet walking distance
- Multimodal design
  - 2 sawtooth bus bays for local connecting transit
  - Short-term parking for car share services
- Infrastructure
  - 2 bus shelters
  - 2 bike racks
  - Port-a-pottys
  - Trash service

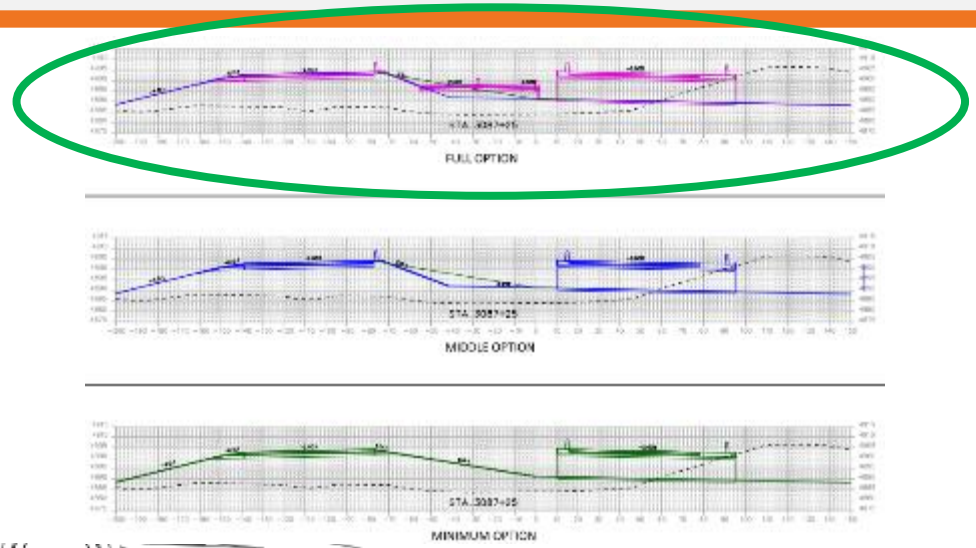
Berthoud Mobility Hub Funding Progression

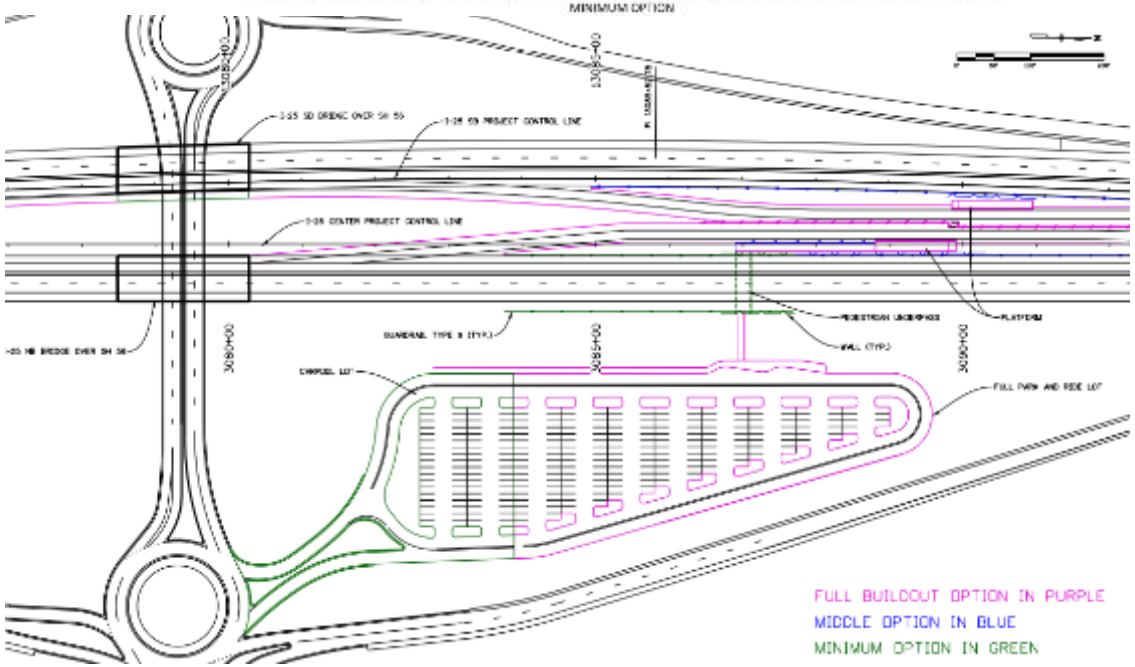
Funding

- DTR – Base Option
- Turion (Developer) – provided money to build Middle Opiton
- Stimulus money - made it possible to build entire hub

