

Appendix E1 - Transportation Impacts

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This section evaluates the potential impacts to the transportation system that might result from the No Action Alternative and the Build Alternatives (the Three General-Purpose Lanes Alternative and the Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative).

For more information, see Chapter 2.0, Purpose and Need, of the Draft EIS, and the *Safety Assessment Technical Report*, *Traffic Technical Report*, *Transit, Bicycle, and Pedestrian Technical Report*, and *Recreational and Section 6(f) Technical Report*.

1.0 Existing Transportation Facilities

Interstate 270 (I-270) is a controlled-access interstate highway with two general-purpose lanes in each direction between Interstate 25 (I-25) and Interstate 70 (I-70), serving as a critical east-west connection in the Denver metro area. The posted speed limit is 55 miles per hour (mph). The corridor connects major highways including I-70, I-25, United States Highway 36 (US 36), and Interstate 76 (I-76).

The following subsections describe the existing transportation network. Additional information about the operations and safety of the transportation network can be found in Chapter 2.0, Purpose and Need, of the Draft EIS.

1.1 Freight

I-270 is a key freight route where freight vehicles currently account for 8 to 17 percent of traffic, varying by segment. Forecasts indicate this proportion will continue through 2050, underscoring the corridor's long-term role in goods movement. I-270 is designated as part of the Primary Highway Freight System shown in Figure 1, the Strategic Highway Network¹ (STRAHNET) shown in Figure 2, and plays a crucial role in moving goods between industrial areas in Commerce City, regional distribution centers, and the greater interstate system. It supports movement of nuclear hazardous materials shown in Figure 3, fuel, and oversized loads, and provides critical access to regional rail, warehouse, and intermodal facilities.

¹ The network of highways, including the Interstate System, that provides connecting routes to military installations, industries and resources. It is a subset of the National Highway System and important to the United States' strategic defense policy by providing defense access, continuity and emergency capabilities for defense purposes.

Oversize/overweight (OSOW) loads are currently prohibited on I-70 (south of the I-270 corridor) forcing permitted OSOW loads to use I-270 to get through the Denver metro area.

