Chapter 1. Purpose and Need

Why Do We Need the US 34 Project?

The purpose of the proposed project is to provide an improved transportation facility between US 287 and LCR 3 that would meet the following needs:

- Improve current and future traffic mobility
- Improve transportation safety
- Accommodate 2030 travel demand

Chapter 1. Purpose and Need

1.1 Introduction

1.1.1 Where is the proposed project located?

This project encompasses approximately 6 miles of US 34 (also known as Eisenhower Boulevard) in Loveland, Colorado. The project corridor extends between a western terminus at US 287 (North Lincoln Avenue and North Cleveland Avenue one-way pair) and an eastern terminus of Larimer County Road 3 (LCR 3), 1.5 miles east of the I-25 interchange. This portion of US 34 is one of the most heavily traveled segments of US 34 in Colorado. Exhibit 1-1 shows the location of the project.

United States Highway 34 (US 34) is an east-west highway with a length of approximately 1,100 miles from Chicago to north central Colorado. Through Rocky Mountain National Park (west of the project corridor), US 34 is known as Trail Ridge Road, where it reaches an elevation of more than 12,000 feet.

Exhibit 1-1
US 34 Project Location

The following terms are used throughout this document. Project corridor refers to the portion of the US 34 highway described above and associated right-of-way only (shown in red on Exhibit 1-1). Study area refers to an area larger than the corridor width and associated with a particular resource. The width of the study area varies with the resource being analyzed. The length of the study area extends to Garfield Avenue on the west and approximately 1,200 feet past LCR 3 on the east (shown in gold on Exhibit 1-1).

The Proposed Action would not include ramps and long-term configurations for the I-25 interchange area, which could extend west beyond Rocky Mountain Avenue and as far east as LCR 3E. Environmental impacts and subsequent design related to I-25 would be addressed by the following projects:

- The Interim Improvements for the I-25/US 34 interchange (construction scheduled 2008)
- The North I-25 EIS (Draft Environmental Impact Statement expected in 2008)

The US 34 project is located within Loveland's Growth Management Area. The eastern portion of the project extends into the town of Johnstown, where US 34 provides a northern boundary between I-25 and LCR 3. Johnstown city limits then extend to both sides of US 34 between LCR 3 and Weld County Road (WCR) 13.

In its 2030 Regional Transportation Plan, the North Front Range Metropolitan Planning Organization (which is the North Front Range Transportation and Air Quality Planning Council or NFRT & AQPC) identified US 34 as a roadway within a network of Regionally Significant Corridors.[1] US 34 provides access to adjacent businesses and downtown Loveland, as well as serving as a gateway to Rocky Mountain National Park, 32 miles to the west.

1.1.2 Why is CDOT proposing this project?

The purpose of the proposed project is to provide an improved transportation facility between US 287 and LCR 3 that would meet the following needs:

1. Improve current and future traffic mobility
2. Improve transportation safety
3. Accommodate 2030 travel demand

1.1.3 What are the project termini?

The project termini are US 287 on the west and LCR 3 on the east. CDOT and the Federal Highway Administration (FHWA) evaluated the Proposed Action for US 34 between US 287 and LCR 3 in the *Logical Termini Discussion Memo US 34 from US 287 east to Larimer County Road 3* (JFSA 2005a) and *Addendum to Logical Termini Discussion Memo US 34 from US 287 east to Larimer County Road 3* (JFSA 2005b). CDOT and FHWA concluded in June 2005 that the US 34 Proposed Action met the criteria for logical project termini.

1.1.4 Who is leading the project?

FHWA is the lead agency. CDOT is conducting this study and will work closely with the City of Loveland, the Town of Johnstown, and Larimer County to identify the best solutions for the US 34 corridor. FHWA will make the final decision on the selection of a Preferred Alternative.

1.1.5 What does the US 34 study area look like today?

The US 34 study area is located within southeastern Larimer County, within the Loveland and Johnstown city limits. Topography along the corridor is generally flat. Exhibit 1-2 describes and illustrates the US 34 project corridor.

The view of existing US 34 is as varied as the foreground viewshed. US 34 intersections include various numbers of turn lanes, and median design varies from painted to raised. The existing US 34 does not affect visibility of adjacent businesses or mountain background views.