Opportunities

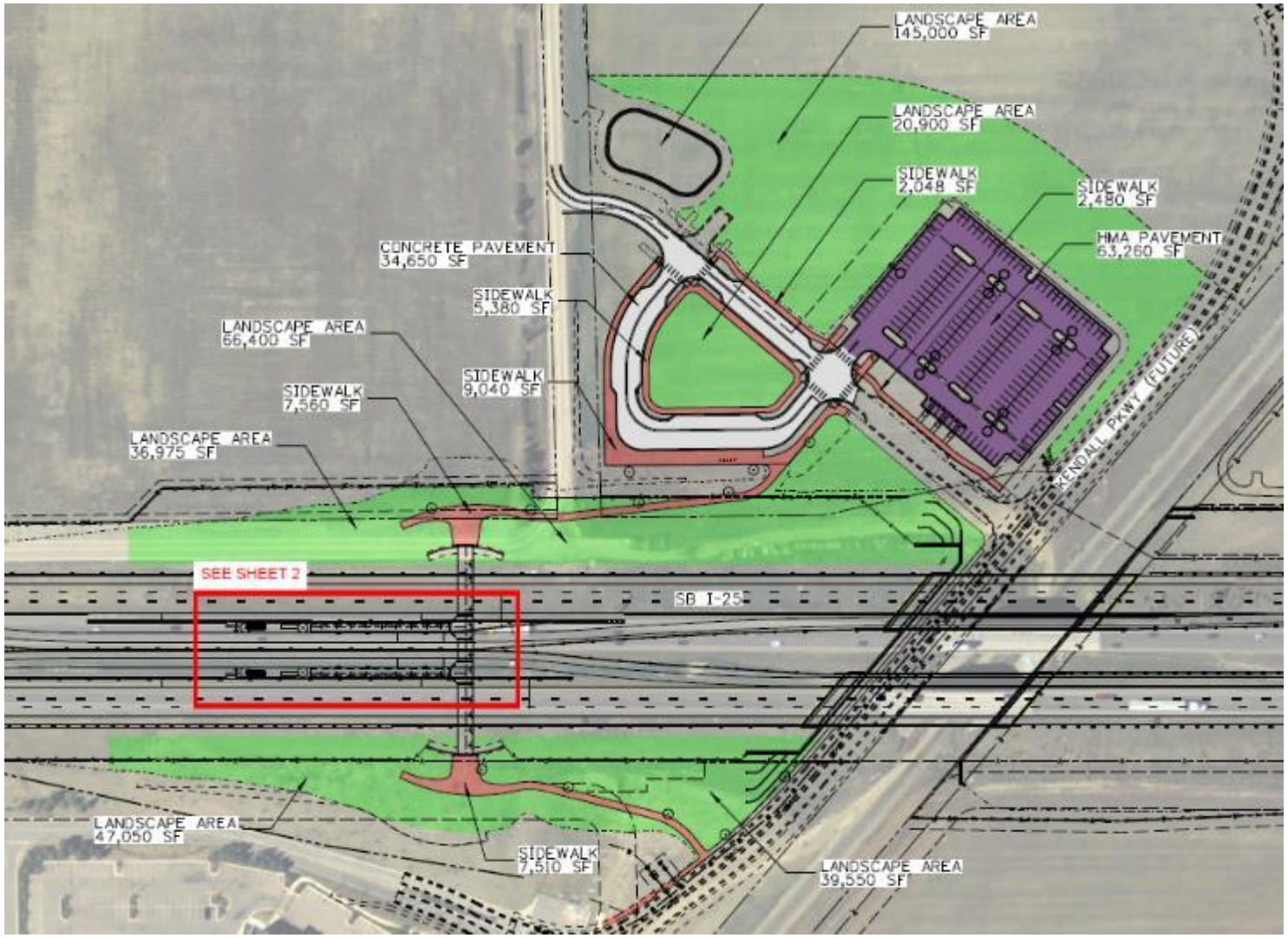
- Partnering with developers
- Smart & Flexible Design
- Leveraging CM/GC delivery to be able to add in scope





Centerra Loveland Mobility Hub at Kendall Pkwy
Segment 7/8

- Partnership between Centerra and CDOT
- Upgraded aesthetics and maintenance



CO 402
Segment 7/8

CO 402 Flipped Interchange

Scope: Removal of two I-25 bridges over CO 402, three signalized intersections and construction of one new structure carrying CO 402 over I-25, three roundabouts and an East Frontage Road realigned 1/8 of a mile to the east. Also constructed was a new Park-n-Ride in the southwest quadrant of the interchange.

