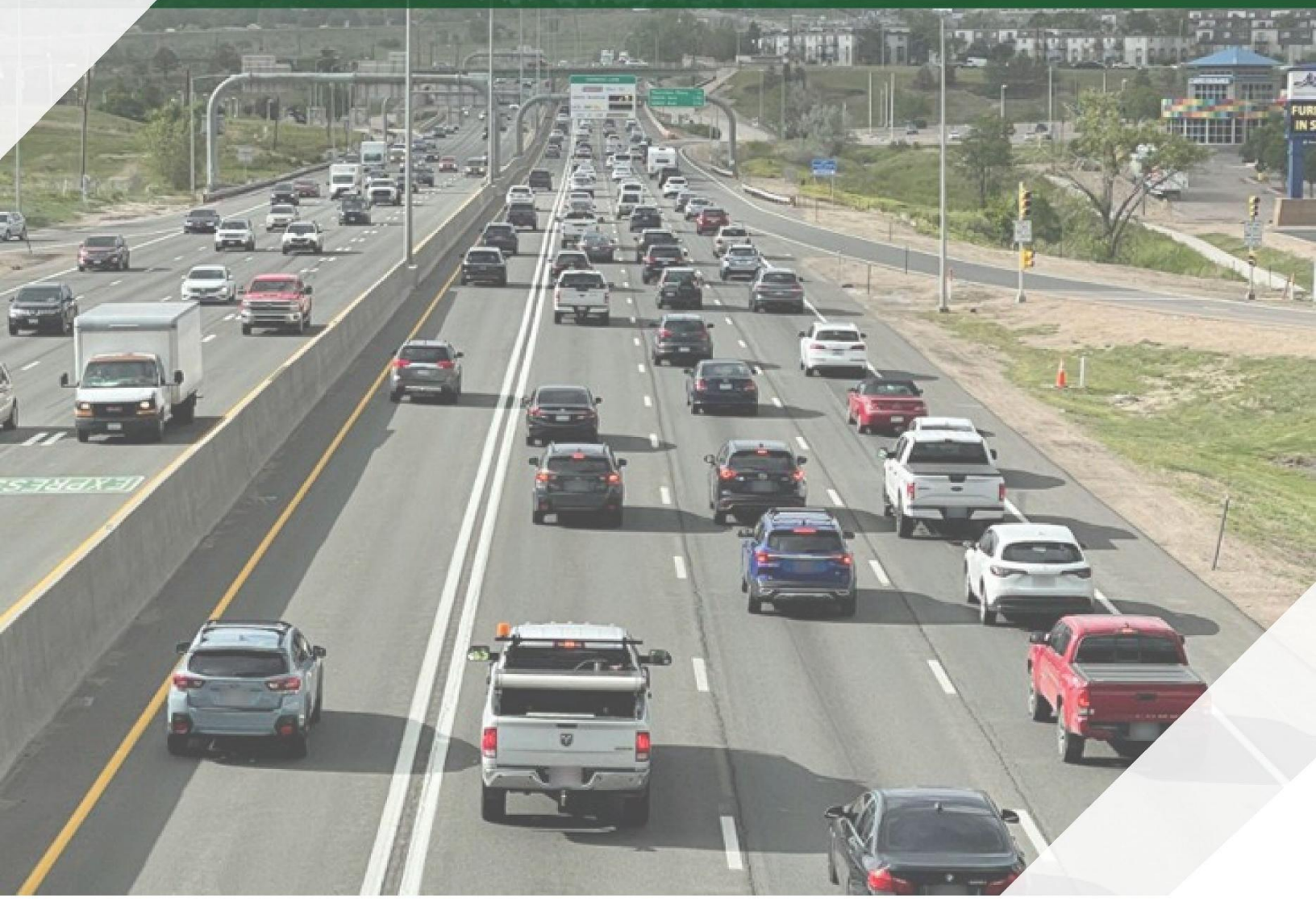
I-25 (US 36 to 104th Avenue)

Safety and Operations Improvements Project



Appendix C: Alternatives Analysis Report

October 2026

This page intentionally left blank.

Appendix C. Alternatives Analysis Report

October 23, 2026 – Version 5
Project Number: PM 0253-299
Subaccount Number: 25563

Contents

Acronyms and Abbreviations ..... **ii**

1.0 Introduction **1**

2.0 Background and Context **2**
2.1 Project Limits 2
2.1.1 Purpose and Need 5

3.0 Proposed Action **6**

4.0 References **22**

Attachments

Attachment A. Planning History Table

Figures

Figure 1. Project Limits 3
Figure 2. Existing Central/North Segment Cross-Section 4
Figure 3. Proposed Action Overview 7
Figure 4. Proposed Central/North Segment Cross-Section 8
Figure 5. Proposed Southern Segment Configuration 9
Figure 6. Proposed Improvements to I-270 Exit to Northbound I-25 10
Figure 7. Proposed Realignment of Niver Creek Trail and Proposed Niver Creek Open Channel 11
Figure 8. Proposed 88th Avenue Bridge Cross-Section 12

Acronyms and Abbreviations

Acronym or Abbreviation	Full Name
CD	Collector/Distributor
CDOT	Colorado Department of Transportation
EA	Environmental Assessment
EIS	Environmental Impact Statement
FHWA	Federal Highway Administration
I-25	Interstate 25
I-270	Interstate 270
I-76	Interstate 76
LOS	Level of Service
NB	northbound
NEPA	National Environmental Policy Act
PEL	Planning and Environmental Linkages
ROD1	Record of Decision 1
ROW	Right-of-Way
SB	southbound
SH 7	State Highway 7
US 36	U.S. Route 36

1.0 Introduction

The Colorado Department of Transportation (CDOT) and the Federal Highway Administration (FHWA) are proposing transportation improvements to Interstate 25 (I-25) between United States Highway 36 (US 36)/I-76/I-270 interchange and 104th Avenue. This Alternatives Analysis Technical Report was prepared to support evaluation of the I-25 from the US 36/I-76/I-270 interchange to 104th Avenue Safety and Operations Improvements project (the project).

CDOT has previously completed an Environmental Impact Statement (EIS) and other planning efforts that recommended improvements to this segment of I-25 (FHWA and CDOT, 2011a). The current project evaluates proposed transportation improvements that reflect and build upon previous recommendations. Because the current project includes elements that were not evaluated and approved in the **North I-25 Record of Decision 1** (ROD1) (FHWA and CDOT, 2011b), this project is undergoing new evaluation under the National Environmental Policy Act (NEPA).

This technical report provides information about how the Proposed Action was developed in relation to previous planning efforts and the project's Purpose and Need. The remainder of this report is organized into the following sections:

- **Section 2**- Background and Context: This section introduces the project area and the corridor's current configuration. Then it introduces the project's Purpose and Need.
- **Section 3**- Proposed Action: This section provides reasons why each element of the Proposed Action is included in the project.
- **Section 4**- References: This section lists the references used to compile this alternatives analysis.

2.0 Background and Context

2.1 Project Limits

The project limits are approximately a 5.6-mile segment of I-25 from the US 36/I-76/I-270 interchange to the south and 104th Avenue to the north. This urban corridor is located in Adams County and surrounded by the local communities of Sherrelwood, Welby, Federal Heights, Thornton, and Northglenn. The project limits are illustrated in **Figure 1**.

The existing cross-section, illustrated in **Figure 2** includes:

- Three general-purpose travel lanes in each direction
- One Express Lane in each direction, along the inside shoulder, separated from the adjacent general-purpose lane by a 2-foot buffer
- A southbound auxiliary lane between the 84th and US36 interchanges
- A southbound auxiliary lane between the 88th Avenue transit slip ramp and the 84th Avenue interchange
- A northbound auxiliary lane between the 88th Avenue transit slip ramp and Thornton Parkway interchange
- Inside shoulders varying in width between 2 and 12 feet and outside shoulders varying in width between 6 and 12 feet.