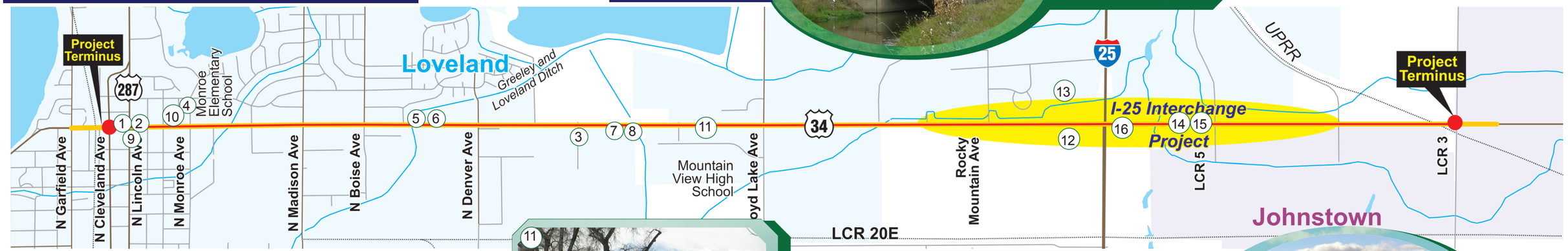
[1] The North Front Range Metropolitan Planning Organization (NFR MPO) defines a regionally significant corridor as "an important link in a multi-modal, regional network comprised of existing or new transportation corridors that connect communities and/or activity centers by facilitating the timely and safe movement of people, goods, information and services." Within that definition, US 34 is identified as a regionally significant roadway (see NFR MPO TAC Follow Up 012306 - Supplemental Result). Parallel regionally significant roadways include SH 402 to the south and Crossroads Boulevard to O Street to the north. Together, these facilities provide commuter access and make east-west connections within the Loveland, Greeley, Evans, Johnstown, and Windsor areas (see *North Front Range MPO Regionally Significant Corridors*, August 8, 2003).

Due to the generally flat topography and the density of the development adjacent to US 34, there is little opportunity for middleground views (one-half mile to three miles). Westbound travelers will glimpse the Rocky Mountain Front Range, including Long's Peak, on clear days in the distant background (see photo 16).

Monroe Elementary School provides a bit of grassy lawn in contrast to the storefronts and paved parking lots.

The Boyd Lake Outlet Exchange Ditch provides a glimpse of riparian and wetland vegetation if the traveler is not observing the swatch of mature blue spruce trees in the median.

A glimpse of open water is provided as US 34 drivers pass over the Greeley and Loveland Ditch. A pedestrian underpass adjacent to the ditch provides a trail connection under US 34.



For the eastbound traveler, the project foreground (from view to one-half mile) shows remaining small businesses mixed with a collection of fast food establishments, newer big box commercial, and neighborhood commercial strips.

Historic Hill and Schmer Farms represent some of the last active agricultural land uses adjacent to the project.

The Loveland Chamber of Commerce and Visitor Center is set next to the McWhinney-Hahn Sculpture Park on the north side of US 34 at I-25.

Commercial and business land uses have rapidly developed on both sides of the I-25 and US 34 interchange. Loveland and Johnstown have both expanded to the east.

US 34 Environmental Assessment

US 287 to Larimer County Road No. 3

Exhibit 1-2
US 34 Photo Essay

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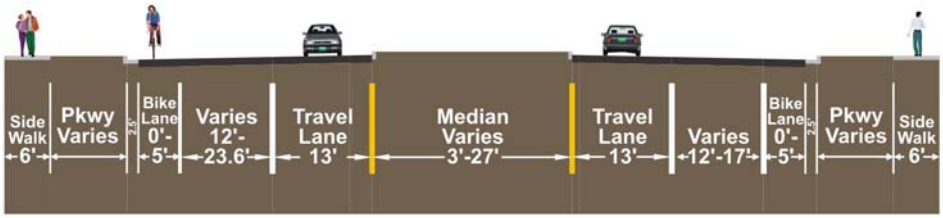
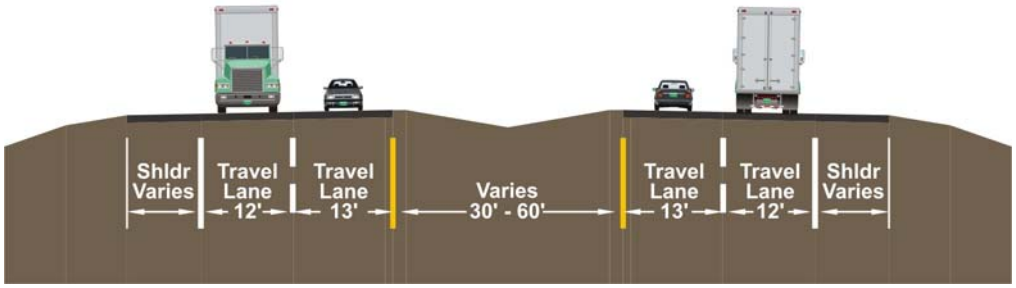
The cross section varies today with less flexibility in width west of the Greeley and Loveland Ditch due to proximity to the older established downtown Loveland area and its historically narrower highway. Median and shoulder widths are wider east of the ditch as a result of previous widening projects dating from the 1960s to the present as undeveloped land was available. Exhibit 1-3 illustrates the range of variation in the existing cross section.

