

Purpose and Need

Why is a Planning and Environmental Linkages (PEL) study being conducted for State Highway 7 (SH 7) from 75th Street to US Highway 287 (US 287)?

SH 7 is a critical east-west arterial in the transportation system serving the City of Boulder, the City of Lafayette, Boulder County, and the north Denver metropolitan area. The SH 7 (75th Street to US 287) PEL Study is being conducted by Boulder County to continue the planning efforts from the SH 7 PEL Study (CDOT, 2014), which extended from US Highway 85 (US 85) in the City of Brighton to US 287 in the City of Lafayette. The SH 7 (75th Street to US 287) PEL will address safety and person mobility on this stretch of the corridor (75th Street to US 287) while recognizing the existing and future role of the corridor. It will identify future transportation improvements that will enhance safety and meet the growing demand for mobility within and through the corridor for all modes of transportation. In identifying improvements, the study will respect local values by preserving the rural, natural, and historic characteristics of the area to the greatest extent



The **vision** for Boulder County is to “provide high quality, safe, sustainable, and environmentally responsible transportation infrastructure and services across all modes, to meet the mobility and access needs of all users.”

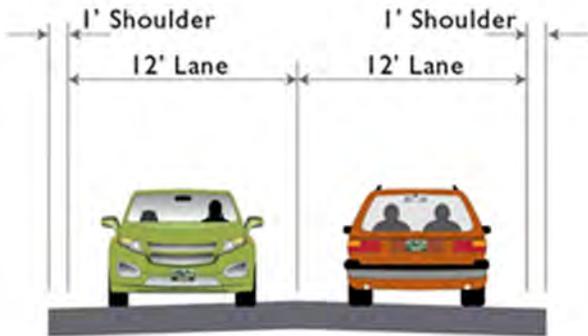
-Boulder County Transportation Master Plan, 2012

possible while ensuring the route remains a viable transportation corridor that anticipates regional population and employment growth.

The existing roadway geometric characteristics of SH 7 between 75th Street and US 287 are highly variable. SH 7 primarily consists of a two-lane cross-section with approximately 64 feet of right-of-way (**Figure 1.1**). Approaches from both directions on SH 7 at 75th Street are configured with two through lanes in each direction, while the remainder of the corridor consists of a single travel lane in each direction.

Shoulder widths vary, primarily due to varying auxiliary lane configurations. All shoulders are paved, but most are not curbed. Typical shoulder widths range between 1 and 12 feet. Auxiliary lanes are frequently provided at

Figure 1.1 Typical Cross-Section



Source: Felsburg Holt & Ullevig, 2016

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both signalized and stop-controlled public street intersections for deceleration and acceleration movements.