Figure 1. Primary Highway Freight System Routes and OSOW Restrictions

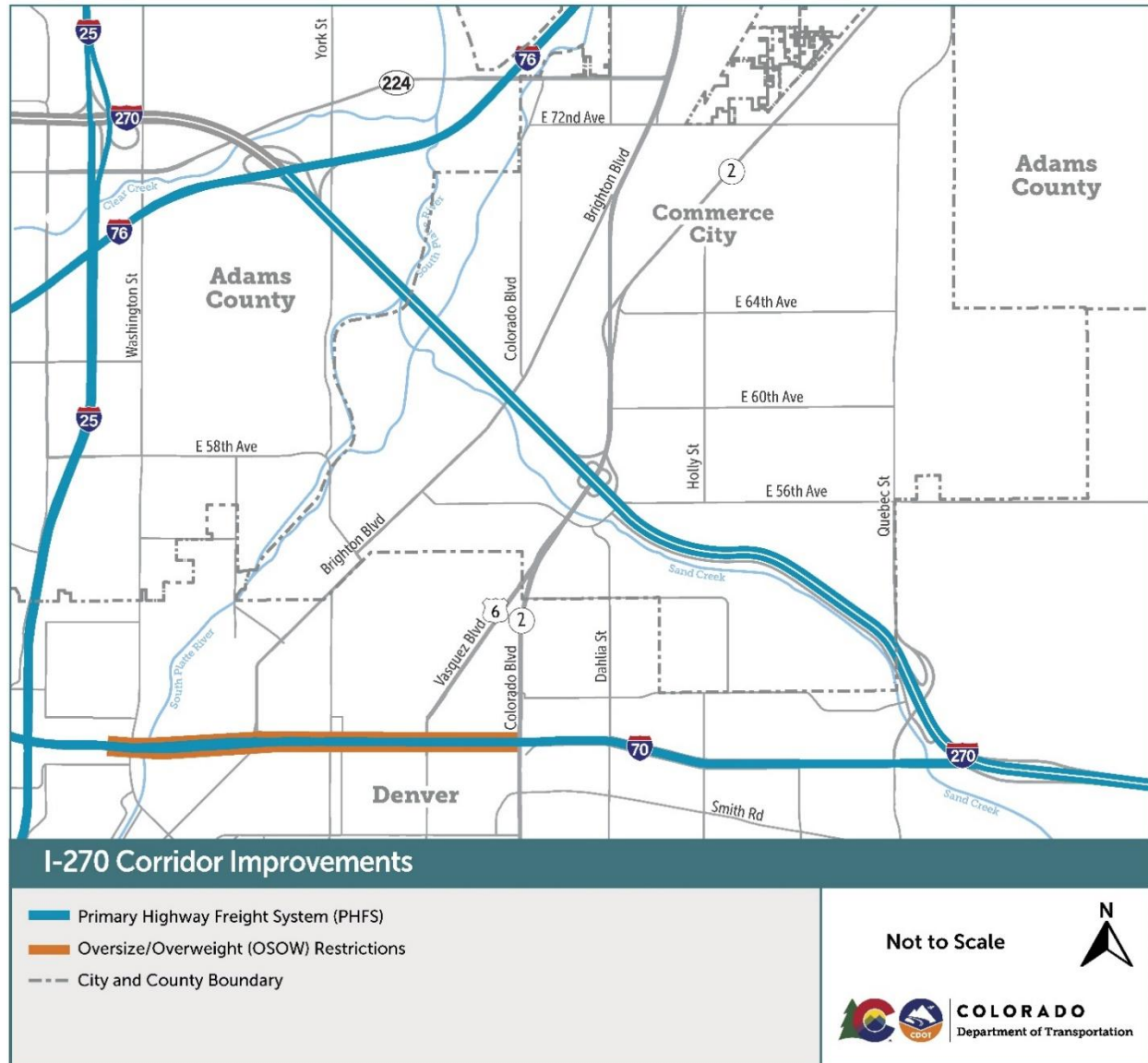


Figure 2. Strategic Highway Network

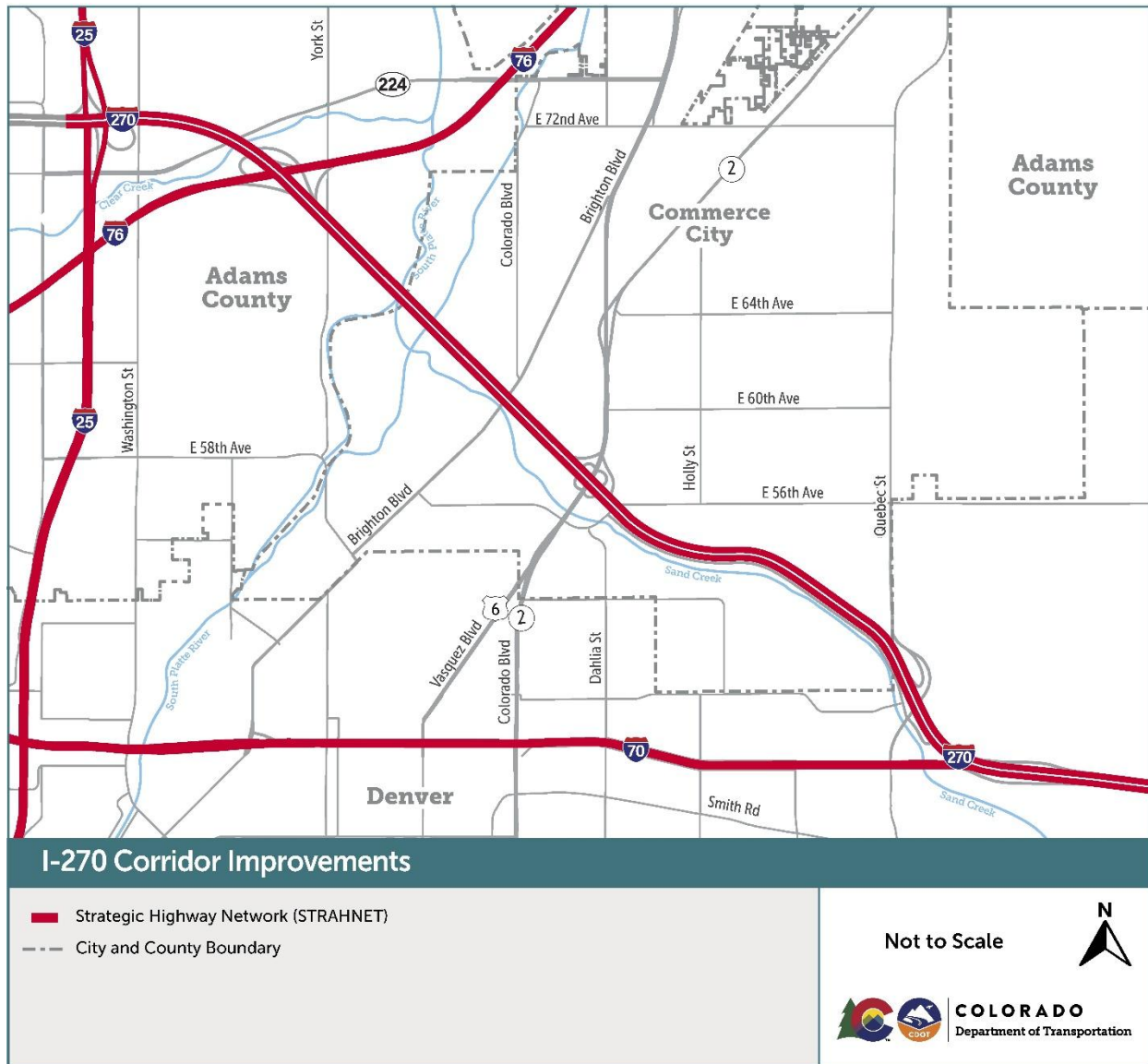
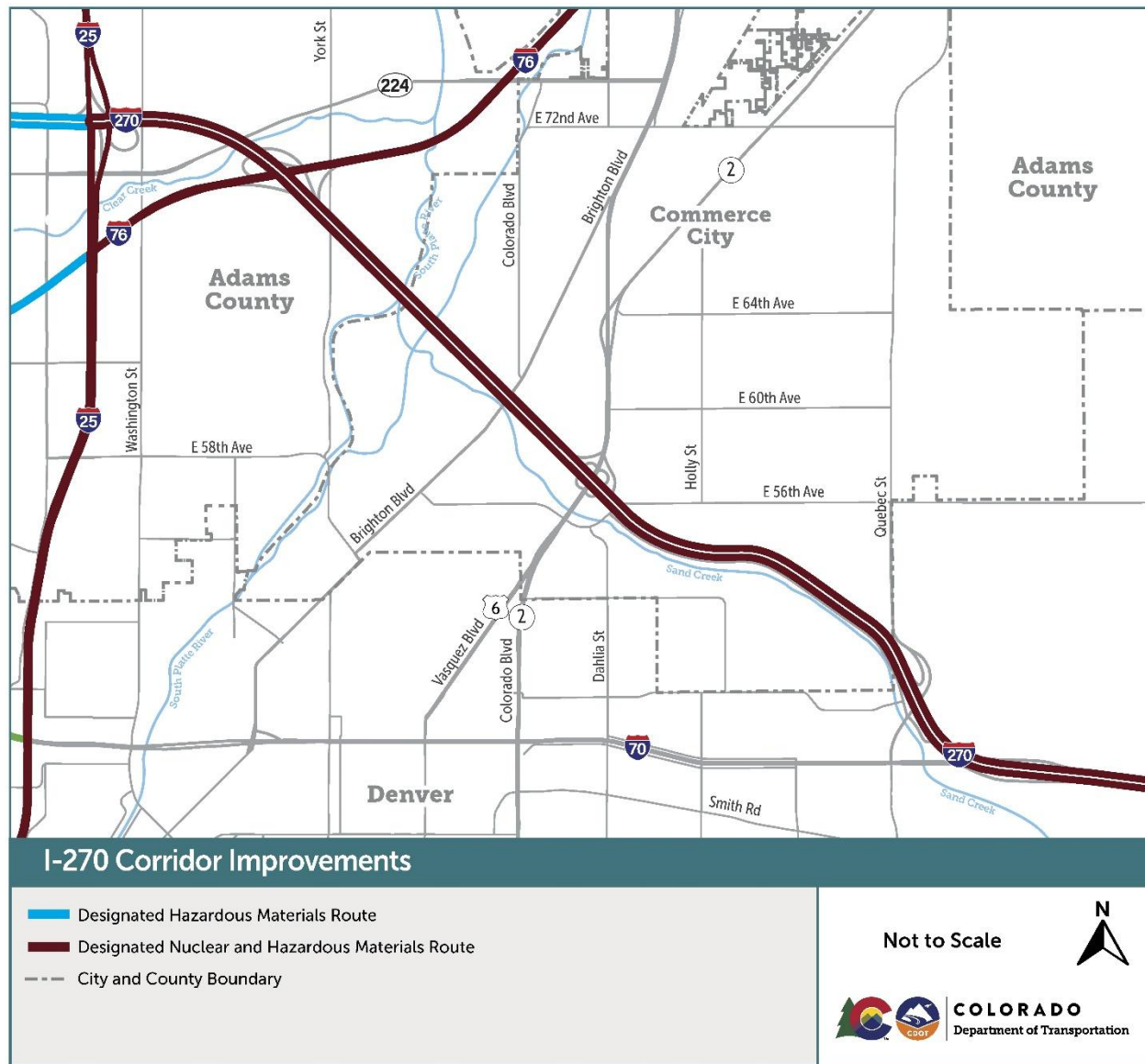
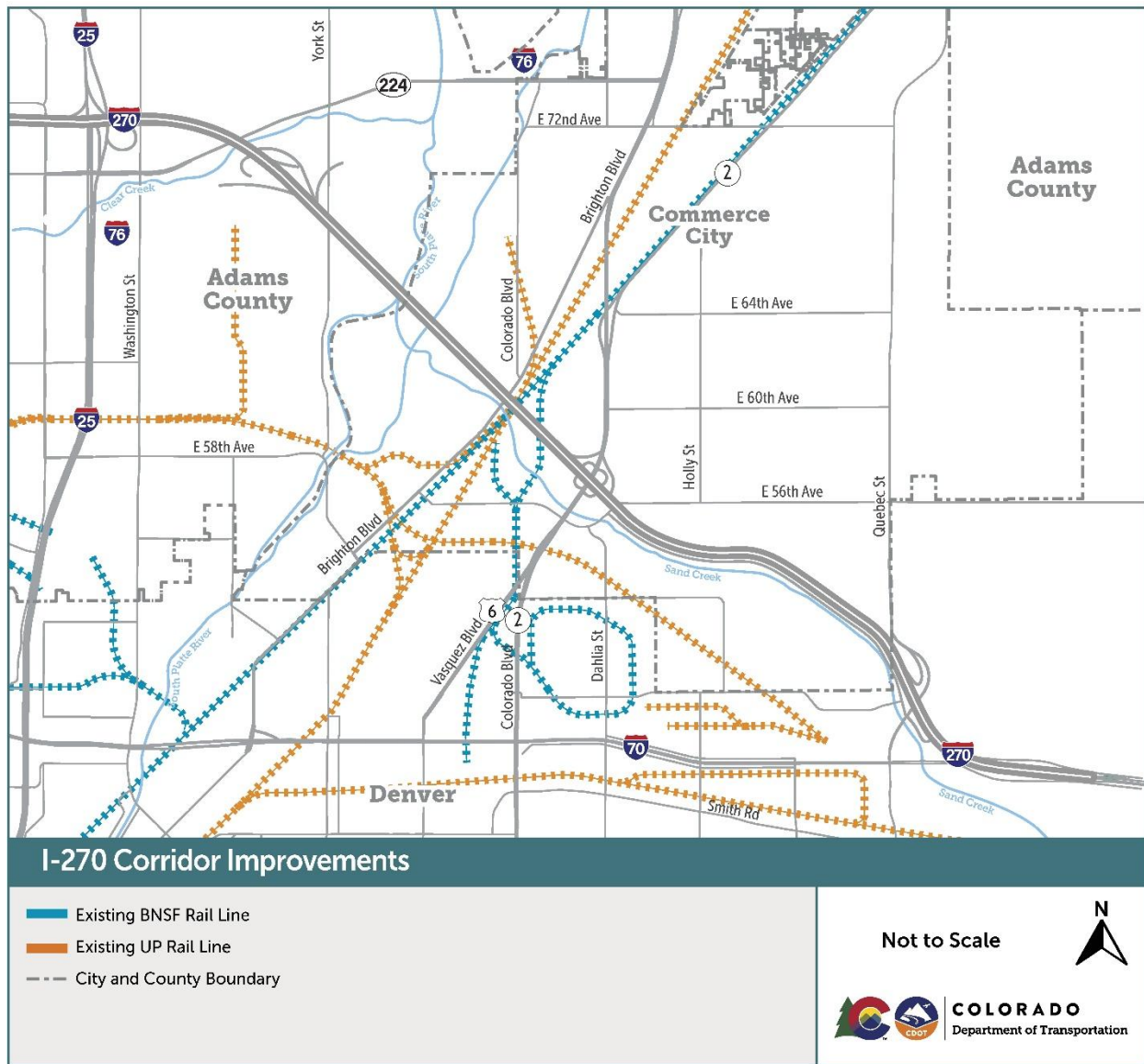