Exhibit 1-3
Existing US 34 Cross Sections

Garfield Avenue to Greeley & Loveland Ditch



Greeley & Loveland Ditch to LCR 3



1.2 Current and Future Traffic Mobility on US 34

1.2.1 What is mobility?

Mobility involves making the best use of time when connecting people with their work, school, community services, marketplaces, and each other. Congestion creates problems for mobility. Congestion is directly related to the ability of a transportation facility to carry travelers and goods efficiently. Key elements for identifying potential congestion on highways are the cross section of the highway and the level of service. The cross section (see Section 1.1.5) identifies the number and width of lanes and shoulders, as well as other typical highway features such as turn lanes and medians. Level of service (see Section 1.2.3) measures how well traffic operates. Mobility and safety are tied together closely (see Section 1.3).

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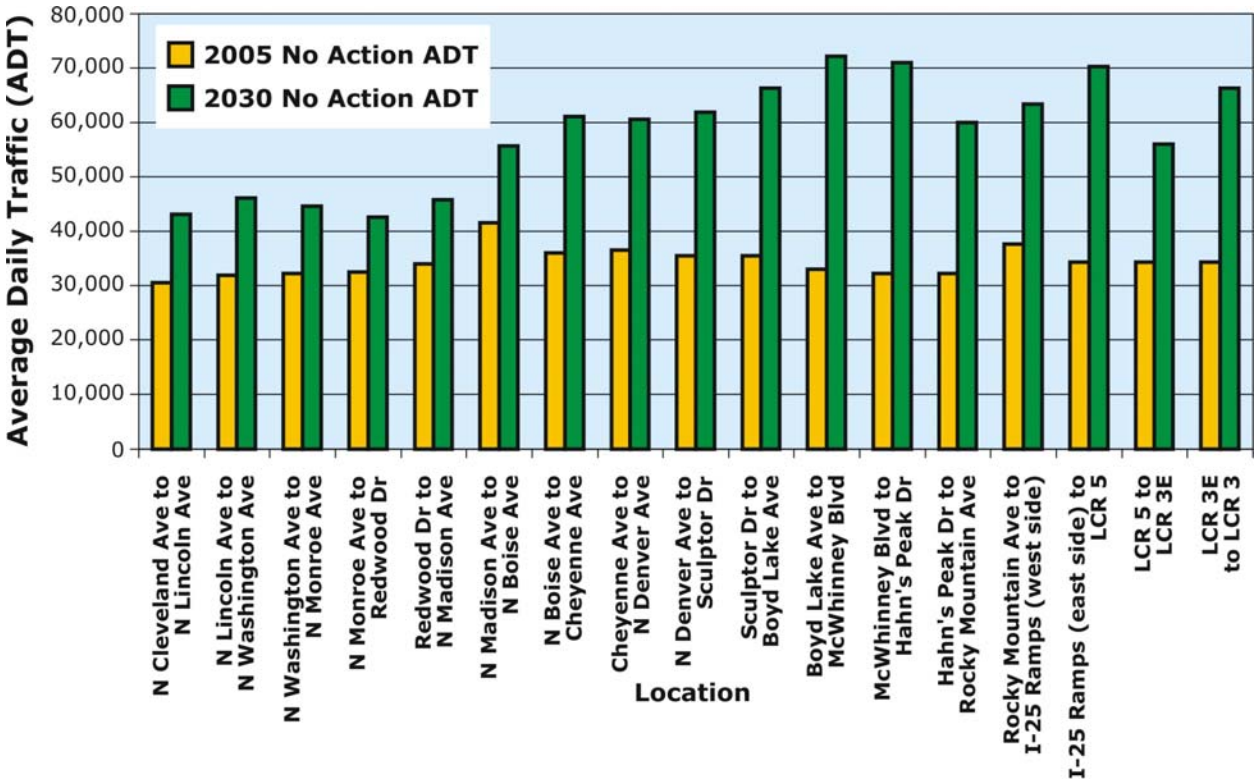
- Accommodate 2030 travel demand

1.2.2 How much traffic does US 34 carry today? How much will it carry tomorrow?

Information on how US 34 operates today and is expected to operate in the future is shown first by comparing traffic volumes. Exhibit 1-4 is based on output from the North Front Range Metropolitan Planning Organization (NFR MPO) travel demand forecasting model as explained below. The model follows a four-step process, which looks at origin, destination, type (such as car or bus), and assigned value of vehicle trips. The model's output is average daily traffic for a typical weekday during the school year, as shown on Exhibit 1-4. Peak summer tourist season daily traffic and some weekend daily traffic numbers will be higher. Exhibit 1-4 shows both existing 2005 and 2030 traffic if there is no project (No Action).

Exhibit 1-4
Existing and Future Traffic



The highway network used in the NFR MPO travel demand model is based on a fiscally constrained regional long-range transportation plan that includes the proposed US 34 project. Projects that change highway capacities and speeds and are likely to be funded by 2030 based on financial resources available to the region are reflected in the network assumptions of the model. The traffic volumes from the NFR MPO model served as the baseline for the US 34 2030 traffic analysis. These baseline totals were not changed for the US 34 project traffic analysis, although traffic numbers were redistributed based on sensitivity to the Loveland traffic network.