Kechter
Segment 7/8

Kechter Bridge over I-25

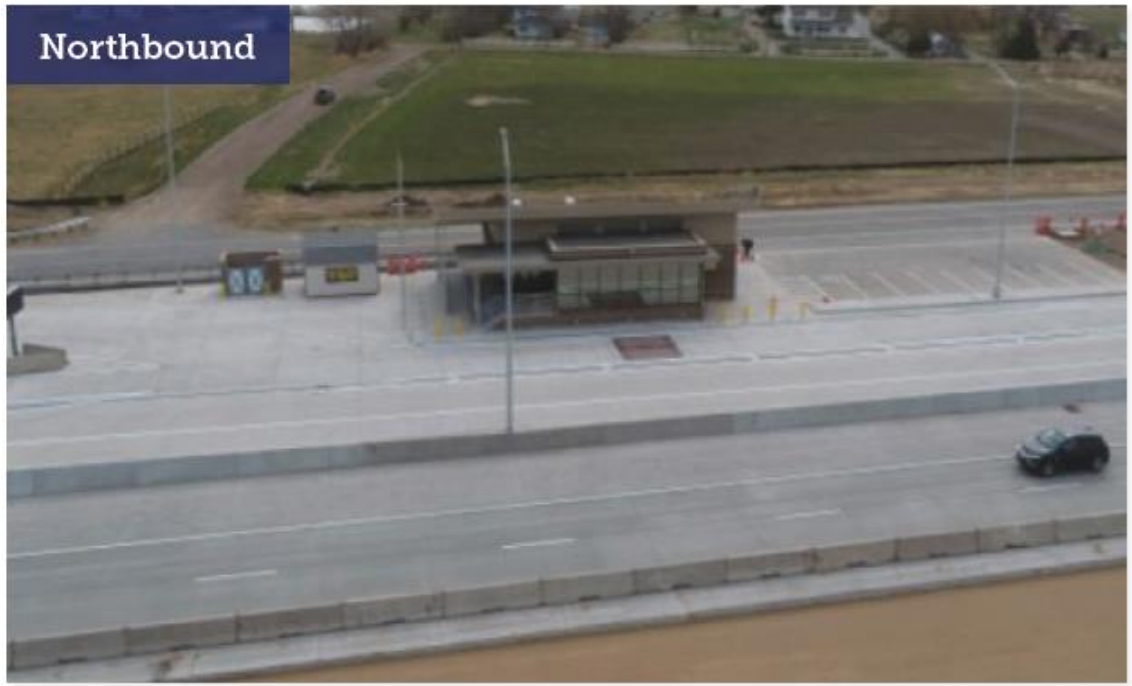
Scope: Removal and Reconstruction of a new Bridge Structure carrying Kechter Road over I-25, associated retaining walls, construction of a roundabout at Kechter Road and the West Frontage Road and tie in work on Kechter Road. The old structure had no sidewalks, bike lanes and a very narrow 2' shoulder. The new structure now includes all of these features with lighting and a roundabout connecting to the West Frontage Rd.

Fun Fact: Between the 25 and 50-year storm event water overtops I-25 adjacent to this area. Raising I-25 out of the floodplain was not feasible in the base project due to clearance issues at this bridge. With the additional funding allocated by the Colorado Transportation Commission the project was able to build the Kechter Road Bridge at a higher elevation and two new I-25 bridges just south of Kechter Road which allows the 100-year event to pass without overtopping the interstate.

Ports of Entry

Scope: Completely rebuild both the northbound and southbound Ports of Entry approximately 2,000 feet south of where they exist today, lighting, communications equipment, Weigh in Motion infrastructure, pavement into and out of the ports, a covered inspection structure on the SB side and removal of the existing structures.

Fun Fact: The project saved an estimated $150,000 by resetting infrastructure such as cameras, scales, network equipment, PrePass and Drivewyze gantries and communications equipment rather than purchasing and installing new devices and equipment. Moving the Ports creates a safer situation than what existed prior as slow-moving trucks coming out of the NB Port were trying to merge onto I-25 while fast moving cars were trying to exit onto Prospect.