Figure 3. Designated Nuclear and Hazardous Materials Routes


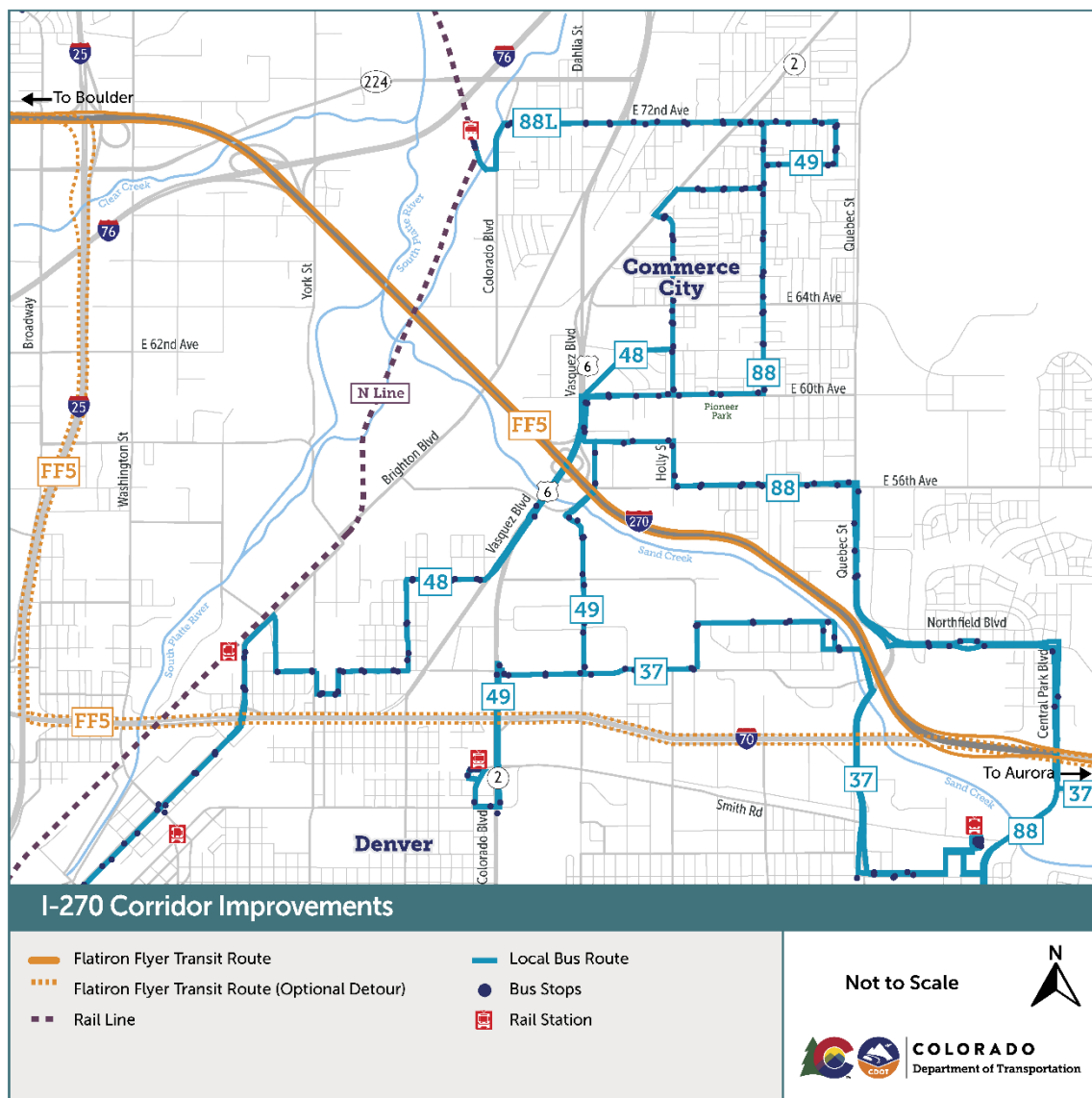
The I-270 corridor also crosses major freight railroad lines operated by the Union Pacific Railroad (UPRR) and BNSF Railway (BNSF). The UPRR has two sets of rail tracks that cross the corridor under the Brighton Boulevard/UPRR/BNSF bridges. The BNSF rail lines cross the I-270 corridor just west of Vasquez Boulevard, under the 60th Avenue/BNSF bridges and under the Brighton Boulevard/UPRR/BNSF bridges are also shown in Figure 4. These rail lines provide critical freight services to several industrial and commercial businesses throughout Commerce City and the Denver Metro area.

Figure 4. Existing Freight Railroads


1.2 Transit

The transit study area was established to capture existing transit resources that could directly or indirectly be impacted by the construction of I-270 improvements within a 0.25-mile buffer. The study area supports transit including the Flatiron Flyer (FF5), a public transit, limited-stop, regional bus route that connects Boulder and the Anschutz Medical Campus in Aurora. Regional Transportation District (RTD) operates the FF5, and it travels along the corridor but does not stop along the corridor. Additionally, within the study area, RTD operates Routes 37 and 88 on Quebec Street and South Sandcreek Drive, Routes 48 and 49 near the Vasquez Boulevard Interchange, and the N Line crosses the I-270 corridor near the Burlington Ditch (see Figure 5).

Figure 5. Existing Transit Routes



1.3 Bicycle and Pedestrian Facilities

The bicycle and pedestrian study area was established to capture existing bicycle and pedestrian resources that could directly or indirectly be impacted by the construction of I-270 improvements within a 0.25-mile buffer. The I-270 corridor study area includes a mix of regional trails, local trails, sidewalks, and on-street facilities that support bicycle and pedestrian travel. Key regional trails within the area are the Clear Creek Trail, South Platte River Trail, and Sand Creek Regional Greenway (Sand Creek Trail). These trails are primarily hard-surfaced and offer extensive east-west and north-south regional connectivity across Adams County, Commerce City, and the City and County of Denver. Local trails include the

Northfield Trail, which connects users from the Sand Creek Trail to recreational areas in the Central Park neighborhood, and the Wetland Loop Trail, which offers access to the Sand Creek Trail via a pedestrian bridge over Sand Creek. For more information on trails in the study area, please see the *Transit, Bicycle, and Pedestrian Technical Report* and *Recreational and Section 6(f) Resources Technical Report*.

Several major roadways cross I-270 and serve as bicycle and pedestrian routes to varying degrees, including Washington Street, Colorado Highway 224 (CO 224), York Street, Brighton Boulevard, East 56th Avenue, Quebec Street, and Vasquez Boulevard. These corridors feature sidewalks of varying widths and types; however, dedicated bicycle lanes are limited, with only one designated on-street bicycle lane near the study area on Holly Street, which does not cross I-270. Most bicycle travel occurs in shared roadway environments. Sidewalks are generally present but are often discontinuous or narrow.

2.0 Overview of the Transportation Impacts Analysis Approach

To understand how traffic moves through the I-270 corridor today and how it is expected to change by 2050, the project team used a combination of travel demand modeling and microsimulation modeling. These tools helped evaluate and compare vehicular, freight, and transit performance for the No Action and Build Alternatives. Detailed information on the travel demand and microsimulation modeling processes and analysis can be found in the *Traffic Technical Report*.