Because the NFR MPO model area is large (1,100 square miles), the less significant roadways (community and neighborhood level streets) are not represented in the model. Consequently, for analysis on this project, discretion from NFR was needed in determining which existing roadways should be added to the

roadways normally included in the model's region-wide network. CDOT coordinated with the City of Loveland and Town of Johnstown in making these adjustments. The US 34 traffic analysis focused on a much smaller part of the NFR region, a narrow 6-mile corridor. Accurately representing travel patterns within the US 34 corridor required adjustment to, and inclusion of, local access roadways. These do not have much impact on regional travel patterns but are important considerations when sizing and designing intersection improvements. In a rapidly developing area such as that along US 34, it was also important for the model to reflect new local streets that would accept traffic from or deliver traffic to US 34.

1.2.3 How does US 34 operate today?

When analyzing roadway operations, level of service (LOS) of the through traffic and intersections is typically taken into consideration (see Exhibit 1-5). Due to the close proximity of intersections along US 34 between US 287 and LCR 3, it was decided that intersection LOS would better reflect the existing and future traffic conditions along this portion of US 34.

Exhibit 1-5
Characteristics of Intersection Level of Service

Intersection Based on Vehicle Seconds of Delay			
Delay Description	Level of Service	Signalized Intersection Seconds of Delay	Unsignalized Intersection Seconds of Delay
Minimal or no vehicle delay	A	≤ 10	≤ 10
Slight delay to vehicles	B	> 10 - 20	> 10 - 15
Moderate vehicle delays, traffic flow remains stable	C	> 20 - 35	> 15 - 25
More extensive delays at intersections	D	> 35 - 55	> 25 - 35
Long queues create lengthy delays	E	> 55 - 80	> 35 - 50
Severe delays and congestion	F	> 80	> 50

The factors used to determine LOS differ with the type of highway and intersection. Intersection LOS is based on vehicle seconds of delay. Achieving intersection LOS D is the goal for level of service along the heavily developed US 34 corridor.[2] LOS D design also complies with City of Loveland transportation plan requirements. *Larimer County Urban Area Street Standards* and the *Colorado State Highway Access Code* also apply to the design of US 34.

[2] The Rural and Urban Arterials category from the American Association of State Highway and Transportation Officials (AASHTO) design guide recommends that urban arterials and their auxiliary facilities (turning lanes, intersections, and interchanges) should generally be designed for LOS C. Although LOS C is optimal for urban settings, heavily developed areas may use LOS D as an appropriate standard (AASHTO *Green Book*, 2004, fourth edition).

Exhibit 1-6 shows the existing intersection performance for 2005, quantified by the LOS by direction of approach as well as for the entire intersection, and by overall intersection delay. There is a wide range of LOS at intersections along US 34 today. This is in part due to variations in intersection design and variations in numbers of or length of left turn lanes. Traffic volumes are also a key factor.

Exhibit 1-6
2005 Intersection Average Delay (in seconds) and Level of Service (LOS)

Intersection Name	Level of Service (LOS)				Overall Int. Delay	Overall Int. LOS
	EB	WB	NB	SB		
N Cleveland Ave	D	B	NA	C	31	C
N Lincoln Ave	C	C	E	NA	40	D
N Washington Ave	A	A	B	E	10	A
N Monroe Ave	C	C	D	B	12	B
Redwood Dr	D	B	C	C	35	C
N Madison Ave	D	E	D	D	69	E
N Boise Ave	C	E	D	D	56	E
Cheyenne Ave	A	A	NA	E	NA – Stop sign only	
N Denver Ave	C	C	D	C	30	C
Boyd Lake Ave	A	B	C	B	11	B
McWhinney Blvd	A	A	NA	B	NA – Stop sign only	
Rocky Mountain Ave	B	B	NA	C	18	B
LCR 3	A	A	F	F	12	B

Source: JFSA, May 20, 2005
NA: Not applicable

1.2.4 How will US 34 operate in 2030 if no improvements are made?

Exhibit 1-4 provides a comparison of 2005 and 2030 traffic on US 34 if no action is taken. Forecasts show that traffic increases between 2005 and 2030 would range from 31 percent on the western portion of the corridor (where adjacent areas are already fully developed and, therefore, are less likely to change and generate new traffic) to as high as 120 percent for the eastern portion (where development on open land is underway today and expected to continue into the foreseeable future).