Prospect Interchange

Scope: The entire interchange is being rebuilt to include bicycle and pedestrian facilities, turn lanes and two through lanes across the bridge allowing Prospect to widen in the future both east and west of the interstate. Soon after the bridge was completed, a new middle/high school opened on the east side of the interstate. The previous bridge only had two lanes, minimal shoulder and no bike lanes or sidewalks.

Fun Fact: The bridge structure includes a unique multi-modal path that was coordinated closely with Fort Collins. There is also grading in place for a future 4 lane typical section. Fort Collins also contributed money to the project for an upgraded interchange.

More Info

Pre-Construction By the Numbers

I-25 NORTH BERTHOUD TO JOHNSTOWN

PRE-CONSTRUCTION

By the Numbers

COLORADO Department of Transportation

EXPRESS LANES | I-25 NORTH

Berthoud — Johnstown

2,500+ Completed Action Items

Over 215 Documented Decisions Made

26 Coalition Meetings

7 Public and Council Meetings
15+ Stakeholder Groups engaged (17 in RFP)
5 CM/GC education meetings with other CDOT projects

Over **200** *construction risks identified and mitigated through design*

73 *risks documented in risk register...*

saving over **$5M** *from base project cost*

3,189 Plan Sheets

6 Successfully Negotiated Construction Packages

1,356 Pages of Specifications

40

Utility Agreements

(108 Football Fields!)

143 Acres of ROW Reduced from EIS

20 Parcels removed from ROW need
2 Properties Donated

373 Staff

136,073 Design Hours

21 Firms

MULLER ENGINEERING COMPANY

RALPH L WADSWORTH CONSTRUCTION

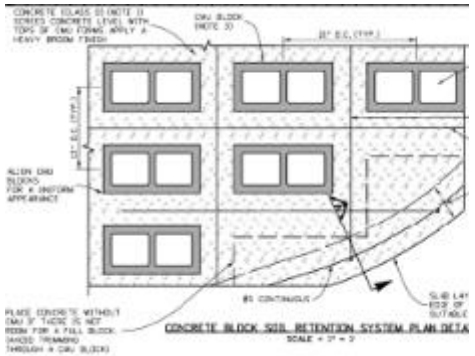
SEMA CONSTRUCTION

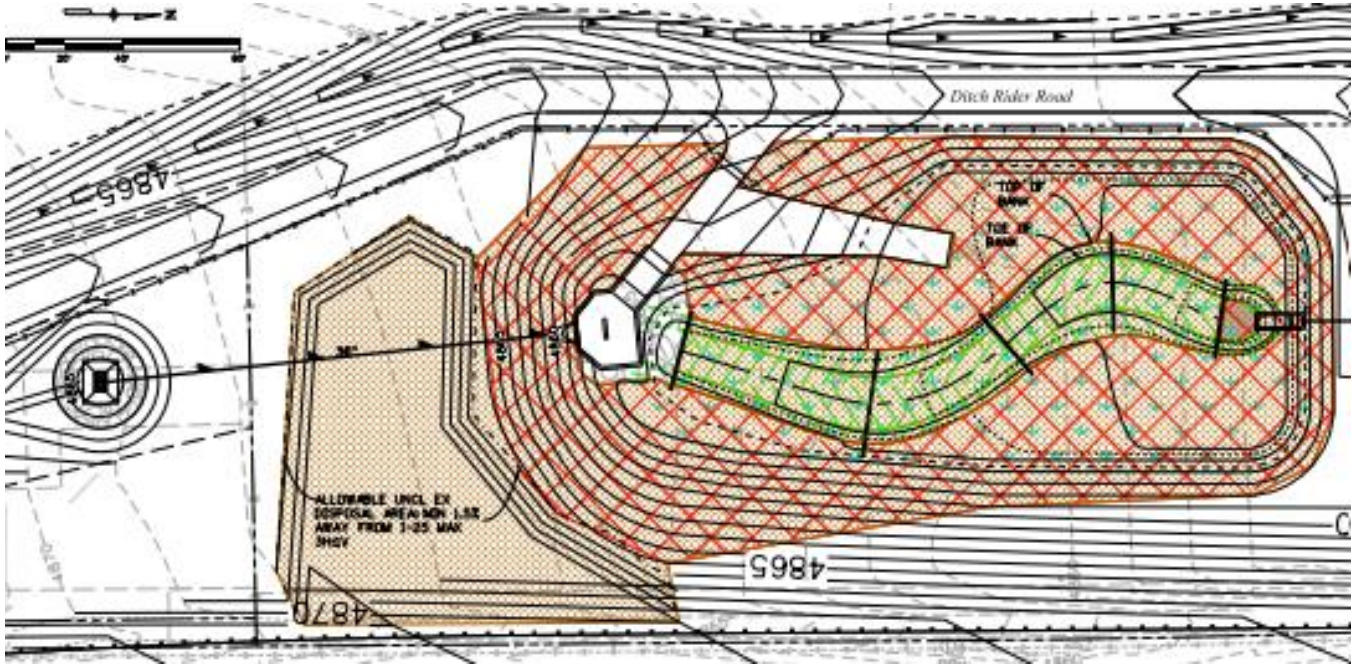
RockSol Consulting Group, Inc.