Figure 1. Project Limits

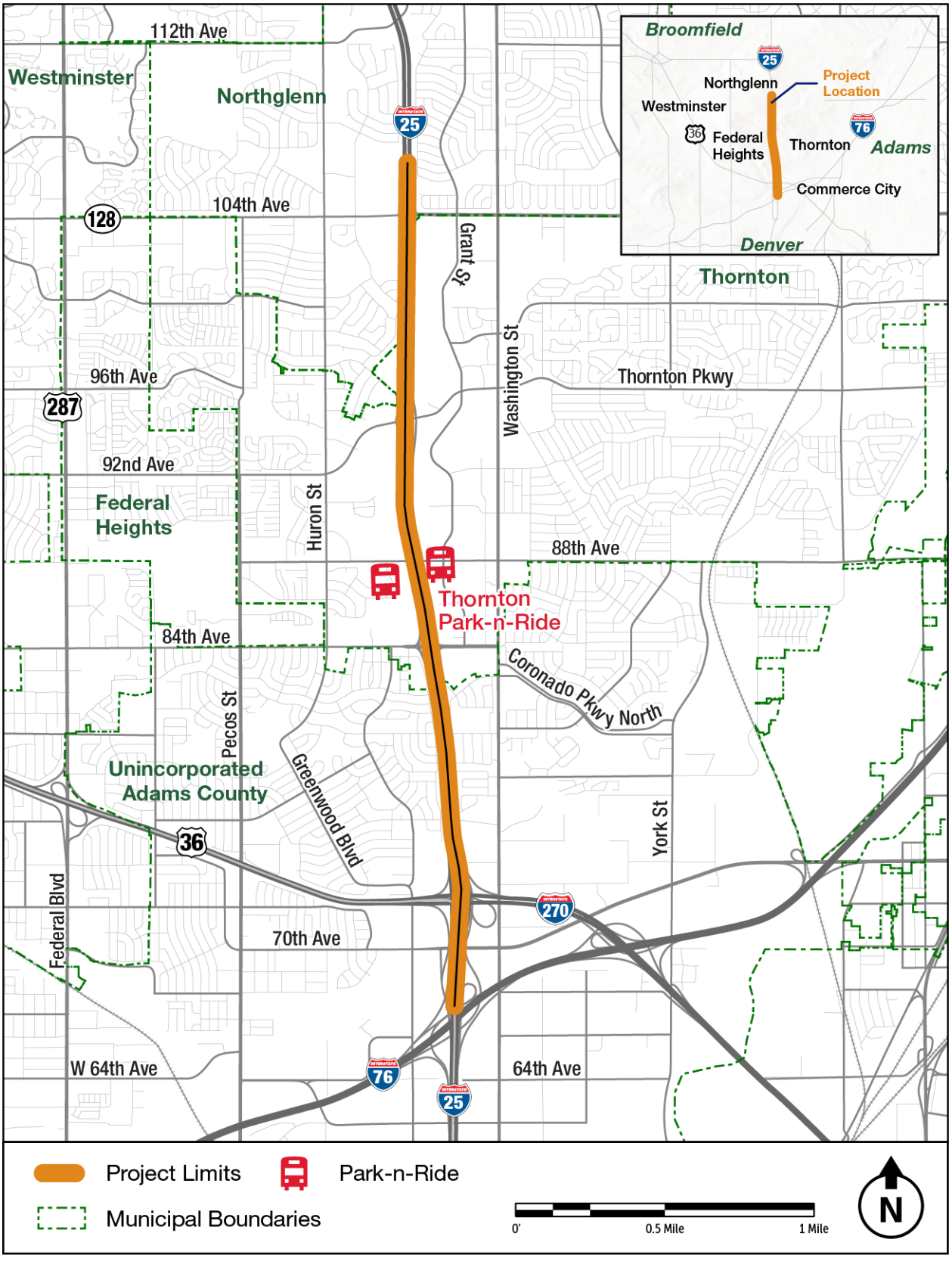
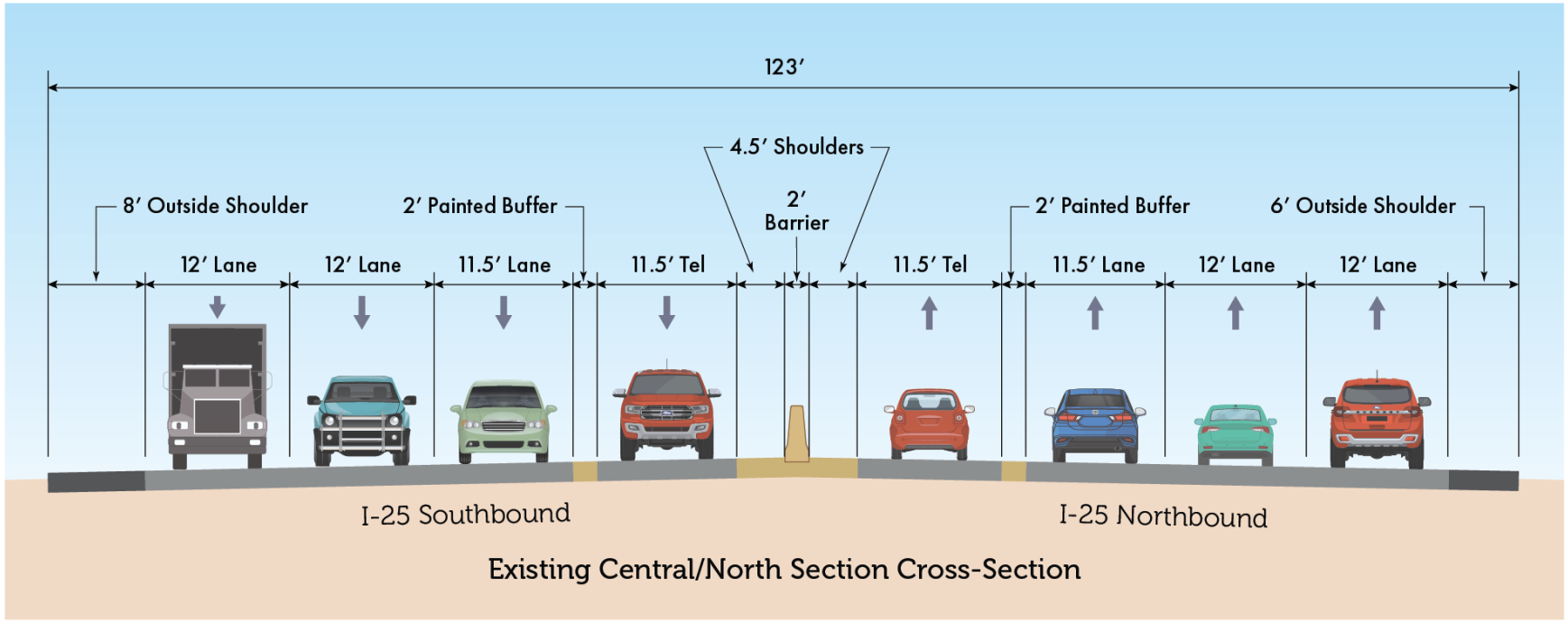


Figure 2. Existing Central/North Segment Cross-Section



2.1.1 Purpose and Need

The purpose of the project is to improve I-25 between US 36 and 104th Avenue to address traffic operations and safety concerns.

The project is needed to:

- Improve safety
- Improve traffic operations

In addition to addressing project needs, the project also has the following goal:

- Minimize environmental and community impacts caused by the project

3.0 Proposed Action

The Proposed Action was developed to address the purpose, needs, and goal of the project. Past planning documents introduced some of these elements, which the project team has refined to fit the current project's needs. A Planning History Table summarizing the findings of past planning documents can be found in **Attachment A**.