Because the 2030 NFR MPO model network did not include all of the local streets and proposed improvements in the vicinity of US 34, the network was revised to reflect these details. These revisions are reflected in the future ADTs shown in Exhibit 1-4. These changes included braided ramps between I-25 and Centerra Parkway (LCR 5), a new interchange at Kendall Parkway (LCR 3E), a new two-lane arterial south of and parallel to US 34 between I-25 and LCR 3 connecting with LCR 20E on the west, and the extension of Kendall Parkway north and west across I-25 to Rocky Mountain Avenue. Additional corrections were made to the network west of I-25 for omitted, newly completed, or proposed arterials and collectors that feed into US 34, including but not limited to McWhinney Boulevard, Sculptor Drive, and Hahn's Peak Drive. The sensitivity of the 2030 network model to these changes in the network resulted in less than a 10 percent increase or decrease in traffic on US 34. For the No Action Alternative (assuming the current roadway cross section remains), LOS E and LOS F would occur throughout intersections regardless of these improvements, as shown on Exhibit 1-7.

> Minimum LOS for US 34 in 2030 should be D. Without the project, US 34 would function at LOS E and F.

Exhibit 1-7
2030 No Action Intersection Overall Delay (in seconds) and Level of Service (LOS)

Intersection Name	Level of Service (LOS)				Overall Int. Delay	Overall Int. LOS
	EB	WB	NB	SB		
N Cleveland Ave	F	B	NA	F	>900	F
N Lincoln Ave	F	C	F	NA	567	F
N Washington Ave	F	C	F	F	307	F
N Monroe Ave	F	B	F	B	96	F
Redwood Dr	F	B	D	D	151	F
N Madison Ave	F	C	F	F	166	F
N Boise Ave	F	F	D	F	171	F
Cheyenne Ave	F	B	NA	F	NA – Stop sign only	
N Denver Ave	B	F	F	F	66	E
Sculptor Dr	C	F	F	F	76	E
Boyd Lake Ave	E	F	F	F	282	F
McWhinney Blvd	F	F	NA	F	NA – Stop sign only	
Hahn's Peak Dr	C	F	NA	B	80	F
Rocky Mountain Ave	B	F	NA	F	857	F
LCR 5 (Centerra Pkwy/Thompson Pkwy)	F	E	F	D	381	F
LCR 3E (Kendall Pkwy/Larimer Pkwy)	D	D	F	F	295	F
LCR 3	A	F	F	F	525	F

NA = Not applicable

If no improvements are made to US 34, the first element of project purpose and need, to improve current and future traffic mobility, would not be met.

1.3 US 34 Safety Issues

1.3.1 What types of crashes occur along US 34 today?

In the five-year period from January 1, 1999, to December 31, 2003, a total of 821 crashes were recorded for US 34 between milepost 91.85 (US 287) and milepost 97.85 (LCR 3). This total included 121 crashes related to the I-25 interchange (I-25 ramps and mainline), resulting in 700 recorded crashes directly on US 34. The US 34 corridor has a relatively high number of intersection and driveway accesses (business, residential, and farm accesses), and most of the crashes recorded (471) are at these locations. Exhibit 1-8 summarizes the total number of crashes along the US 34 corridor between US 287 and LCR 3 for this five-year period, by severity.

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Exhibit 1-8
Number of Crashes by Year on US 34 between US 287 (MP 91.85) and LCR 3 (MP 97.85)
(I-25 Mainline Crashes included)

Year	Number of Crashes by Severity			
	Property Damage Only	Injury	Fatality	Total
1999	86	54	0	140
2000	81	55	1	137
2001	108	68	1	177
2002	110	67	0	177
2003	113	77	0	190
1999 – 2003	**498**	**321**	**2**	**821**

Source: CDOT

Exhibit 1-9 shows the distribution of crashes based on location; that is, whether the crash occurred at intersections or through sections. The data show that more than 58 percent of the crashes were at intersections or were intersection related (when adding driveways, this percentage increased to 67.5 percent).

Exhibit 1-9
US 34 (MP 91.85 – MP 97.85) Crash Distribution by Location

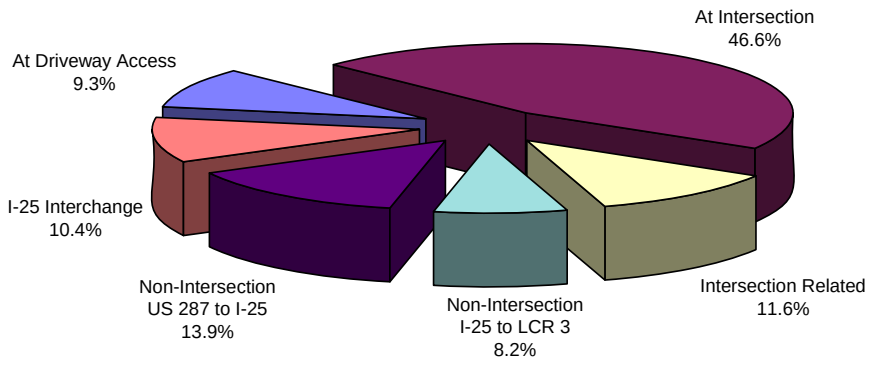
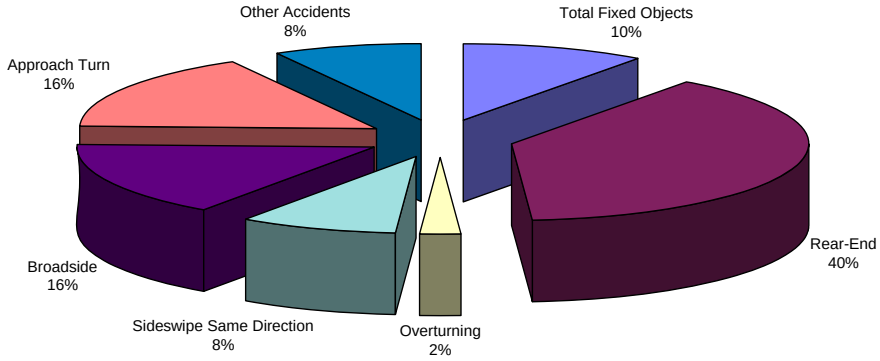