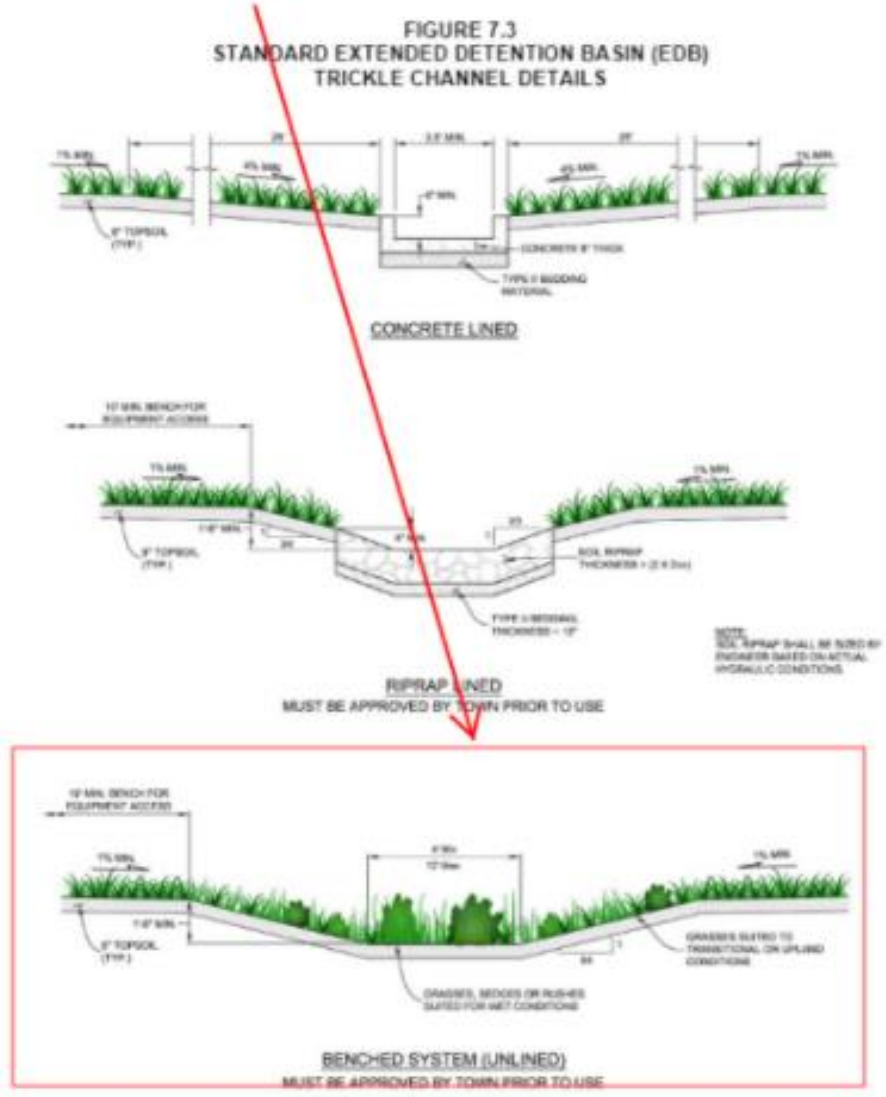
Innovation Highlight
I-25 Segment 6 Update

Natural Water Quality Pond - Pilot Project

- Two WQ ponds
- Replace trickle channel with deep-rooted vegetation
- Better filtering, less annual maintenance
- Creating a research project in concert with HQ WQ







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