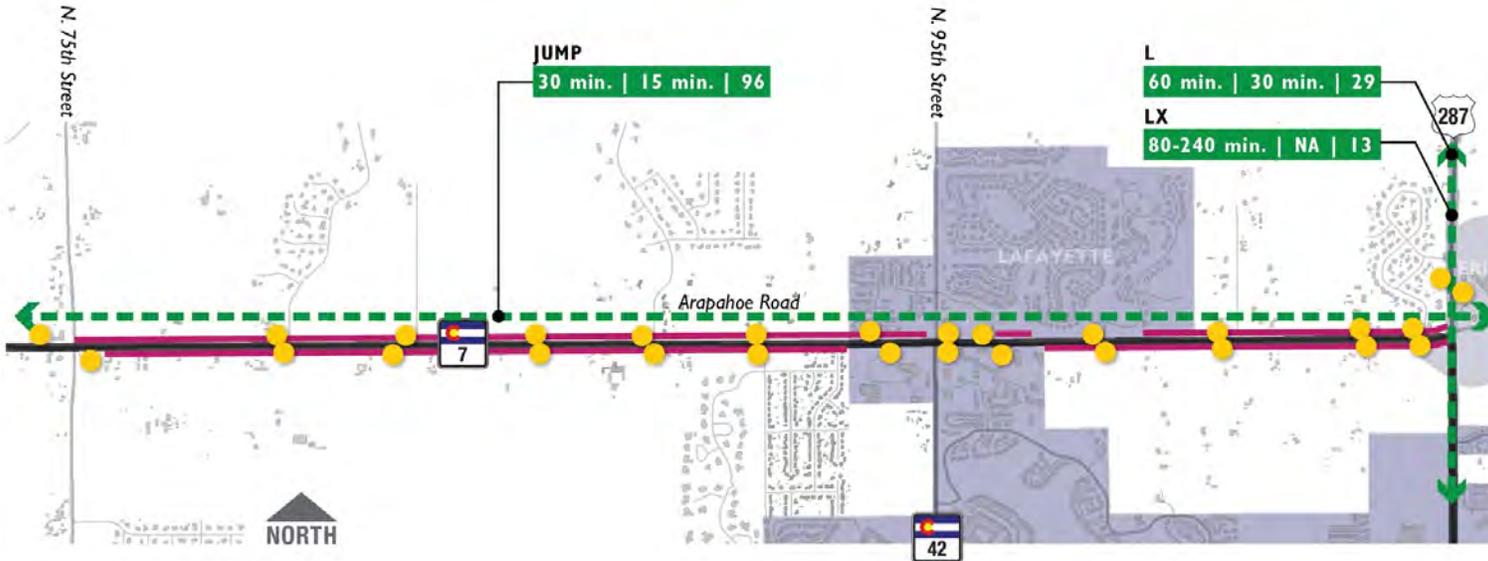
Most of the corridor has no center median, but when present, center median configurations vary significantly. Raised medians exist at the SH 7/75th Street intersection, as well as for channelized right-turn movements at other intersections including the SH 7/US 287 intersection. Most median configurations are painted and exist only near access drives and auxiliary lanes. Painted median widths range from 3 to 18 feet but typically range between 4 and 13 feet.

Bicycle lanes exist east of 75th Street; however, the corridor lacks consistently wide enough shoulder widths to provide safe travel for bicyclists along the rest of the corridor (**Figure 1.2**). No bicycle facilities exist along the

corridor. Pedestrian facilities consist of sidewalks concentrated around the three signalized intersections, with other sporadic sidewalk segments where residential and commercial land use is adjacent to SH 7. Most of the corridor does not include sidewalks.

RTD provides transit service along and across the corridor via two fixed bus routes. The JUMP provides east-west service between downtown Boulder, the University of Colorado in Boulder, and Lafayette/Erie along SH 7 (Arapahoe Road). The L/LX provides regional local stop service between Longmont, Niwot, Lafayette, and downtown Denver via US 36 and US 287 (LX runs as a supplement to L during peak periods), with the nearest stop to the corridor located on US 287 just north of its intersection with SH 7.

Figure 1.2 Existing Bus Routes and Missing Sidewalks



NOTE: No bike facilities exist along the corridor currently

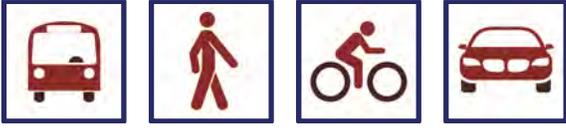
LEGEND

- Missing Sidewalk
- Bus Route
- Bus Stop

Route

Route	Frequency	Peak Frequency	Total Daily Trips
JUMP	30 min.	15 min.	96
L	60 min.	30 min.	29
LX	80-240 min.	NA	13

Source: RTD, 2016



What is the purpose of proposed transportation improvements?