Exhibit 1-10 illustrates the distribution of crashes by type for the project corridor. The three highest crash types recorded are rear-end crashes, followed by broadside and approach turn crashes.

Exhibit 1-10
US 34 (MP 91.85 – MP 97.85) Crash Distribution by Type



1.3.2 How serious are these crashes compared with similar Colorado highways?

The project corridor was divided into two parts for the Weighted Hazard Index (WHI) analysis. US 34 is considered as an "urban other principal arterial" between US 287 (milepost 91.85) and the west side of I-25 (milepost 96.10) and as a "rural other principal arterial" between the east side of I-25 (milepost 96.45) and LCR 3 (milepost 97.85). Because the US 34 Proposed Action does not address specific improvements to the ramps or mainline I-25 at US 34, the remainder of this discussion excludes crash data for I-25. Exhibit 1-11 shows the average WHI and weighted crash rate by section.

What is WHI (weighted hazard index)?

WHI is a statistic computed by considering accident frequency, accident severities (injuries and fatalities), traffic volume within a section, length of the section, and a comparison with the accident history of similar highways. Positive WHI values indicate highway sections that have an accident frequency/severity history higher than the statewide average. Negative WHI values indicate highway sections that have frequency/severity history lower than the statewide average (CDOT Highway Safety Improvement Program, August 2002).

What are weighted crash rates?

Weighted crash rates (per million vehicle miles of travel) are the sum of the number of property damage-only crashes, the number of injury crashes multiplied by five, and the number of fatal crashes multiplied by 12, thus giving more "weight" to more severe accidents.

Exhibit 1-11
Weighted Crash Rate and Five-Year Average WHI by Section on US 34 (MP 91.85 – MP 97.85)

Section	Milepost	Weighted Crash Rate*	WHI
Urban (US 287 - I-25)	91.85 - 96.1	6.31	-5.13
Rural (I-25 - LCR 3)	96.45 - 97.85	3.55	-0.10

Exhibit 1-12 provides a crash summary for the major intersections along US 34 between US 287 and LCR 3 (milepost 91.85 to milepost 97.85). The first entry, North Cleveland Avenue to North Monroe Avenue, is a summation of the crashes of six intersections between North Cleveland Avenue and North Monroe Avenue, since they are closely spaced and cannot be considered isolated from each other. When severity is "higher than expected," this is the result of crash data being statistically higher than the statewide average.

Crash Summary for US 34 (1999 to 2003)

Based on the WHI, US 34 crashes were not more frequent or more severe than the statewide averages for this type of highway.

67.5 percent of accidents on US 34 were intersection related or driveway related.

Rear-end, followed by broadside and approach turn crashes, were the three highest frequency crash types recorded.

Although the WHI is below the statewide average for this type of highway, injury crash rates were higher than expected at the following intersections: Redwood, North Madison, North Boise, Cheyenne, North Denver, Boyd Lake and Rocky Mountain.

The trend toward higher than expected intersection crash rates is expected to continue and increase as traffic congestion increases. Some intersections or small portions of US 34 could improve based on local community or developer projects.

Exhibit 1-12
Crash Characteristics at Intersections (1999 – 2003)

Cross Street	Number of Crashes	Severity	Crash Type(s) with High Frequency
N Cleveland Avenue – N Monroe Avenue	145	Injury crash at expected or lower than expected	Rear end (44%), broadside (30%), and approach turn (16%)
Redwood Drive	21	Injury crash higher than expected	Approach turn (38%) and broadside (33%)
N Madison Avenue	51	Injury crash higher than expected	Approach turn (39%)
N Boise Avenue	35	Injury crash higher than expected	Approach turn (37%)
Cheyenne Avenue	7	Injury crash higher than expected	Rear-end (71%)
N Denver Avenue	41	Injury crash higher than expected	Rear-end (55%)
LCR 11	3	Injury crash at expected or lower than expected	Approach turn (46%)
Boyd Lake Avenue	47	Injury crash higher than expected	Approach turn (57%)
Rocky Mountain Avenue	25	Injury crash higher than expected	Rear-end
Frontage Road East of I-25	49	Injury crash at expected or lower than expected	Broadside (35%), rear-end (18%)
LCR 3	8	Injury crash at expected or lower than expected	None

1.3.3 What can be expected if no improvements are made?

Although US 34 crash rates compared favorably with statewide averages, there was a higher than expected injury accident rate at intersections. Increasing congestion could lead to crash rate increases and a higher WHI.