The Proposed Action on I-25 between US 36 and 104th Avenue, shown on **Figure 3** through **Figure 8**, includes the following elements:

- A new 12-foot wide southbound general-purpose lane from 104th Avenue to south of 84th Avenue (all new lanes will be 12 feet in width) (see **Figure 3** and **Figure 4**)
- A new northbound climbing lane from the I-76 entrance ramp to 104th Avenue
- An expanded buffer of 4 feet between the Express Lane and the adjacent general-purpose lane
- A new continuous auxiliary lane southbound between the 84th Avenue and Thornton Parkway interchanges
- New continuous northbound auxiliary lanes between the interchanges at I-270 and 84th Avenue, 84th Avenue and Thornton Parkway, and Thornton Parkway and 104th Avenue (see **Figure 5**)
- Expanded inside and outside shoulders with typical 10-foot widths, and minimum 6.5-foot inside and 7-foot outside widths in restricted locations
- Realignment of the combined I-76 and US 36 on-ramp connection
- Expansion of the I-270 exit to northbound I-25 from one to two lanes; I-270 merge with I-25 shifted farther north (see **Figure 6**)
- Removal of bus-only slip ramps along I-25 at the Thornton Park-n-Ride facilities
- Changes to the Park-n-Ride west parking lot including reduction in size and reconstruction of circulation widths, sidewalks, and median areas to accommodate the proposed open channel of Niver Creek
- Changes to the Park-n-Ride east parking lot including reconstruction of bus bays and relocated shelters and amenities
- Replacement of the 88th Avenue bridge over I-25; wider to accommodate improved bicycle and pedestrian facilities and longer to accommodate I-25 widening (see **Figure 8**)
- Realignment of the I-25 adjacent trail and pedestrian network within the Niver Creek Open Space and its connections to the Thornton Park-n-Ride facilities (see **Figure 7**)
- Replacement of the aging pedestrian and bikeway underpass at the Thornton Park-n-Ride facility
- Removal of Niver Creek from the existing box culvert at the Thornton Park-n-Ride and conversion of the creek into an open channel (see **Figure 7**)
- Relocation of the segment of Niver Creek east of I-25, which currently flows south from the Park-n-Ride east parking lot to the creek's intersection with Tributary L, to the west side of I-25
- New water quality treatment features throughout the project area

An overview of the Proposed Action is illustrated in **Figure 3**, while **Figure 4** through **Figure 8** show the details of its particular elements.

