

1.0 INTRODUCTION

The intent of the C-470 ELFS was to evaluate the design, operational and financial feasibility, and expected public acceptance of express lanes on the 26-mile C-470 beltway in the southwest Denver Metro area. The study was conducted concurrently with the C-470 Corridor Environmental Assessment (EA), which investigated possible solutions to congestion and studied reliability problems from Kipling Parkway to I-25. Alternatives developed in the ELFS would be carried forward into the EA for evaluation against other non-tolled alternatives.

C-470 is a four-lane beltway with 18 interchanges between I-70 and I-25. The western segment of the corridor typically carries travelers from the southwestern suburbs to the Denver Technology Center (DTC), to downtown Denver and the northern suburbs, to the Golden/Boulder area, and to the Rocky Mountains to the west. Commuters in the eastern corridor segment are typically traveling to DTC and adjacent offices (a regional employment hub with over 100,000 employees) from residential areas in the southwestern part of the metro area. As the corridor approaches full build-out, other smaller employment centers are being developed, resulting in less directional split during the peak hours. The segments that do not currently have severe congestion are projected to have such conditions by 2020. Future projected traffic volumes indicate that a phased implementation of express lanes may be viable. The concept being studied is to provide express toll lanes to the inside of free general purpose lanes. The express lane volumes would be managed by charging a variable toll to ensure reliable, free-flowing traffic conditions.

1.1 C-470 CORRIDOR HISTORY

C-470 was constructed in segments in the mid 1980s and early 1990s. Auxiliary lanes were added between the interchanges of I-70 and Morrison Road, and between Quebec Street and I-25. In the early 2000s, C-470 was extended from I-70 to US 6/SH 93, providing a direct connection to the US 6/SH 93 corridor through Golden.

The eastern segment of the regional beltway system is composed of the E-470 Expressway, a private tollway. The northwest segment is composed of the 11-mile-long Northwest Parkway, also a private tollway that connects I-25 with US 36. The remaining portion of the yet-to-be-completed northwest quadrant from US 36 to C-470 is currently being studied in the Northwest Corridor EIS. A vicinity map of the area is provided in Figure 1.1.

Figure 1.1
Vicinity Map



1.2 C-470 CORRIDOR NEEDS

Due to high traffic volumes, high ramp merging volumes, and lack of auxiliary lanes, heavy congestion occurs regularly throughout the corridor. Auxiliary lane widening and ramp metering installations have mitigated some of these problems; however, level of service (LOS) E/F are typical on most segments during the AM and PM peak hours. Overall, the congestion levels and reliability problems are more prevalent in the eastern segment from Wadsworth Boulevard to I-25. The C-470 Corridor EA has defined its purpose and need statement as solving congestion, delay, and reliability problems on the corridor between Kipling Parkway and I-25.

Since its completion in 1990, C-470 has served the transportation needs of communities throughout the southwest Denver metropolitan area. Currently C-470 carry's a total of 80,000 to 100,000 vehicles per day in the busiest sections. Existing peak hour volumes on C-470 range from 5,800 to 9,100 vehicles in both directions. Existing peak hour LOS on C-470 ranges from LOS C to LOS F. Existing peak hour delay on C-470 between Kipling Parkway and I-25 is estimated at approximately 11-18 minutes per vehicle.

By 2025, peak hour volumes on C-470 will increase 35 to 40 percent. Mainline C-470 will operate at approximately 30 percent over capacity relative to CDOT's acceptable LOS, which is 8,000 vehicles per hour in both directions. Nearly every link on C-470 will operate at LOS F during the peak hour. The peak hour delay between Kipling Parkway and I-25 will exceed 22 minutes per vehicle.

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