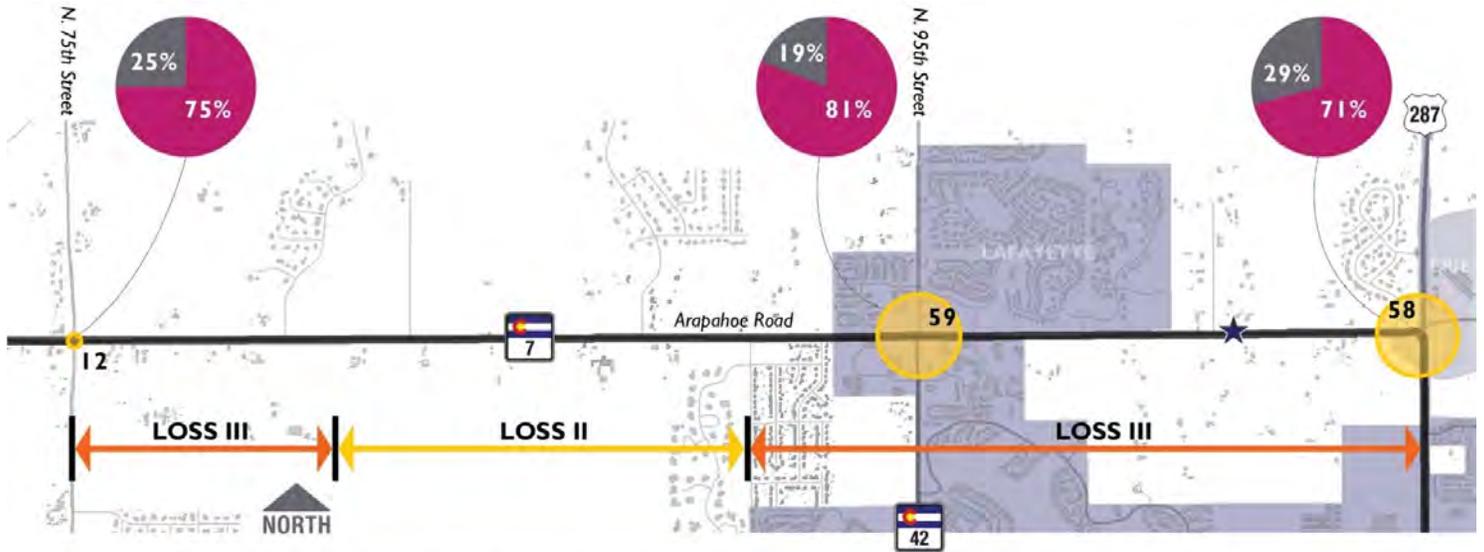
The purpose of the proposed multimodal transportation improvements is to address safety for all users and move people efficiently through the corridor.

Why are proposed transportation improvements needed?

Transportation improvements are needed to address:

- Safety Problem:** There is a higher than expected frequency of rear-end vehicle crashes at the SH 7/ 75th Street, SH 7/ 95th Street, and SH 7/US 287 intersections along the corridor, primarily due to traffic congestion and queuing that occurs at these intersections (**Figure 1.3**). The overall corridor also has a higher than expected frequency of rear-end crashes, when compared to similar rural facilities. However, despite being identified as a rural

Figure 1.3 Safety Summary



LEGEND

- Rear End
- Other
- Fatal Crash Location
- Relative Number of Crashes
- XX Number of Crashes (2010-2014)

Potential for Crash Reduction

- LOSS I = Low
- LOSS II = Low to Moderate
- LOSS III = Moderate to High
- LOSS IV = High

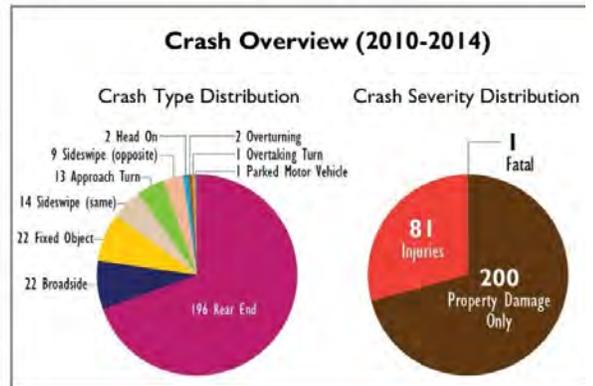
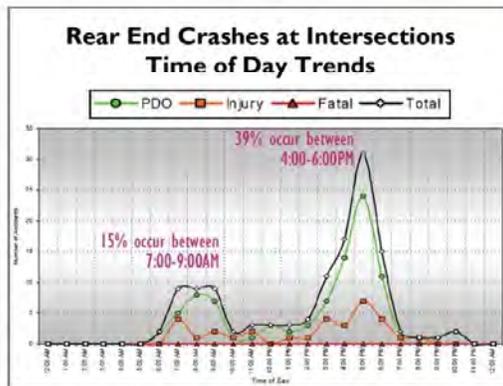


Table 1.1 City of Boulder Existing (2012) and 2035 Proposed Mode Share

Mode	Non-Resident Trips	
	City of Boulder’s Current (2012) Mode Share	Proposed 2035 Mode Share Targets
Pedestrian	0%	0%
Bicyclist	1%	2%
Transit	9%	12%
Single-occupancy vehicle	80%	60%
Multiple-occupancy vehicle	10%	26%

Source: City of Boulder, 2014.