Figure 3. Proposed Action Overview

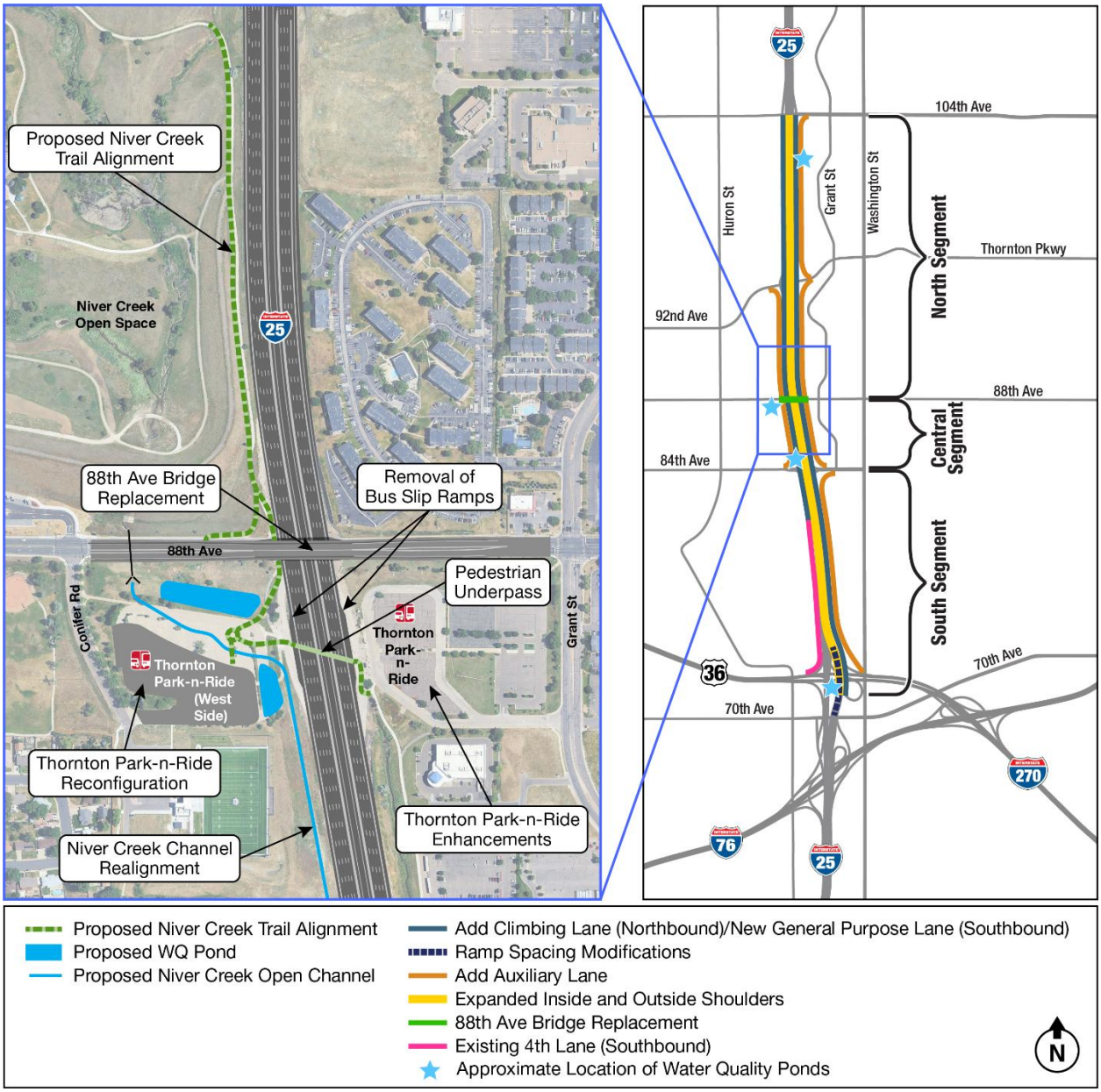


Figure 4. Proposed Central/North Segment Cross-Section

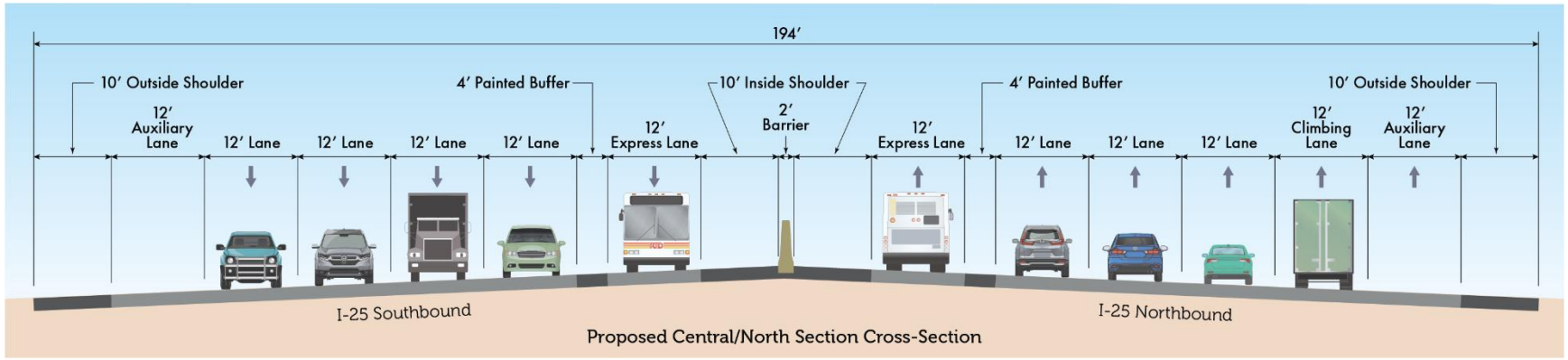


Figure 5. Proposed Southern Segment Configuration

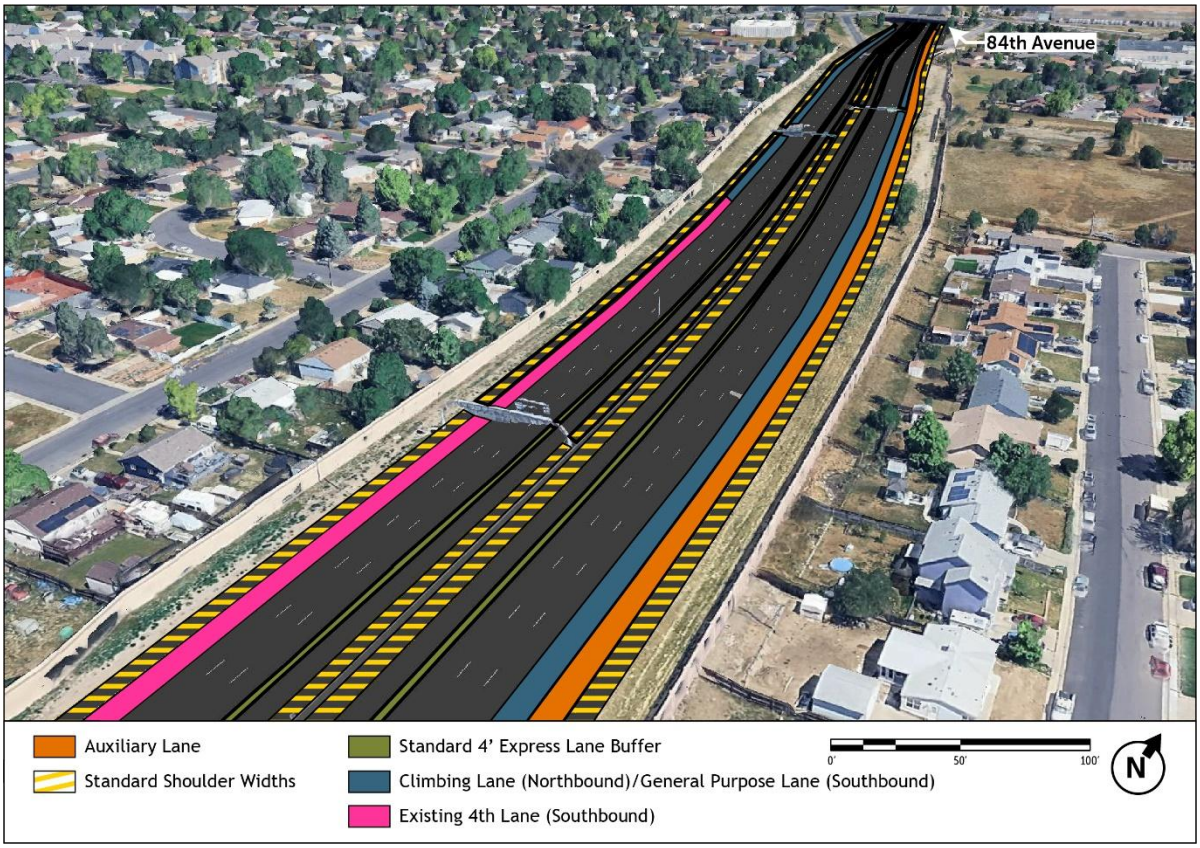


Figure 6. Proposed Improvements to I-270 Exit to Northbound I-25

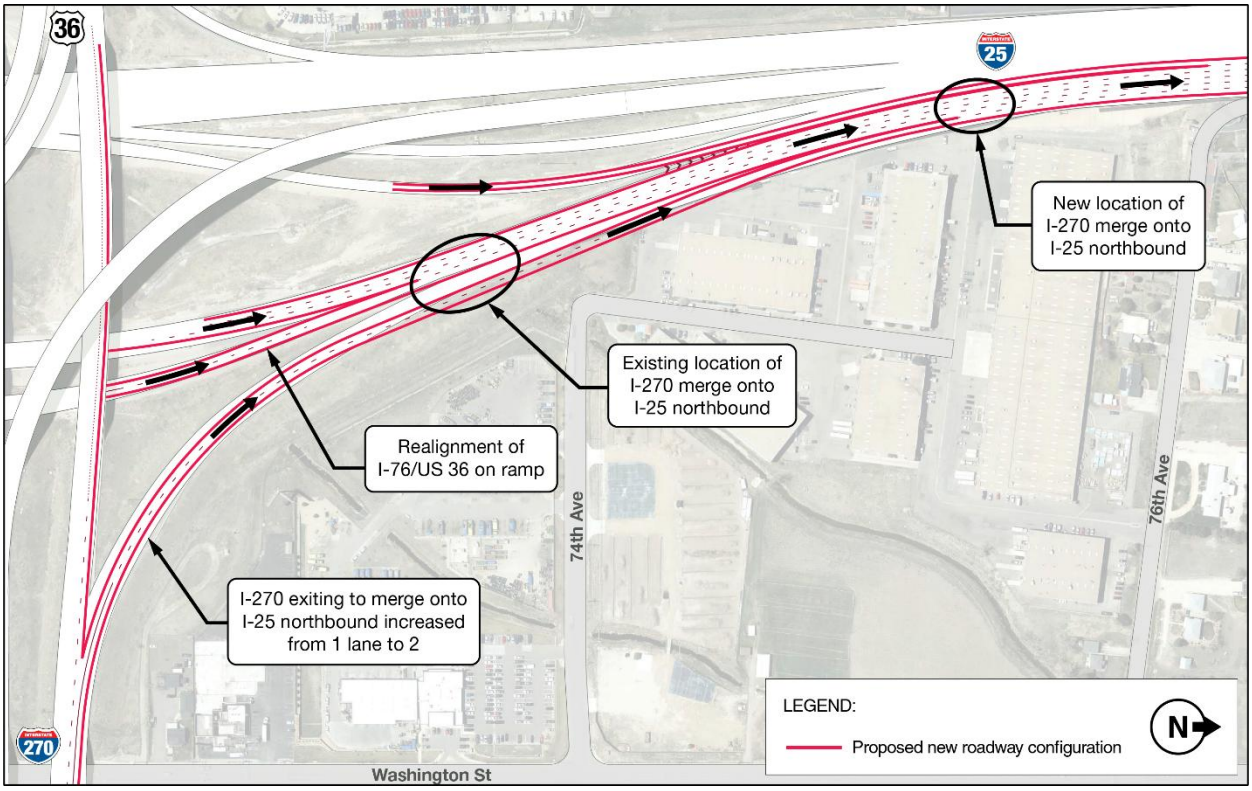


Figure 7. Proposed Realignment of Niver Creek Trail and Proposed Niver Creek Open Channel