If no improvements are made to US 34, increasing congestion could lead to crash rate increases and a higher WHI.

1.4 2030 Travel Demand Issues

Travel demand is calculated by identifying trip generation, distribution, mode, and traffic assignment. For this project, travel demand was forecast for 2030. Because travel demand is forecast based on assumptions about land use and growth, additional information is provided in this section on land use and growth.

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⇨ **Accommodate 2030 travel demand**

1.4.1 How much is travel demand expected to increase by 2030?

Traffic volume increases are generally expected as follows by 2030:

- 31 to 42 percent between US 287 and North Boise Avenue
- 66 to 87 percent between North Boise Avenue and Boyd Lake Avenue
- 69 to 120 percent between Boyd Lake Avenue and Rocky Mountain Avenue
- 63 to 105 percent between Rocky Mountain Avenue and LCR 3

The area to the west that consists of older neighborhoods and commercial strips would be expected to result in the smallest increase in travel demand. The most substantial increases would be associated with the extensive retail development to the east. Exhibit 1-4 provided more specific comparisons by highway segment.

1.4.2 How are land use and development patterns related to travel demand?

Land use patterns influence the travel demand on transportation corridors, and future land use plans shape how each corridor will be maintained and potentially improved. Projected land use for a corridor needs to be taken into account when examining transportation improvement projects. The ability of the Proposed Action to accommodate future traffic induced by land use can be used as a decision-making tool in transportation alternative analysis. The relationship between highway access and land use is discussed in Section 1.4.3.

As with other Colorado Front Range counties, Larimer County has experienced substantial growth since the 1970s. County population grew 66 percent between 1970 and 1980, then slowed to 25 percent between 1980 and 1990, and rose again to 35 percent between 1990 and 2000. While state forecasts for Larimer County population (Colorado Department of Local Affairs [DOLA], Demography Section, 2003) show a conservative 75 percent growth between 2000 and 2030 (25 percent every 10 years), actual growth could be as much as 100 percent based on the current trend of 35 percent every 10 years.

The city of Loveland has also experienced tremendous growth since the 1970s. Population grew 86 percent between 1970 and 1980, 24 percent between 1980 and 1990, and 35 percent between 1990 and 2000. Loveland population trends are estimated to follow or exceed county trends between 2000 and 2030 based on the current trends for the city.

Johnstown has only recently experienced significant growth. Exhibit 1-13 summarizes growth patterns for the county and both communities.

Exhibit 1-13
Population Growth Trend Information for Larimer County, Loveland and Johnstown

Location	1970	1980	% Change	1990	% Change	2000	% Change	2005
Larimer County	89,900	149,184	66%	186,136	25%	251,494	35%	283,000
Loveland	16,220	30,215	86%	37,352	24%	50,608	35%	61,871
Johnstown	1,191	1,535	29%	1,579	3%	3,879	146%	7,575

Source: 1970 – 2000 Compiled by Colorado DOLA, Demography Office from US Census Bureau Records. 2005 data taken from local government web sites.

NFR MPO traffic modeling assumptions for the area immediately adjacent to US 34 are that population would grow approximately 26 percent total over the next 30 years while employment would grow 164 percent. This information reflects the nature of the US 34 study area, a rapidly developing retail and business employment focus with small increases in residential development.

Chapter 3, Section 3.1 of this EA describes social, economic, and land use activities in the US 34 study area. The sections that follow focus on the US 34 corridor's relationship to local and regional planning.

1.4.3 How do CDOT access planning objectives affect land use and property owners along US 34?

General planning goals and objectives along US 34 include maintaining and enhancing the functional integrity of US 34 in order to move people and goods in the corridor in the safest and most efficient manner possible. This is done by reducing the number of access points and requiring all new access points to comply with the Colorado State Highway Access Code.

Due to the recent and continuing development along US 34, *Colorado State Highway Access Code* compliance has been implemented along with new developments. The older, previously developed portions of the corridor toward the west end include areas where access may need to be revised as a part of the ultimate US 34 improvement project. (See Chapter 3, Section 3.3.1.2 of this EA for additional discussion on access.)