2.1 Travel Demand Modeling

The travel demand model, developed by Denver Regional Council of Governments (DRCOG), provides a regional perspective by forecasting travel patterns across the transportation system in 2050. The model incorporates data on population growth, land use, jobs, and roadway networks to predict travel patterns across the metro area. This analysis helps identify which corridors are likely to become congested and how future traffic volumes and travel patterns would respond to major changes in the roadway network, such as new lanes or modified interchanges.

2.2 Microsimulation Modeling

The microsimulation model focuses more closely on reproducing observed vehicle behavior, such as merging, lane changing, queuing, and delays at ramps and interchanges. This tool was used to simulate traffic conditions during peak travel periods and highlight specific areas where operational improvements may be needed. By applying this detailed model to both the No Action and Build Alternative scenarios, the project team could evaluate how proposed improvements would affect travel times, bottlenecks, and overall traffic flow.

2.3 Safety Assessment

The safety analysis used historical crash data, predictive modeling, and crash pattern diagnostics to identify where and why crashes occur along the I-270 corridor. The No Action

Alternative assumed current roadway conditions would continue, while the Build Alternatives included safety-related improvements, such as longer merge lanes, improved lighting on bicycle and pedestrian facilities and updated interchange designs. Future traffic forecasts were used with safety performance models to estimate expected crash frequency and severity under each alternative, allowing the team to assess how the Build Alternative might reduce crash risk.

Detailed information on the safety assessment can be found in Chapter 2.0, Purpose and Need, of the Draft EIS and the *Safety Assessment Technical Report*.

2.4 Bicycle and Pedestrian Analysis

Bicycle and pedestrian conditions were assessed by reviewing existing and planned trails, sidewalks, and street crossings throughout the study area. The analysis focused on connectivity, safety, and accessibility, particularly at points where I-270 creates barriers for people walking or biking. Geographic Information Systems data, field visits, and stakeholder input were used to evaluate how each alternative might improve or limit travel for non-motorized users. Factors, such as lighting, wayfinding, sidewalk continuity, crossing distances, trail access, and neighborhood connections, were considered in identifying opportunities to strengthen the active transportation network.

Detailed information on the bicycle and pedestrian alternatives development process can be found in the *Transit, Bicycle, and Pedestrian Technical Report*. Additional information on the anticipated impacts of the bicycle and pedestrian improvements can also be found in the *Recreational and Section 6(f) Technical Report*.

3.0 Alternative Compatibility with Regional Transportation System

Consistent with federal regulations, this document evaluates potential effects to the transportation facilities that might result from the No Action Alternative and the Build Alternatives. The following sections briefly discuss the major changes to I-270, York Street, Vasquez Boulevard, I-76, I-70 and I-25. For more detail on the alternatives and what is included in each, see Chapter 3.0, Alternatives Considered, of the Draft EIS and the *Alternatives Development Technical Report*.

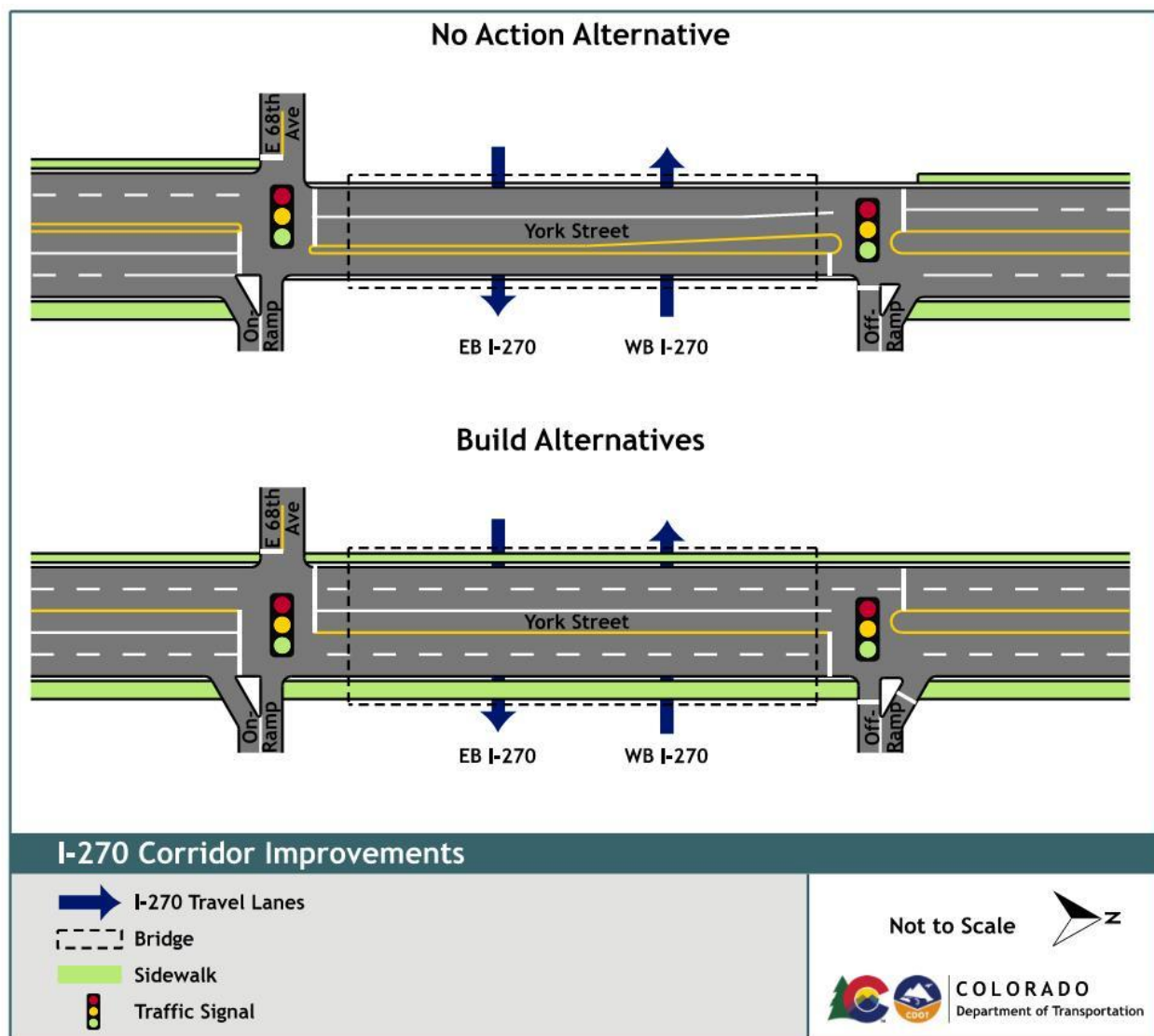
In the No Action Alternative, the study area transportation facilities remain as they are today, and the existing I-270 configuration of two general-purpose lanes in each direction would remain unchanged. No major improvements are made to the I-270 corridor beyond routine maintenance and currently programmed projects.

The major improvements for the Build Alternatives include reconstructing and reconfiguring interchanges at I-76 and Vasquez Boulevard and adding continuous auxiliary lanes on I-270 between I-76 and Vasquez Boulevard in each direction. The Build Alternatives also include identical improvements to the project area bicycle and pedestrian networks to improve connectivity across I-270. The primary difference between the two alternatives lies in the lane configuration: the Three General-Purpose Lanes Alternative adds a third lane for all

vehicles, while the Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative adds an Express Lane in each direction reserved for transit vehicles, high-occupancy vehicles (3 or more people), and toll-paying vehicles including freight.

The Build Alternatives include replacing the York Street bridge over I-270 as part of the overall corridor improvements. The existing York Street bridge is 61 feet wide and lacks continuous sidewalks and bike lanes. The new bridge would be approximately 86 feet wide and would be designed to match the widened York Street cross section. These improvements include a 10-foot sidewalk suitable for bicyclists and pedestrians on the east side and a 5-foot sidewalk suitable for pedestrians on the west side. These improvements would eliminate the No Action Alternative bottleneck, provide a continuous connection for vehicles, bicycles, and pedestrians, and improve local access across I-270. See Figure 6 for visual representations of the alternatives.