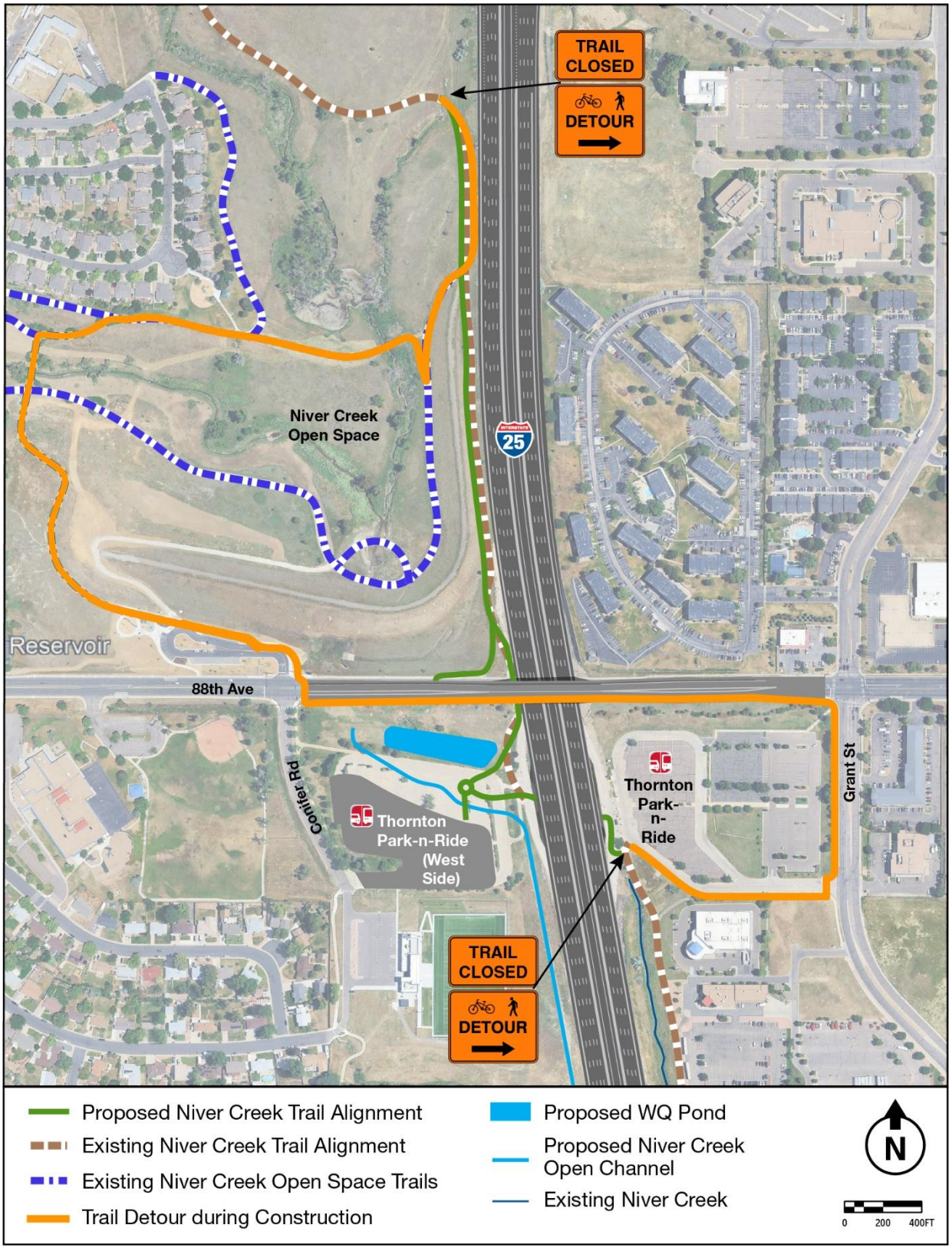
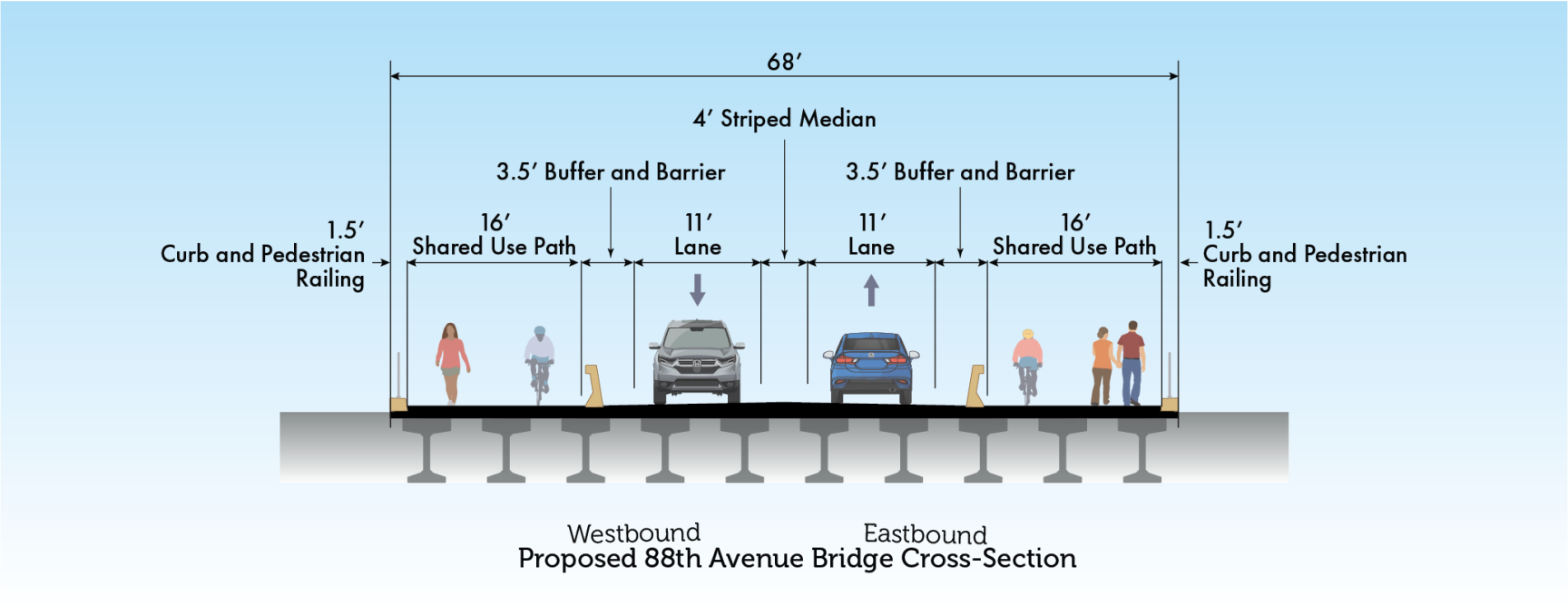


Figure 8. Proposed 88th Avenue Bridge Cross-Section



The following text describes why each element of the Proposed Action is included in the project.

New fourth southbound general-purpose lane from 104th Avenue to south of 84th Avenue

This section of the corridor is a passageway for commuters traveling south into Denver. Peak AM travel southbound often comes with conflicts including traffic congestion and accidents, specifically around the 84th Avenue interchange where vehicles are often weaving unexpectedly to reach their respective exit, creating speed differentials and lane-change conflicts that increase the potential for crashes. A fourth, 12-foot wide southbound general-purpose lane from 104th Avenue to 84th Avenue would provide added capacity to accommodate this high travel demand.

The 2014 Planning and Environmental Linkages (PEL) Study found that the inclusion of this element from Thornton Parkway to 84th Avenue could address the need to reduce congestion and improve safety (CDOT, 2014). This improvement was carried forward through microsimulation modeling conducted during pre-NEPA planning as well as through the 2021 Supplemental Options White Paper Analysis (CDOT, 2021). Additional 2050 horizon microsimulation modeling and safety analysis conducted in 2024–2025 demonstrated that extending the fourth southbound general-purpose lane to begin at 104th Avenue (rather than at Thornton Parkway) improves congestion, increases throughput, reduces vehicle hours of travel, and lowers expected crash rates by addressing southbound bottlenecks earlier in the corridor (CDOT, 2026).