CDOT's *US 34 Corridor Optimization Plan Final Report,* March 2003 (COP) analyzed a 25-mile segment of US 34 extending from I-25 east through the town of Kersey. The only portion of the COP relevant to the US 34 EA is the segment between I-25 and LCR 3. The COP supports the widening of US 34 to six lanes including the accommodation of an on-street bike lane. It also calls for the interim construction of signalized intersections with dual left turn lanes and a right turn lane along all four approaches together with the implementation of advanced signal timing for the following locations: LCR 5 (Centerra Parkway/Thompson Parkway), LCR 3E (Kendall Parkway/Larimer Parkway), and LCR 3.

A separate and overlapping effort to the COP included the development of *US 34 Access Control Plan Final Report*, May 2003 (ACP). The ACP includes detailed discussion of the following intersections: LCR 5, LCR 3E, the UPRR Crossing, and LCR 3. The ultimate plan identified in both the COP and ACP includes three grade-separated highway interchanges and a grade-separated railroad crossing at these locations.

1.4.4 How is US 34 related to Loveland and Johnstown land use plans and policies?

The NFR MPO population and employment forecasts for the US 34 corridor are consistent with Loveland and Johnstown plans and policies. The travel demand forecast is consistent with the adopted land use plans and policies for the project corridor. Improvements for US 34 are also consistent with the travel demand forecast. Relevant details of Loveland and Johnstown land use plans and policies are described below.

Local planners anticipated population and employment growth in this area. In the 1980s an Intergovernmental Agreement (IGA) between Larimer County and the City of Loveland resulted in development of the Loveland Growth Management Area (GMA). The primary purpose of the GMA is to focus urban development adjacent to cities and towns in areas that could be annexed. The IGA was updated in November 2003. US 34 between US 287 and LCR 3 is fully contained within the Loveland GMA. LCR 3 is the eastern boundary of the GMA.

US 34 between I-25 and LCR 3 serves as the northern boundary of the Johnstown city limits and its Urban Growth Area. The *Johnstown Area Comprehensive Plan* (November 2006) shows retail/commercial development the entire length of their northern boundary and extends its Urban Growth Area Boundary east to WCR 19. Also note that Johnstown has subsequently expanded its boundary to the north and east of US 34 and LCR 3, beyond the Loveland GMA.

1.4.5 How is US 34 included in area transportation plans?

The City of Loveland's *East/West Mobility Study* (February 1997) identified a roundabout design concept for the intersection of US 287 (North Cleveland and North Lincoln Avenue one-way pair) with US 34. The Action Alternative footprint shown in this EA does not preclude a roundabout design should that be determined the best way to manage traffic at that location.

The Loveland 2020 (updated October 8, 2001) and draft 2030 (August 15, 2006) transportation plans includes US 34 widened to six lanes between US 287 (Lincoln Avenue) and LCR 3. City of Loveland Resolution 101-2001 is being amended to include the section of US 34 west of Lincoln Avenue. US 34 is also shown as a major transit corridor for bus service and a bicycle corridor with on-street bicycle lanes throughout.

The NFR MPO *2030 Regional Transportation Plan* shows US 34 as a roadway that is part of the network of "Regionally Significant Corridors."

Projects listed in the *City of Loveland Draft 2030 Fiscally Constrained Plan* include:

- US 34 from Madison Avenue east to LCR 3 (anticipated fund sharing with CDOT)

Centerra Metro District projects, which involve some aspect of US 34 from minor ditch improvements to full grade-separated interchanges, include:

- US 34: I-25 to LCR 3E (Cordova Pass Drive)
- US 34 and I-25 Interim Interchange
- US 34 and LCR 5 Interchange
- US 34 and LCR 3E Interchange
- Ultimate US 34 and I-25 Interchange
- Boyd Lake Avenue: US 34 and the Canal
- US 34 Boyd Lake to I-25
- Fall River Drive at US 34
- US 34 Culvert at Farmers Ditch

Projects listed by the NFR MPO in its *2030 Fiscally Constrained Plan* include:

- US 34 Improvement Project
- US 34/US 287 Intersection Rebuild
- I-25 and US 34 Interchange
- US 34 west of LCR 3–UPRR Grade Separated Crossing without LCR 3

1.4.6 What can be expected if no improvements are made?

If no improvements are made, the third element of project purpose and need, to accommodate 2030 travel demand, would not be met. This would be demonstrated by a lack of improved traffic flow to/from approved land uses and associated property developments. Safety and access problems would also be expected.

> The existing four-lane US 34 with insufficient through lane and turning capacity would not meet 2030 travel demand.

1.5 Project Need Summary

Exhibit 1-14 summarizes what would occur without the Proposed Action, with project needs criteria left unmet.

Exhibit 1-14
Project Needs Summary

Mobility Needs (Improved Level of Service)	Transportation Safety Needs (Reduction in Crash Rates)	2030 Travel Demand (Capacity Increase)
Minimum LOS for US 34 in 2030 should be D. Without the project, US 34 would function at LOS E and F.	If no improvements are made to US 34, increasing congestion could lead to crash rate increases and a higher WHI.	The existing four-lane US 34 with insufficient through lane and turning capacity would not meet 2030 travel demand.