Figure 6. York Street Bridge Over I-270 Alternatives



3.1 Impacts to the Regional Express Lane Network

The I-25, US 36, and I-70 direct connect projects would construct new freeway-to-freeway ramps that directly connect general-purpose and Express Lanes from these three highways across these major interchanges. These improvements are included in both the No Action and Build Alternatives and are intended to support seamless regional travel, particularly for I-25/US 36 and I-70 general-purpose lane and Express Lane users traveling between major corridors.

Under the No Action Alternative, these direct connect ramps would feed into an unimproved I-270 corridor that remains constrained with two general-purpose lanes in each direction. As a result, the benefits of the new direct connections would be limited, as vehicles would still encounter bottlenecks, delays, and unreliable conditions on I-270. This mismatch in capacity could reduce the efficiency of the entire regional Express Lane system.

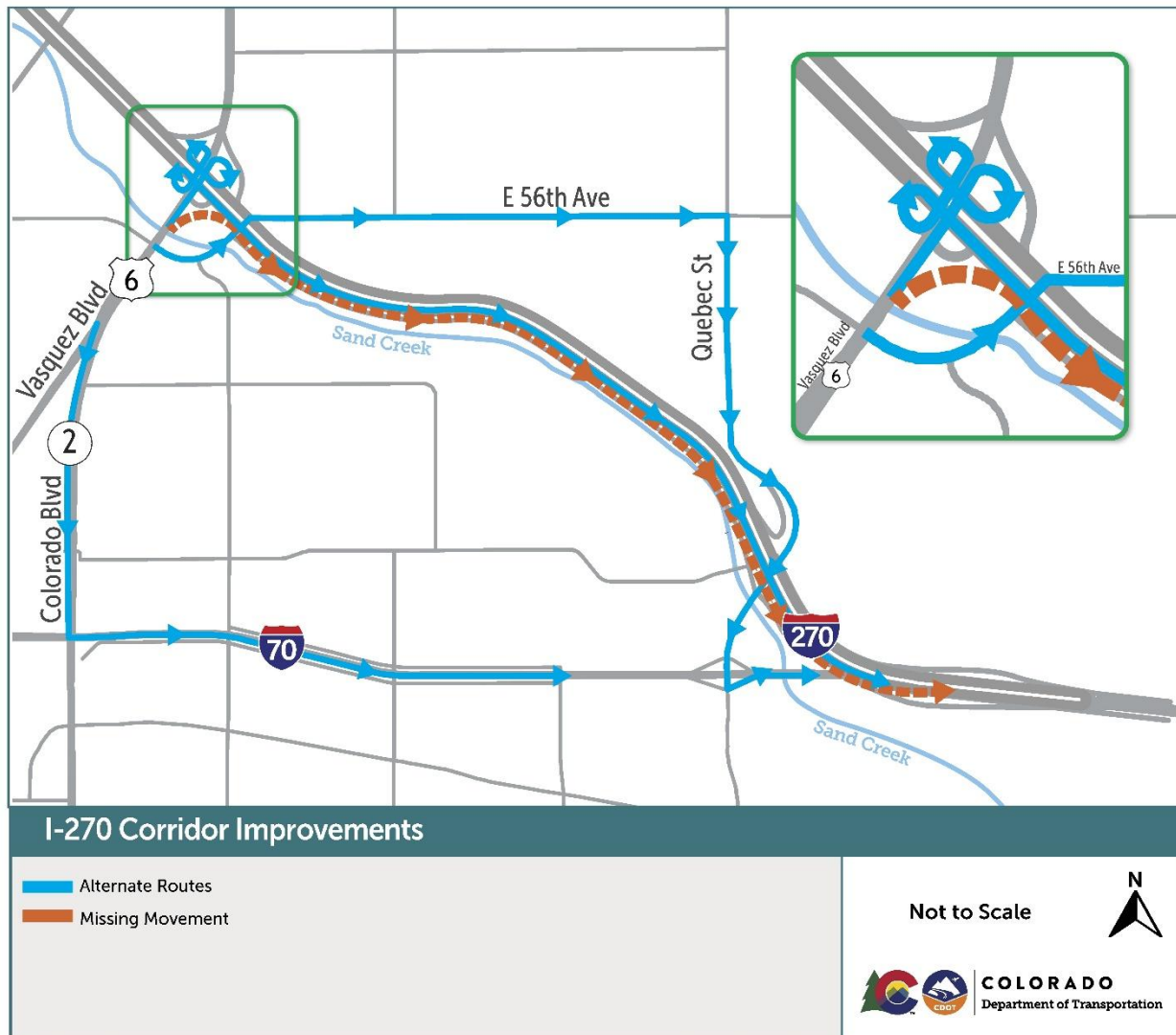
Under the Three General-Purpose Lanes Alternative, these improvements would enhance overall capacity and reduce congestion at key interchanges by providing smoother transitions between corridors. However, because this alternative does not include an Express Lane, it would not fully integrate with the region's growing Express Lane network.

The Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative would support larger regional Express Lane connectivity. With a dedicated Express Lane in each direction on I-270, this alternative would enable seamless Express Lane travel for transit vehicles, high-occupancy vehicles (3 or more people), and toll-paying vehicles across multiple corridors. This integration would improve travel time reliability, reduce lane-changing, and maximize the efficiency of regional investments in the Express Lane network.

3.2 Impacts to the Vasquez Boulevard Interchange

Under the No Action Alternative, the Vasquez Boulevard interchange would remain in its current configuration. Notably, there is no existing ramp for northbound Vasquez Boulevard traffic to access eastbound I-270. There are several known alternative routes to completing the missing movement (Figure 7).

Under both Build Alternatives, the Vasquez Boulevard interchange would be completely reconstructed to improve traffic operations and safety. The project would add the missing northbound Vasquez Boulevard to eastbound I-270 ramp movement, eliminating the need for circuitous travel and accommodating the existing missing movement (Figure 7).

Figure 7. Vasquez Boulevard Interchange - Missing Northbound to Eastbound Movement