New northbound climbing lane from I-76 entrance ramp to 104th Avenue

The addition of a northbound climbing lane would allow the large number of vehicles entering from US 36, I-270, and I-76, particularly during the PM peak period when northbound congestion is most severe, to have the space and time to accelerate without disrupting the traffic flow of vehicles on the corridor. More specifically, this element addresses the large quantity of freight vehicles entering I-25 from the I-270 interchange. The climbing lane would allow slower moving vehicles more time to accelerate on the increasing grade, in addition to creating more capacity for the corridor overall. By reducing speed differentials between heavy vehicles and passenger vehicles on the uphill grade and minimizing forced lane changes near merge areas, the climbing lane would reduce conditions associated with rear-end and sideswipe crashes identified in the corridor.

The 2014 PEL study found that the inclusion of an additional general-purpose lane (climbing lane) between 84th Avenue and Thornton Parkway could address the need to reduce congestion and improve safety. At the time of the PEL study's writing, the Dynamic Traffic Assignment modeling tool (DynusT) predicted this improvement would reduce northbound travel time between US 36 and State Highway 7 (SH 7) during the peak evening congestion period by 31% in the design year 2035.

The 2021 Supplemental Options White Paper Analysis (CDOT, 2021) found that the construction of an additional auxiliary lane improvement northbound from the I-76/US 36/I-270 Interchange, discussed below, would improve traffic bottlenecks in this segment, and that the construction of an auxiliary lane should be paired with a climbing lane that extends at least to the Thornton Parkway Interchange (Options C, D, and F). Of the three options that featured a climbing lane to Thornton Parkway, Option F extended the climbing lane further north to 104th Avenue.

A new northbound climbing lane from the I-76 entrance ramp to 104th Avenue has been carried forward into the Proposed Action. As documented in the 2021 Supplemental Options White Paper, the climbing lane concept builds upon the existing I-76/US 36 on-ramp auxiliary lane and extends it north through the Thornton Parkway interchange to 104th Avenue, consistent with Option F. The white paper estimated Option F would provide the greatest increase in total network trips (3.1 percent), increase in average network speeds (22.5 percent), and decrease in average network delay (24.2 percent) of all Options A-F when compared to Option A in design year 2040, which functioned as the No Action alternative for comparison.

2050 horizon modeling documented in the Traffic and Safety Technical Report (CDOT, 2026) confirmed that providing the northbound climbing lane through this full segment reduces bottlenecks, improves travel speeds, reduces conditions associated with rear-end and sideswipe crashes, and increases throughput compared to shorter lane configurations.

Expanded shoulders and buffers

Expansion of shoulders is important for bringing the corridor to meet CDOT and FHWA design standards. Expanded shoulders, including a 12-foot outside shoulder and a standard 10-foot (minimum 6.5-foot in constrained locations) inside shoulder, would allow emergency responders and law enforcement to maneuver around traffic while also providing drivers with space to avoid crashes in the travel lanes. They would also pull accidents off the highway so that both emergency vehicles and those involved in the accident are not blocking travel lanes, reducing the risk of secondary crashes.

Expansion of the buffer between the Express Lanes and adjacent general-purpose lanes to four feet increases the separation between vehicles traveling at different speeds, and reduces conflicts associated with frequent lane changing near Express Lane ingress and egress locations. By providing additional recovery space, allowing drivers more time to react, and improving driver expectancy for drivers entering and exiting the Express Lanes unexpectedly, the wider buffer reduces the potential for sideswipe and rear-end crashes and enhances overall corridor safety and operations, particularly under congested conditions.

Continuous auxiliary lanes in both directions between the 84th Avenue and Thornton Parkway interchanges and a new northbound continuous auxiliary lane between Thornton Parkway and 104th Avenue

Continuous auxiliary lanes would eliminate the need for vehicles to enter general-purpose lanes if they are only traveling between interchanges and would lengthen the merging area for incoming and outgoing traffic. This lessens the effect of bottlenecks from forced merge sections of the highway. By separating entering and exiting traffic from through movements and reducing weaving between closely spaced interchanges, auxiliary lanes address the primary conditions associated with sideswipe and rear-end crashes in this segment.

The 2014 PEL study identified continuous auxiliary lanes between 84th Avenue and Thornton Parkway interchanges as infrastructure components that could address congestion and improve safety in this segment of the corridor. Using DynusT modeling for the 2035 design year, the study indicated that scenarios including auxiliary lanes in the 84th Avenue–Thornton Parkway segment resulted in southbound peak-period travel time reductions of 1 to 2 minutes between US 36 and SH 7 and northbound peak-period congestion duration reductions of up to 49 minutes compared to the No Action alternative.

Subsequent analyses confirmed the continued need for these improvements. The 2021 Supplemental Options Analysis White Paper, using 2040 microsimulation modeling, identified the 84th Avenue–Thornton Parkway segment as a critical operational bottleneck and demonstrated that alternatives incorporating auxiliary lanes in this segment improved vehicle throughput, highway speeds, and level of service compared to the No Action alternative. The 2023 I-25/88th Avenue Transit and Safety Analysis White Paper (CDOT, 2023) further found that design packages including continuous auxiliary lanes were associated with approximately 20 to 25 percent crash reductions, with the greatest safety benefits occurring in the 84th Avenue–Thornton Parkway segment. Based on these consistent findings, continuous auxiliary lanes between 84th Avenue and Thornton Parkway were carried forward into the Proposed Action.

Most recently, the Traffic and Safety Technical Report evaluated 2050 future conditions using calibrated microsimulation modeling and found that the northbound PM peak-hour Level of Service (LOS), a qualitative measure of roadway operating conditions ranging from LOS A (free-flow conditions) to LOS F (heavily congested conditions), between 84th Avenue and Thornton Parkway degrades to LOS E/F under No Action conditions. Under the Proposed Action, which includes continuous auxiliary lanes in this segment, LOS improves to LOS D/E, average northbound PM peak-hour speeds increase from approximately 25 mph to approximately 28–30 mph, and mainline throughput at the Thornton Parkway bottleneck increases by approximately 800 vehicles per hour compared to the No Action Alternative.

A northbound continuous auxiliary lane between Thornton Parkway and 104th Avenue is recommended both to benefit traffic operations and prevent the need for future modifications to the I-25 exit lane to 104th Avenue when improvements north of the interchange are implemented. Providing a continuous auxiliary lane in this location allows the

northbound climbing lane to continue north past the 104th Avenue exit ramp and alleviates the need for any future modifications to the exit ramp. The auxiliary lane will benefit traffic in both the AM and PM peak hours by providing more distance for vehicles to merge onto northbound I-25 from Thornton Parkway and providing the ability for exiting vehicles to bypass congested traffic in the general purpose and climbing lanes.

A new continuous northbound auxiliary lane between I-270 and 84th Avenue

Freight and passenger vehicles from I-270 currently enter I-25 in close proximity to traffic from I-76 and US 36. High volumes of truck traffic entering I-25 from I-270 contribute to slowdowns due to an influx of slow-moving vehicles looking to merge, especially from US 36 to 81st Avenue where the grade increases. This influx creates a bottleneck on I-25 between the I-270/US 36 interchange and 84th Avenue. A continuous auxiliary lane would provide additional distance to accelerate and merge, reducing turbulence and improving operations through this segment. Providing additional merge distance and reducing overlapping merge movements would decrease turbulence and speed differentials, improve driver expectancy, and reduce congestion-related crash potential.