Current Mode Share estimates are derived from the 2012 Travel Diary Survey. The Boulder Valley Employee Survey was also used to establish current mode share.

corridor, the roadway is similar to urban roadways because it carries a high volume of traffic and there are many driveways and stop-controlled intersections along the corridor. These access points may be leading to rear-end crashes when vehicles slow down to turn into an access, which in turn disrupts vehicles behind them. Some existing accesses to SH 7 are closely spaced along the corridor and are not designed to appropriate standards for roadway geometry, which also contributes to safety issues in the corridor. When compared to similar urban corridors, the frequency of rear-end crashes is close to the expected rate.

- Mobility Problem:** During peak hour operations, SH 7 is a commuter corridor for users travelling toward and from the City of Boulder from the communities along SH 7 and the surrounding area. Single-occupancy vehicles (SOV) are the predominant mode share (Table 1.1). SOV is approximately 80 percent of the City of Boulder’s current (2012) mode share for non-residents. The cumulative effects of this existing mode share split are increased parking demand and roadway network congestion exceeding capacity within the City of Boulder, City of Lafayette, and Boulder County.
- Bicycle Mobility Problem:** Infrastructure for and connectivity with the existing and planned bicycle network for bicyclists does not exist along the corridor (Figure 1.2). On-street bike lanes/wider shoulders

currently exists on West Baseline Road one mile south of SH 7. Boulder County anticipates additional investment in the bicycle facilities along West Baseline Road to accommodate growing bicycle demand. Today, bicyclists using the SH 7 must travel on extremely narrow shoulders or mixed with high speed vehicular traffic with a low level of comfort and safety.

- Pedestrian Mobility Problem:** Pedestrian facilities along the corridor consist of 8-foot detached sidewalks in the immediate vicinity of the SH 7/95th Street intersection (Figure 1.2). Pedestrian facilities do not exist within the remaining portions of the corridor Land uses and land use densities along the corridor generate limited pedestrian trips both today and in the future.