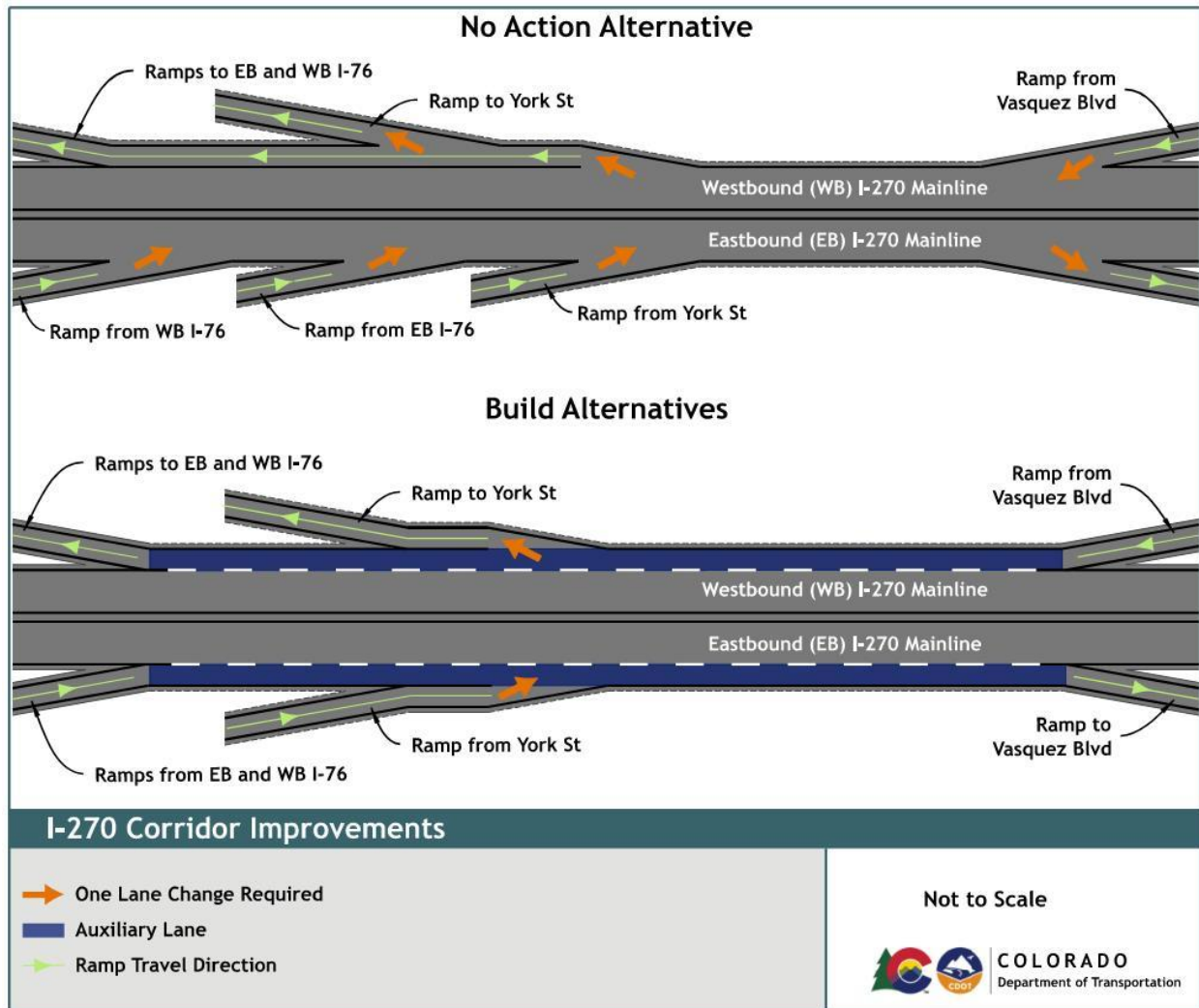
3.3 Impacts to the I-76 Interchange

Under the No Action Alternative, the I-76 interchange would retain its existing configuration, where ramps to and from I-76 are closely spaced and there is no continuous auxiliary lane to separate merging, diverging, and through traffic between the I-76 and Vasquez Boulevard Interchanges. This creates conflict zones, especially where vehicles entering from I-76 must weave quickly across lanes to access exits, like York Street. Without any redesign, these operational challenges would continue to impede traffic flow and raise crash risks, particularly as traffic volumes increase across the regional network.

In contrast, both Build Alternatives include the addition of continuous auxiliary lanes between I-76 and Vasquez Boulevard, which would provide dedicated space for entering and exiting vehicles, reducing the need for abrupt lane changes and improving the flow of through traffic on I-270. Additionally, the off-ramps to I-76 and York Street would be separated, avoiding

driver confusion associated with the consolidated off-ramp. The on-ramps from I-76 would also be consolidated into a single entry point, simplifying operations and reducing the number of merge locations along this segment of the corridor. See Figure 8 for visual representations of the alternatives.

Figure 8. I-76 Interchange Alternatives



3.4 Impacts to Other Regional Highways

I-270 is a controlled-access interstate highway between I-25 and I-70, serving as a critical east-west connection in the Denver metro area. The corridor connects major highways including I-76, US 36, Vasquez Boulevard/United States Highway 6 (US 6), York Street, and Quebec Street. These highways together form the backbone of regional mobility for commuters, freight, and transit.

Although long-term capacity improvements to I-270 are identified in the DRCOG 2050 Metro Vision Regional Transportation Plan (MVRTP) (DRCOG 2024), they were intentionally excluded

from the No Action Alternative for this project to provide a baseline for comparison to this project's Build Alternatives. However, these improvements remain part of the regional vision and are included in other projects, such as in the I-25 North project (from US 36 to 104th Avenue) and I-70 East corridor models, where the I-270 Express Lane is assumed to be in place by 2050. Because I-270 is assumed to be improved in those other models, taking it out of the No Action Alternative for this project results in more traffic being pushed onto I-25 and I-70 in the modeling and those corridors were not planned or evaluated to handle the extra traffic that would shift there if the I-270 improvements do not happen. This highlights the importance of I-270 improvements for maintaining the balance of traffic across the region and compatibility with other regional projects.

For example, recent improvements to I-70 and the proposed I-25, US 36 to 104th Avenue project were planned under the assumption that I-270 would eventually add more capacity. Under the No Action Alternative in this project, I-270 would remain constrained, while surrounding highways improve, creating a mismatch that could lead to worsening congestion, increased delay, and reduced effectiveness of the regional transportation system as a whole. The Build Alternatives—which add capacity as reflected in the MVRTP—are more consistent with future conditions assumed across the region and help ensure that I-270 supports, rather than limits, the functionality and performance of the broader regional transportation network. For more information about how the I-270 project fits into, and has been evaluated in the context of planned regional improvements, see the *Traffic Technical Report*.

4.0 Summary of Transportation Impacts

The traffic operational analysis provided insights to compare corridor performance across alternatives and identified areas where the Build Alternatives are projected to improve traffic operations and travel time reliability compared to the No Action Alternative.

4.1 Traveler Safety on the Corridor

The I-270 corridor currently averages 42.67 crashes per mile, per year - far exceeding the state average of 30.91 crashes per mile, per year for four-lane urban freeways in Colorado. Under the No Action Alternative, crash rates along I-270 would be expected to remain higher than average, with no improvements to merge areas, ramp design, or shoulder width. Frequent crash types, such as rear-end and sideswipe collisions, would likely increase as traffic volumes grow, especially at congested interchanges, like Vasquez Boulevard and Quebec Street.

The Build Alternatives are designed to improve safety across the corridor by addressing the underlying roadway deficiencies. Both alternatives include longer on-ramps and off-ramps, wider shoulders, improved sightlines due to straightening curves, and simplified lane configurations, all of which help reduce the likelihood and severity of crashes. These geometric improvements give drivers more space and time to react safely, while reducing the types of conflict points that frequently lead to collisions.

The Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative provides an additional safety advantage by including an Express Lane in each direction,

specifically designed for transit, high-occupancy vehicles (3 or more people), and toll-paying vehicles. By moving these vehicles out of the general-purpose lanes, the Express Lane helps reduce congestion, smooth traffic flow, and lessen the stop-and-go conditions that contribute to crash risks. Furthermore, separating traffic streams helps reduce lane-changing and turbulence—two major contributors to crashes—resulting in smoother flow and fewer erratic driving behaviors. National studies show that Express Lanes can improve safety by reducing lane changes and creating smoother traffic flow, with a Florida Department of Transportation study of Interstate 95 (I-95) Express Lanes showing a 17 percent drop in crashes after Express Lanes were added. The study attributed the crash reduction to improved traffic flow and reduced lane changing.

However, the Three General-Purpose Lanes Alternative also substantially enhances safety as compared to the No Action Alternative through geometric upgrades and improved lane continuity, particularly in locations where congestion is most severe. Predicted crash rates associated with better matching demand to capacity estimates a 9 percent reduction in crashes per mile per year under the Three General-Purpose Lanes Alternative.

In summary, while both Build Alternatives would reduce crashes by improving the design and functionality of the corridor, the Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative offers added safety benefits through better traffic separation and reduced congestion-related crashes.

4.2 Travel Time and Reliability on the Corridor

Today, traffic on I-270 is often slow and unpredictable, especially during the morning (a.m.) and afternoon (p.m.) peak hours. Under 2023 conditions, a westbound trip from I-70 to I-25/US 36 takes approximately 16 minutes during the a.m. peak hour and 26 minutes during the p.m. peak hour. Under the No Action Alternative, these corridor-wide travel times increase to approximately 27 minutes and 31 minutes during the a.m. and p.m. peak hours, respectively. The eastbound corridor-wide trip, from I-25/US 36 to I-70, currently takes an average of 15 minutes during the a.m. peak hour and 16 minutes during the p.m. peak hour. By 2050, drivers could expect to spend substantially more time sitting in traffic, with long backups near major interchanges, like I-70 and Vasquez Boulevard. The corridor would operate at Level of Service F, meaning the highway is essentially failing to keep up with demand during peak periods. In some areas, traffic queues are projected to spill onto connecting highways, worsening congestion throughout the region.

The Build Alternatives aim to address these problems by improving how traffic flows through the corridor. Both options include adding new lanes that would help reduce congestion, smooth out traffic flow, and make travel times more predictable. However, each alternative does so in slightly different ways.