The 2021 Supplemental Options White Paper Analysis evaluated a northbound two-lane Collector/Distributor (CD) road as one potential means of addressing these conditions. Microsimulation modeling for the 2040 design year found that the CD road alternative increased mainline throughput to approximately 1,700 vehicles per hour per lane at the 84th Avenue mainline bottleneck, primarily by separating entering and exiting traffic from through movements.

Subsequent microsimulation modeling and safety analyses for the 2050 design year, documented in the Traffic and Safety Technical Report (CDOT, 2026), demonstrated that comparable operational and safety benefits could be achieved with a lower-cost continuous northbound auxiliary lane paired with a general-purpose/climbing lane between I-270 and 84th Avenue, without the need for a CD road. This refinement extended both the northbound auxiliary lane and the climbing lane south from their previously evaluated limits at 84th Avenue to the I-76/US 36/I-270 interchange, replacing the previously considered CD road while providing similar congestion relief, traffic operations benefits, and safety benefits. The 2050 analysis showed that build alternatives incorporating the auxiliary lane improved merge operations, reduced congestion-related turbulence, and contributed to substantial crash reductions while avoiding the additional right-of-way acquisition and business displacement associated with a CD road; thus, this auxiliary lane was carried forward into the Proposed Action.

Ramp Realignments and Merge Improvements at I-270, I-76, and US 36

The Proposed Action includes realignment of the combined I-76 and US 36 on-ramp connection, as well as expansion of the I-270 exit to northbound I-25 from one to two lanes with the merge location onto I-25 shifted farther north (see **Figure 5**).

In the existing condition, vehicles entering northbound I-25 from US 36 and I-76 are first combined into a single on-ramp, which then merges onto I-25. Approximately 400 feet north of this merge, traffic entering from I-270 merges onto northbound I-25 within the same constrained segment. This close spacing between consecutive merge locations results in overlapping acceleration and lane-changing movements, creating speed differentials and turbulence, particularly during peak periods and under high truck volumes.

The proposed ramp realignments increase spacing between merge and diverge locations, provide longer acceleration and deceleration distances, and reduce conflicts between entering, exiting, and through traffic. Shifting the I-270 merge farther north allows vehicles additional distance to accelerate before joining mainline traffic, while the added exit lane from I-270 improves ramp operations and reduces queueing and spillback. The two ramp lanes merge into one lane prior to entering northbound I-25.

Traffic operations analyses conducted as part of the 2021 Supplemental Options Analysis White Paper and the 2026 Traffic and Safety Technical Report demonstrated that improving ramp spacing and merge geometry in this area reduces congestion-related bottlenecks, improves highway operations, and enhances safety. These ramp and merge improvements function in concert with the proposed auxiliary and climbing lanes to separate entering and exiting traffic from through movements, resulting in more stable traffic flow and improved corridor performance. These improvements reduce closely spaced merge and diverge movements and associated speed differentials, which are key contributors to congestion-related crashes in the corridor, thereby improving overall safety performance. Based on these findings, the ramp realignments and merge improvements were carried forward into the Proposed Action.

Replacement of the 88th Avenue Bridge

The 88th Avenue bridge over I-25 would be replaced, lengthened to span the widened I-25 roadway beneath, and widened to accommodate improved bicycle and pedestrian facilities consistent with the City of Thornton's planned cross-section for 88th Avenue. This element creates opportunities for safer multimodal travel over I-25 on 88th Avenue. Wider facilities and improved separation between travel modes would reduce conflicts between vehicles, bicyclists, and pedestrians, improving safety and user comfort.

The 2014 PEL study identified the need to replace the 88th Avenue bridge in order to accommodate future widening of I-25, including the addition of the fourth southbound general-purpose lane as well as other operational improvements. Subsequent analyses, including the 2021 Supplemental Options Analysis White Paper, the 2023 I-25/88th Avenue Transit and Safety Analysis, and the Traffic and Safety Technical Report (2026), confirmed that replacement of the 88th Avenue bridge is necessary to support the refined roadway improvements.

Revisions to the Thornton Park-n-Ride facilities

The bus-only slip ramps that provide RTD transit service access from I-25 to the Thornton Park-n-Ride facilities south of 88th Avenue create safety and operational hazards due to insufficient weave and merge lengths; buses departing from the Express Lanes must cross all the general-purpose lanes to access the slip ramps, while buses reentering I-25 from the Park-n-Ride must accelerate to merge into mainline traffic within a short, constrained area; in the northbound direction, this merge is on an uphill grade in an area that also accommodates traffic entering from 84th Avenue. These conditions contribute to speed differentials, traffic turbulence, and queuing. In addition, the slip ramps cross the Niver Creek Trail without adequate separation, creating conflicts between buses and bicycle and pedestrian trail users. The proposed highway widening elements in this area are not compatible with retention of the existing slip ramps.

The 2014 PEL study evaluated an inline median transit station at 88th Avenue as a potential solution to these issues. The PEL study found that a median station would reduce bus travel times from 70th Avenue to 120th Avenue by approximately 1 minute in the northbound evening peak period and 2.5 minutes in the southbound morning peak period while allowing buses to take full advantage of the Express Lanes and eliminating bus weaving and the need for the existing slip ramps.

Subsequent pre-NEPA planning efforts in 2018 confirmed that the slip ramps could not be replaced in kind or modified safely while accommodating proposed auxiliary lanes and maintaining acceptable bus operations. CDOT evaluated three concepts in coordination with RTD: removal of the slip ramps, modification or braiding of the slip ramps with the 84th Avenue ramps, and construction of a full median transit station. A median station was initially favored due to its operational advantages, although it required substantial capital investment, and was carried forward for further evaluation in the 2021 Supplemental Options Analysis White Paper.

Building on this concept, the 2023 I-25/88th Avenue Transit and Safety Analysis White Paper evaluated 17 transit alternatives intended to address safety concerns and improve transit operations in the corridor. Through a multi-step screening process, the study identified an at-grade center median transit station as the recommended transit alternative based on its ability to eliminate bus weaving, improve safety, and maximize transit performance. This alternative also demonstrated the highest benefit-cost ratio among the options evaluated.

Following the 2023 White Paper, CDOT and RTD conducted additional design development between May and October 2024, evaluating six specific median transit station design options. These included center-aligned, offset, and outside platform configurations, each with either overpass or undercrossing access. Through three rounds of technical and stakeholder screening, Option 1B—an aligned center median platform accessed via ramps connecting to an I-25 undercrossing—was identified as the preferred design option due to its operational efficiency and anticipated benefit-cost performance.

Despite selection of a preferred design, further evaluation determined that the capital cost of the median transit station could not be supported by available or anticipated transit funding, and project stakeholders were unable to commit to its implementation. This conclusion was reinforced by ridership data shared by RTD which showed low existing transit demand, including Thornton Park-n-Ride parking utilization of approximately 8 percent in 2023 and low ridership on RTD Route 120X.

As a result, the median transit station was not carried forward into the Proposed Action. Removal of the bus-only slip ramps was retained as the most feasible and effective means of eliminating unsafe bus weaving movements, resolving conflicts with the Niver Creek Trail, accommodating highway widening, and improving overall safety and operations in the corridor.

Following the removal of the median transit station from the project, and in conjunction with regional trail alignment and relocation of Niver Creek discussed in sections below, several design improvements at the Thornton Park-n-Ride that would provide direct benefits to transit users and improve overall station operations were incorporated into the Proposed Action. Within the east side parking lot, sawtooth bus bays would be constructed to consolidate bus gates and transit services, improving bus circulation and reducing conflicts between buses and general parking traffic. Modifications to the west and east side parking lots would also improve overall bus and vehicle circulation within the station area. Additionally, associated sidewalks would be modified to improve connectivity and accessibility for transit users.