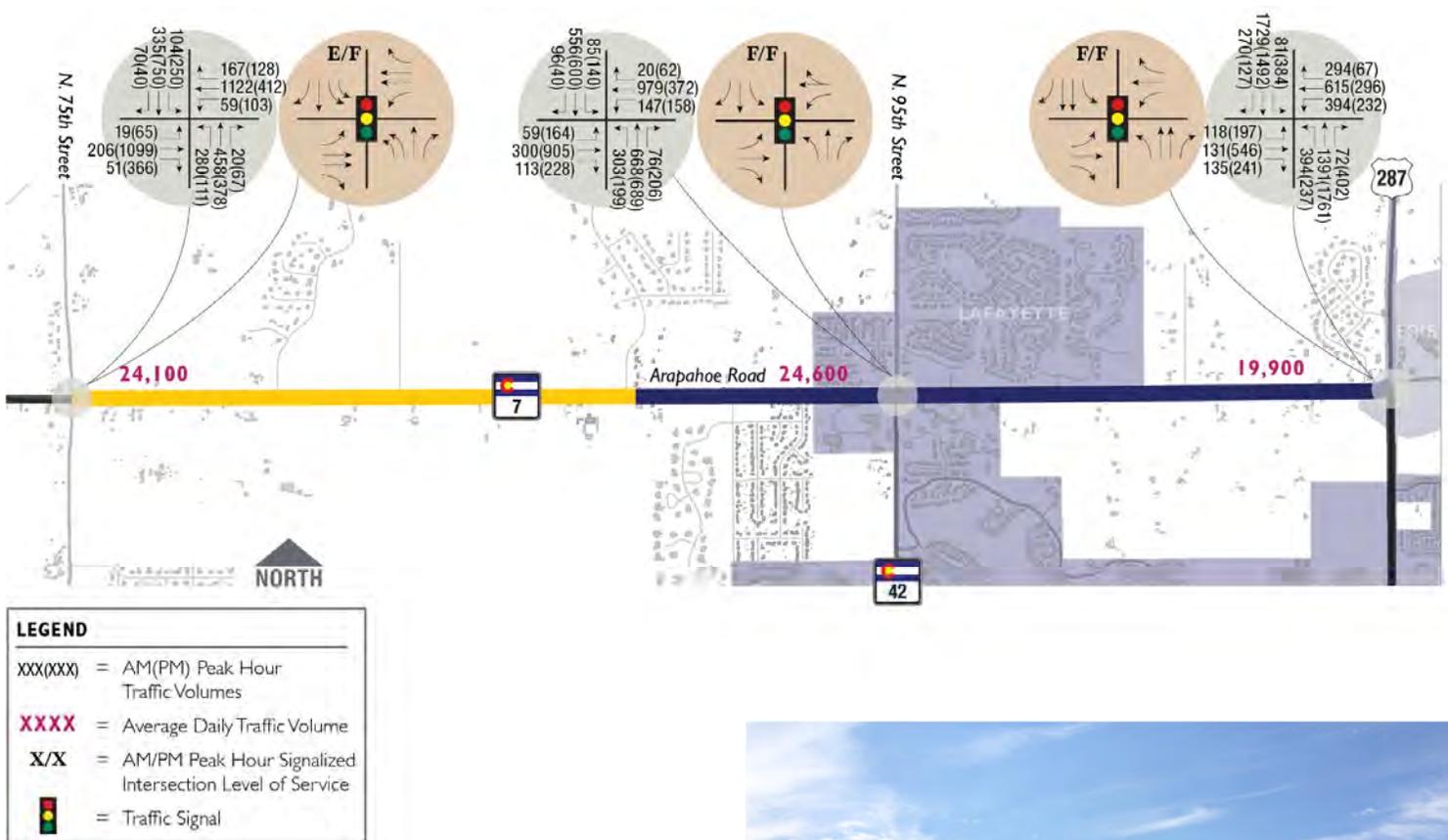
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However, bus service does exist along the corridor and demand for this service is expected to grow in the future. This service is largely accessed on foot and pedestrians accessing bus stops must travel on narrow shoulders or along the vegetated slope of the roadway, which creates a low level of comfort and perceived safety for the pedestrian.

bus stops along the corridor, the bus stops in the single travel lane causing significant operational and safety problems, as vehicles queue behind the stopped bus waiting for transit users to board and alight.

- **Transit User Mobility Problem:** At the SH 7/95th Street intersection, transit users can access the

Figure 1.4 Future (2040) Operational Conditions



Source: Felsburg Holt & Ullevig, 2016

- **Transit (Bus) and Vehicular Operational Problem:** Traffic (bus and vehicular) operations along the corridor and the SH 7/N. 75th Street, SH 7/95th Street, and SH 7/US 287 intersections are overcapacity today and are expected to worsen by 2040 (Figure 1.4) due to regional population and employment growth. Bus operations are affected by congestion at these intersections resulting in unreliable travel times and delays for transit users. At a number of



JUMP bus route stop via a sidewalk. Otherwise, Americans with Disabilities Act (ADA) compliant pedestrian facilities to access bus stops along the corridor do not exist. Bus stop amenities, such as benches and shelters, do not exist along the corridor, which creates a low level of comfort for boarding and alighting transit users.

What community objectives should these proposed transportation improvements meet?

Boulder County's transportation vision is to "provide high quality, safe, sustainable, and environmentally responsible transportation infrastructure and services across all modes, to meet the mobility and access needs of all users." The SH 7 (7th Street to US 287) PEL study is designed to establish a vision of how the future multimodal transportation system along SH 7 will fit with the County's vision and serve the communities along the corridor. The objectives of the transportation improvements are to:

- Provide a multimodal transportation system for all users
- Address inadequate first and final mile connectivity.
- Provide mobility and corridor solutions that preserve the natural, rural, and historic character of the corridor to the greatest extent possible.