Both Build Alternatives are projected to improve eastbound a.m. and p.m. peak hour travel times to levels that are faster than existing corridor wide peak hour travel times. The projected 2025 eastbound peak hour demands are projected to be comparable to the capacity provided by the two Build Alternatives. Microsimulation observations indicate that both Build Alternatives benefit from the addition of the continuous lane between the consolidated I-76

on-ramps and the Vasquez Boulevard interchange, improving flow and operations through this currently congested area.

During the a.m. peak hour, the Three General-Purpose Lanes Alternative is projected to provide a 7-minute eastbound corridor-wide trip, demonstrating an 8-minute improvement over existing travel times and a 15-minute improvement over the No Action Alternative travel time. The Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative is projected to provide an 11-minute a.m. peak hour travel time in the general-purpose lanes, demonstrating less travel time improvement than the Three General-Purpose Lanes Alternative, but offering a competitive travel time of 7 minutes in the Express Lanes. The a.m. peak hour travel patterns and preliminary Express Lane modeling did not show as much demand for the trip in the Express Lane.

During the p.m. peak hour, the Three General-Purpose Lanes Alternative is projected to provide an 8-minute eastbound corridor wide travel time while the Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative is projected to provide a 7-minute corridor wide travel time in both the general-purpose and Express Lanes. Both Build Alternatives provide more than an 8-minute travel time improvement over existing, and more than a 14-minute improvement over the No Action Alternative.

Westbound peak hour travel on the corridor generally experiences greater congestion-related delay than eastbound travel. During the a.m. peak hour, both the Three General-Purpose Lanes Alternative and Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative are projected to experience a 7-minute westbound travel time. This reflects a 9-minute improvement over existing (2023) travel times, and a 20-minute improvement over 2050 projected travel-times.

In the p.m. peak hour, the westbound corridor-wide trip is projected to experience a 3-minute increase in travel time for the Three General-Purpose Lanes Alternative as compared to the No Action Alternative. In the Three General-Purpose Lanes Alternative, the extra general-purpose lane helps move vehicles more efficiently through the core of the corridor. However, toward the end of the I-270 corridor, there are only two westbound lanes exiting the corridor. This means that drivers in the third lane must either exit onto northbound I-25 or merge left into one of the two westbound lanes exiting the corridor to US 36. This setup creates a bottleneck because the third lane brings traffic more quickly to this introduced bottleneck, negating the travel time saving experienced traversing the corridor.

By comparison, the Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative matches the number of general-purpose and Express Lanes exiting the corridor, giving drivers clearer, more predictable options to exit or continue straight. This results in fewer lane changes and better traffic flow through the I-25 and US 36 interchanges. In the p.m. peak hour, the westbound corridor-wide trip in the general-purpose lanes is projected to take 20 minutes under the Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative, reflecting an 11-minute improvement over the No Action Alternative and a 6-minute improvement over existing (2023) conditions. Furthermore, the Express Lane is projected to provide a 6-minute and 9-minute westbound corridor-wide

trip in the a.m. and p.m. peak hours, respectively, consistently providing a reliable westbound trip through the corridor.

The Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative demonstrates the best overall performance in improving westbound corridor-wide travel times in both the a.m. and p.m. peak hours, particularly by providing a consistently reliable Express Lane option.

Beyond travel time improvements, the Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative is projected to result in a 34 percent reduction in total average corridor delay and the highest increase in average speeds across the network. It also handles 8 percent more peak-hour trips than the Three General-Purpose Lanes Alternative, meaning it better accommodates growing demand while helping more drivers get to their destinations faster (Table 1 and Table 2).

Table 1. Comparison of Network Performance Metrics - 2050 Total Delay (Hours)

Alternative	a.m. Peak Hour	p.m. Peak Hour
No Action Alternative	9,857	43,489
Three General-Purpose Lanes Alternative	10,915	33,123
Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative	10,952	28,697

Table 2. Comparison of Network Performance Metrics - 2050 Average Speed (mph)

Alternative	a.m. Peak Hour	p.m. Peak Hour
No Action Alternative	25 to 30	13 to 18
Three General-Purpose Lanes Alternative	29 to 34	15 to 20
Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative	27 to 32	21 to 26

Total delay is a measure of how much extra time all vehicles spend on the road compared to how long their trips would take under free-flow (uncongested) conditions. It represents the combined delay experienced by all drivers in the transportation network due to congestion, traffic signals, and other slowdowns. Total delay has been reported in vehicle-hours per modeled peak hour, reflecting the cumulative impact of delays across all vehicles in the study area for the a.m. and p.m. peak hours.

Ramp metering is added under the Build Alternatives, regulating the flow of traffic onto I-270 and was generally found to improve flow on I-270. Ramp metering is designed to strategically shift delays from the freeway to the local network in order to enhance overall traffic flow. Although this can lead to ramp queues and localized delays on surface streets, the primary objective is to prevent severe congestion on the freeway. The benefit of this additional delay is reflected in the increased average speed throughout the network and improved corridor-wide travel times.

Overall, both Build Alternatives would noticeably improve travel time and reliability for drivers on I-270, but the Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative is projected to provide greater long-term benefits, especially as regional traffic continues to grow (Table 3).

Table 3. Projected 2050 Travel Times on I-270 between I-25 and I-70 (minutes)

Alternative	Direction	GP Lane Passenger Vehicles (a.m.)	GP Lane Passenger Vehicles (p.m.)	Freight Vehicles (a.m.)	Freight Vehicles (p.m.)	Express Lane Vehicles (a.m.)	Express Lane Vehicles (p.m.)
Existing	WB	16	26	16	27	N/A	N/A
No Action Alternative	WB	27	31	30	38	N/A	N/A
Three General- Purpose Lanes Alternative	WB	7	34	7	37	N/A	N/A
Two General- Purpose Lanes and One Express Lane that Accommodates Transit Alternative	WB	7	20	7	21	6	9
Existing	EB	15	16	15	16	N/A	N/A
No Action Alternative	EB	22	22	25	27	N/A	N/A
Three General- Purpose Lanes Alternative	EB	7	7	7	8	N/A	N/A
Two General- Purpose Lanes and One Express Lane that Accommodates Transit Alternative	EB	11	7	12	7	7	6

Notes:

GP - general-purpose

EB - eastbound

WB - westbound

N/A - not applicable

4.3 Transit on the Corridor

The primary route operating along the I-270 corridor is RTD's FF5, which provides seven weekday regional bus service trips per day between Boulder and the Anschutz Medical Campus in Aurora. This route was originally intended to travel along I-270 but is frequently rerouted to avoid heavy congestion, often using I-25 and I-70 instead. As a result, transit riders

experience inconsistent schedules, longer travel times, and reduced reliability—especially during peak hours. The No Action Alternative offers no improvements to transit service and the FF5 route will continue to be subjected to continued congestion and unreliable travel times.

Looking ahead to 2050, traffic is expected to substantially increase. Under the No Action Alternative, the FF5 would face growing delays, making it harder for the route to stay on schedule. Modeling shows that under the No Action Alternative, FF5 westbound and eastbound travel times through the corridor are projected to increase to 30 minutes and 25 minutes during the a.m. peak hour, respectively, and 38 minutes and 27 minutes during the p.m. peak hour, respectively. This increase in travel time is expected to further discourage transit use and reduce transit access to important destinations across the region.

The preliminary Level 1 screening analyses suggested that Three General-Purpose Lanes Alternative adds capacity that benefits all vehicles, including buses. With less congestion, bus routes traveling in general-purpose lanes would be expected to experience faster and more reliable travel times. While this alternative does not include any dedicated transit infrastructure, the detailed Level 2 screening analysis indicates that transit vehicles would expect to experience improved travel times under the Three General-Purpose Lanes Alternative when compared to the No Action Alternative. The detailed modeling generally supported this preliminary analysis. Eastbound transit trips are projected to take 7 to 8 minutes during the a.m. and p.m. peak hours respectively. Westbound a.m. peak hour transit trips are projected to take 7 minutes. However, under westbound p.m. peak hour conditions in the Three General-Purpose Lanes Alternative, the corridor wide transit trip is projected to take 37-minutes, reflecting only a 1-minute decrease in travel time, as compared to the No Action Alternative. This phenomenon is discussed in Travel Time and Reliability on the Corridor.

The Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative offers the most direct benefits for transit. It includes an Express Lane that can be used by buses, allowing them to bypass traffic congestion and maintain more reliable schedules. This Express Lane would help FF5 buses stay on their intended route along I-270 and avoid detours.

The Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative is aligned with RTD's long-range plans, which include increasing FF5 frequency to every 30 minutes during peak periods. By offering a more dependable and time-competitive option for transit riders, this alternative helps encourage transit use, reduce single-occupancy vehicle trips and expand access to jobs, schools, and services across the region. Using the Express Lanes, the FF5 could anticipate a 6 to 9-minute trip through the corridor, independent of time of day and direction of travel, reflecting more consistent corridor-wide transit times.

While both Build Alternatives offer improvements for transit, the Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative is the only alternative that provides dedicated space for buses, making it the most effective option for enhancing transit reliability, performance and achieving long-term mobility goals along the I-270 corridor shown in Table 4.

Table 4. Projected 2050 Transit Travel Times (Minutes) on I-270

Alternative	Direction	Transit Vehicles (a.m.)	Transit Vehicles (p.m.)
Existing	WB	16	27
No Action Alternative	WB	30	38
Three General-Purpose Lanes Alternative	WB	7	37
Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative*	WB	6	9
Existing	EB	15	16
No Action Alternative	EB	25	57
Three General-Purpose Lanes Alternative	EB	7	8
Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative*	EB	7	6

Notes:

EB - eastbound

WB - westbound

*Transit Operating in Express Lanes

4.4 Bicycle and Pedestrian Connectivity across the Corridor

The I-270 corridor currently presents significant barriers for bicyclists and pedestrians seeking to cross the corridor. Under the No Action Alternative, these conditions would remain largely unchanged. Sidewalks and bicycle lanes are inconsistent or missing at major crossings, and long stretches of the corridor offer no safe or accessible routes for pedestrians or bicyclists. While some regional trails, like the Sand Creek Trail and South Platte River Trail, pass under I-270, access points are limited, and many existing trail underpasses have poor lighting, restricted visibility, and narrow clearances that discourage use.

Both Build Alternatives are designed to substantially improve connectivity and safety for bicyclists and pedestrians. These improvements are the same across both alternatives, meaning that travelers will experience the same benefits regardless of which build scenario is selected.

These upgrades will fill major gaps in the pedestrian and bicycle network, reduce conflicts with vehicles, and support safer, more direct travel across the corridor. Whether walking to a transit stop, biking to work, or accessing regional trails for recreation, the Build Alternatives offer more cross-corridor connections.

Additional information on the range of bicycle and pedestrian improvements included in the Build Alternatives can be found in the *Transit, Bicycle and Pedestrian Technical Report* and *Recreational and Section 6(f) Technical Report*.

4.5 Freight Operations on the Corridor

I-270 is one of the most important freight corridors in Colorado. Every day, thousands of trucks use the corridor to deliver goods to and from industrial areas, distribution centers, and fuel terminals in Commerce City and the Denver metro region. It is part of the National

Highway Freight Network and is designated for carrying OSOW loads and hazardous materials. This includes trucks that carry critical materials, like construction equipment, energy supplies, and fuel for gas stations, across Colorado.

Currently, outdated highway features, like short on-ramps and off-ramps, narrow shoulders, and tight merges, make it difficult for large trucks to safely and efficiently enter or exit the highway. These design issues are made worse by congestion, which causes delays, increases delivery costs, and adds wear and tear on trucks and roads. Under the No Action Alternative, these conditions would only get worse over time, making it harder for freight carriers to stay on schedule and putting more stress on businesses that depend on timely deliveries.

The Three General-Purpose Lanes Alternative adds capacity across the entire corridor and includes wider shoulders and longer merge lanes, which make it easier and safer for trucks to accelerate and decelerate. It also adds auxiliary lanes in high-conflict areas, giving trucks more space to maneuver between ramps and mainline traffic. These improvements help reduce bottlenecks and make it easier for freight vehicles to maintain consistent speeds.

The Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative offers many of the same physical improvements but also helps overall traffic flow by shifting some passenger, transit, and freight vehicles into the Express Lane. This keeps the general-purpose lanes less congested and improves reliability for all traffic, including trucks.

In terms of truck travel times, the Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative offers the most improvement, reducing average westbound truck travel time during the p.m. peak by nearly 45 percent compared to the No Action Alternative. In contrast, the Three General-Purpose Lanes Alternative shows only modest improvements in the westbound direction during the p.m. peak (approximately 2 percent). Both Build Alternatives generally outperform the No Action Alternative, but the Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative offers the most reliable and time-efficient route for freight vehicles (Table 5).

Table 5. Projected 2050 Freight Travel Times (Minutes) on I-270

Alternative	Direction	Freight Vehicles (a.m.)	Freight Vehicles (p.m.)
Existing	WB	16	27
No Action Alternative	WB	30	38
Three General-Purpose Lanes Alternative	WB	7	37
Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative	WB	7	21
Existing	EB	15	16
No Action Alternative	EB	25	27
Three General-Purpose Lanes Alternative	EB	7	8
Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative	EB	12	7

Notes:

EB - eastbound

WB - westbound

5.0 Construction Impacts

Construction of the I-270 Corridor Improvements Project will be implemented in multiple phases to align with funding availability and minimize disruption to corridor users. While each construction phase introduces temporary impacts to motorists, freight operators, transit users, bicycles and pedestrians, and emergency responders, CDOT's approach is designed to maintain corridor functionality and reduce delays wherever possible.

5.1 General Traffic Impacts

Traffic during construction would be slower in construction zones on I-270 due to the reduced speed limits through the zones. In addition, there would be reduced shoulder widths that would impact traffic if crashes occurred due to not having the ability to move crashes out of the travel lanes. This would increase emergency response times due to one lane being blocked and heavy congestion in the other lane. In addition, there would be times when there are temporary changes to access with detours in place that lead to traffic impacts. To help minimize disruptions during periods of high demand, coordination with local stakeholders will be necessary to accommodate large events in the area and adjust construction activities or traffic control plans accordingly.

5.2 Transit, Bicycle, and Pedestrian Impacts

RTD's FF5 and other regional transit services may experience temporary delays or detours during construction, particularly when activities impact key interchange ramps and major roadways crossing I-270. CDOT will coordinate with RTD to ensure transit reliability and proactively communicate any changes to riders.

Construction activities may also affect bicycle and pedestrian infrastructure, including regional trails and crossing points at key bridges and underpasses. Temporary closures or rerouting of trails, such as the South Platte River Trail and Sand Creek Trail, may be necessary. Accessible detours will be provided, and improvements will be staged to preserve connectivity, wherever feasible. For additional information see the *Recreational and Section 6(f) Technical Report*.

5.3 General Freight Impacts

Freight vehicles traveling through the I-270 corridor are expected to experience slower travel speeds during construction due to reduced speed limits in work zones and narrower shoulder widths. These shoulder reductions may make it more difficult to clear crashes from travel lanes, leading to longer delays, especially for large trucks, as emergency response times increase and traffic delays. Freight movement may also be affected by temporary changes to access points and detours, which could disrupt regular routing for deliveries and oversize loads.

In addition to roadway freight impacts, railroad operations along the I-270 corridor may be affected during construction, particularly where bridges overactive rail lines are replaced.

5.4 Construction Impacts and Mitigation Measures

To reduce the effects of construction on the traveling public and adjacent communities, CDOT will implement the following strategies:

- Maintaining two open lanes in each direction during peak hours; ensuring at least one lane remains open in each direction during off-peak hours in accordance with CDOT's Lane Closure Strategy
- Lane closures may not be scheduled during special events that affect traffic conditions along state highway facilities in accordance with CDOT's Lane Closure Strategy
- Providing clear signage, detour routes, and real-time traffic alerts
- Coordinating closely with emergency services, local jurisdictions, and freight stakeholders
- Monitoring traffic conditions and adapting construction staging, as needed
- Providing the traveling public with real time information about construction on CDOT's project webpage and on CDOT's application called COtrip
- Coordinating closely with UPRR and BNSF will be necessary to maintain clearances, avoid conflicts with train schedules, and implement protection measures to prevent debris from falling on or near the tracks. Early and ongoing communication will help minimize rail service disruptions and support safe, efficient bridge replacement.

By prioritizing key infrastructure early and maintaining operational capacity throughout construction, CDOT aims to deliver long-term corridor improvements while minimizing short-term inconvenience to users.