Regional Trail Alignment and Connectivity Across I-25

The Proposed Action includes realignment of the I-25-adjacent regional trail and pedestrian network within the Niver Creek Open Space to accommodate highway widening, as well as replacement of the existing, aging pedestrian and bicycle underpass infrastructure at the Thornton Park-n-Ride facility, to maintain regional trail connectivity and improve safety for nonmotorized users across the I-25 corridor.

The 2014 PEL study identified the importance of maintaining bicycle and pedestrian connectivity through the corridor as roadway capacity improvements were advanced. The PEL study recognized that trail facilities within the Niver Creek Open Space would need to be modified to accommodate highway widening while preserving continuity of the regional trail system.

Subsequent planning efforts, including the 2023 I-25/88th Avenue Transit and Safety Analysis White Paper, continued to evaluate potential impacts to the Niver Creek Trail as part of corridor expansion and transit alternatives. Trail continuity, safety, and user experience were considered as screening criteria during evaluation of median transit station concepts and other corridor improvements. As part of this evaluation, both underpass replacement and pedestrian/bicyclist overpass concepts were considered; however, overpass options were not carried forward due to their greater visual impacts and long ramps to access the overpass,

which would almost double the travel distance for users. While the median transit station was not carried forward, the need to maintain and enhance nonmotorized connectivity along and across I-25 remained a key project consideration.

Under the Proposed Action, the Niver Creek Trail would be largely maintained in its existing alignment, with localized realignments adjacent to I-25 to accommodate roadway improvements. In addition, the existing pedestrian and bicycle underpass at the Thornton Park-n-Ride facility, which has reached the end of its service life, would be replaced with a modern facility that meets current design standards and improves visibility, accessibility, and user comfort.

Trail realignment and underpass replacement were informed by coordination with local stakeholders, including RTD and the City of Thornton, to ensure that regional connectivity is preserved and that trail design supports safe and intuitive movement through the corridor during and after construction. Based on these considerations, the trail and underpass improvements were carried forward into the Proposed Action to maintain continuous, safe bicycle and pedestrian access across I-25.

Relocation and Conversion of Niver Creek to an Open Channel

Within the project limits, Niver Creek currently flows through an 825-foot-long box culvert beneath the Thornton Park-n-Ride west parking lot and I-25, with an additional open channel segment east of I-25 flowing south from the Park-n-Ride east parking lot to the creek's confluence with Tributary L.

Hydraulic and value engineering analysis identified both hydraulic and cost benefits from revising the Niver Creek configuration from the existing box culvert to an open channel and relocating the Niver Creek segment east of I-25 to the west side of the interstate (see **Figure 7**). Converting the creek to an open channel and consolidating drainage structures would reduce long-term infrastructure maintenance needs associated with the box culvert, provide better access for addressing channel degradation and other maintenance requirements, and create a more resilient stream system capable of accommodating flows exceeding the design storm. An open channel also provides water quality benefits during typical storm events, as slower runoff allows for greater sedimentation, filtration, infiltration, and biological uptake of pollutants than the existing culverted condition, while establishment of riparian vegetation along the channel would create habitat and aesthetic enhancements for trail and Park-n-Ride users through reduced hardscape and a more natural environment.

The open channel conversion also improves constructability and reduces construction schedule and impacts compared to retaining the culvert. The proposed pedestrian structure can be constructed within the limits of the existing underpass bridge abutments, minimizing shoring requirements, and requires less temporary pavement than originally proposed because the structure does not need to be extended to accommodate temporary pavement. Temporary drainage from both Niver Creek and Tributary L can be captured in the existing Tributary L structure during construction, further simplifying construction drainage.

Given these operational, maintenance, environmental, and constructability benefits, and consistency with the project goal of minimizing environmental and community impacts, the Niver Creek open channel conversion was carried forward into the Proposed Action. To accommodate the new open channel, the Park-n-Ride west parking lot, which receives very little use, would be reduced in size from 461 spaces to approximately 210 spaces, with associated reconstruction of circulation widths, sidewalks, and median areas.

4.0 References

CDOT. 2014. North I-25, US 36 to SH 7 Planning and Environmental Linkages Study. July. Updated December 2014. Accessed September 2024.

CDOT. 2021. White Paper for North I-25 (US 36 to 104th Avenue) Supplemental Options Analysis. November. Accessed September 2024.

CDOT. 2023. I-25/88th Avenue Transit and Safety Analysis. June. Accessed September 2024.

CDOT. 2026. I-25 US 36 to 104th Avenue Traffic and Safety Technical Report. January.

FHWA and CDOT. 2011a. North I-25 Final Environmental Impact Statement. August. Accessed September 2024.

FHWA and CDOT. 2011b. North I-25 EIS Record of Decision (ROD). December. Accessed September 2024.

Attachment A.

Planning History Table

Planning History Table

Document	Year Completed	Study Area	Recommendation
North I-25 EIS and ROD	2011	Denver to Fort Collins/ Wellington	The Preferred Alternative would combine elements presented in Packages A and B and would include multimodal improvements on multiple corridors. Under the Preferred Alternative, I-25 would be widened with general-purpose lanes and tolled Express Lanes and substandard interchanges would be reconstructed or upgraded to accommodate future travel needs.
North I-25, US 36 to SH 7: PEL	2014	I-25 from US 36 to SH 7	Recommended alternative includes median transit station at 88th Avenue, NB continuous acceleration/deceleration lanes (I-270-84th Avenue and Thornton Pkwy to 104th Avenue), NB auxiliary lanes (84th Avenue-Thornton Pkwy), NB general-purpose lanes (84th Avenue to Thornton Pkwy), SB continuous acceleration/deceleration lanes (104th Avenue to Thornton Pkwy, Thornton Pkwy to 84th Avenue and 84th Avenue to US 36), SB general-purpose lane Thornton Pkwy to 84th Avenue, Ramp meters NB at Thornton Pkwy, and 104th Avenue, planned managed lanes from US 36 to 104th Avenue
I-25 North Metro Managed Lanes RSA Report	2019	I-25 from US 36/I-270 to Community Center Dr	Review of crash data from 2017 and 2018 ultimately determined that completed, in progress or planned safety enhancements may affect the trend in crash totals.
Pre-NEPA Planning	2020	I-25 from US 36 to 104th	The unpublished EA proposed adding a fourth GP lane in each direction from 84th Avenue to Thornton Parkway with a NB GP lane extending to 104th Avenue, continuous acceleration and deceleration lanes between I-25/84th Avenue interchange, and the I-25/Thornton Parkway interchange, widening the inside and outside shoulder to a consistent 12-foot width, a median transit station and pedestrian bridge for the Thornton Park-n-Ride and replacing the 88th Avenue bridge. The cross section would include four 12 ft GP lanes, a 12 ft EL and a 12 ft auxiliary lane between each interchange. The inside and outside shoulders would also be expanded to 12 ft and EL buffer expanded to 4 ft with a 2 ft concrete barrier between NB and SB lanes.
White Paper North I-25 Supplemental Options Analysis	2021	US 36 to 104th Avenue	Of the 6 alternatives evaluated, concluded that option F meets criteria best. Option F includes bringing the corridor to standard (12-foot general-purpose lanes, 12-foot outside should, 10-foot inside shoulder and 4-foot buffer between Express Lanes and the general-purpose lanes), adding a climbing lane from 84th Avenue to 104th Avenue, adding an acceleration/deceleration lane from 84th Avenue to 104th Avenue, ramp modifications around I-76 and US 36 and adding a C-D road from US 36/I-270 ramps to 84th Avenue
I-25/88th Avenue Transit and Safety Analysis	2023	I-25 at 88th Avenue	After taking each alternative through 3 levels of criteria, concluded that an at-grade center median station meets the criteria best and reinforced the North I-25 Supplemental Options Analysis that Option F is also the best alternative.