

# US 287

ENVIRONMENTAL OVERVIEW STUDY

## US 287 Loveland to Fort Collins, Colorado Environmental Overview Study



*US 287 Looking South midway between Loveland and Fort Collins*

January 2007



# US 287

ENVIRONMENTAL OVERVIEW STUDY

## US 287 Loveland to Fort Collins, Colorado Environmental Overview Study

If you have any questions, contact:

**Carol Parr**  
Project Manager



Region 4

1420 Second Street  
Greeley, CO 80631  
Phone: 970/350-2170

E-mail: [Carol.Parr@dot.state.co.us](mailto:Carol.Parr@dot.state.co.us)

**Gloria Hice-Idler**  
Access Manager



Region 4

1420 Second Street  
Greeley, CO 80631  
Phone: 970/350-2148

E-mail: [Gloria.Hice-Idler@dot.state.co.us](mailto:Gloria.Hice-Idler@dot.state.co.us)

January 2007



## **Local Agencies, Representatives and Consultant Team**

---

**Colorado Department of Transportation  
Region 4  
1420 Second Street  
Greeley, CO 80631**  
Project Manager Carol Parr  
Deputy Project Manager Long Nguyen  
Stan Elmquist  
Rick Gabel  
Bob Grube  
Gloria Hice-Idler  
Scott Ellis  
Tim Bilobran

**Carter & Burgess Inc.  
707 17<sup>th</sup> Street, Suite 2300  
Denver, CO 80202**  
Project Manager Craig Gaskill  
Gina McAfee  
Larry Gibson  
Brian Werle  
David Woolfall  
Jessie Slaton  
Shonna Sam  
Nitin Deshpande  
Abigail Ikner

**City of Fort Collins  
215 North Mason Street  
Fort Collins, CO 80521**  
Kathleen Bracke

**Goodbee & Associates, Inc.  
2725 South Pennsylvania Street  
Englewood, CO 80110**  
Lisa Goodbee

**City of Loveland  
410 East 5<sup>th</sup> Street  
Loveland, CO 80537**  
Tom Knostman

**Hermesen Consulting  
486 West Fremont Drive  
Littleton, CO 80120**  
Gail Keeley

**North Front Range NPO  
235 Mathews Street  
Fort Collins, CO 80524**  
Vicky McLane

**Clarion Associates  
226 Remington Street, Suite 1  
Fort Collins, CO 80524**  
Ben Herman

**Larimer County  
P.O. Box 1190  
Fort Collins, CO 80522**  
Mark Peterson  
Rusty McDaniel  
Martina Wilkinson

**Centennial Archaeology, Inc.  
300 East Boardwalk, Building 4-C  
Fort Collins, CO 80525**  
Christian Zier

**Federal Highway Administration  
Colorado Division  
12300 W. Dakota Ave., Suite 180  
Lakewood, CO 80228**  
Scott Sands  
Mike Vanderhoff



## TABLE OF CONTENTS

<b>PREFACE .....</b>	<b>1</b>
<b>EXECUTIVE SUMMARY .....</b>	<b>3</b>
<b>1.0 INTRODUCTION AND SCOPE .....</b>	<b>9</b>
1.1 Relation to Other Studies .....	10
1.2 Relationship to NEPA .....	11
1.3 Level of Analysis .....	11
1.4 Report Content .....	12
<b>2.0 CORRIDOR IDENTIFICATION .....</b>	<b>13</b>
2.1 Regional Transportation Plan Vision .....	13
2.2 Purpose and Need .....	15
2.3 Project Goals .....	16
2.4 Study Limits .....	17
<b>3.0 Study AREA CONTEXT .....</b>	<b>21</b>
3.1 Transportation Facilities .....	21
3.1.1 Existing Traffic Data .....	21
3.1.2 Existing Accident Data .....	28
3.1.3 Transit .....	30
3.1.4 Bicycle and Pedestrian Facilities .....	32
3.2 Infrastructure .....	35
3.2.1 Existing Roadway .....	35
3.2.2 Existing Utilities .....	38
3.3 Right of Way .....	39
3.4 Environmental Resources .....	39
3.4.1 Land Use Considerations .....	40
3.4.2 Noise .....	42
3.4.3 Air Quality .....	43
3.4.4 Water Resources .....	43
3.4.5 Wetlands and Riparian Areas .....	45
3.4.6 Wildlife and Threatened and Endangered Species (T&E) .....	52
3.4.7 Environmental Justice .....	54
3.4.8 Publicly Owned Lands .....	58
3.4.9 Archaeology and Paleontology .....	62
3.4.10 Historic Resources .....	65
3.4.11 Hazardous Materials .....	70
<b>4.0 TRANSPORTATION ALTERNATIVES DEVELOPMENT AND SCREENING .</b>	<b>71</b>
4.1 Screening Process .....	71
4.2 Project Goals .....	72
4.3 Project Evaluation Criteria and Measures of Effectiveness (MOEs) .....	72
4.4 Transportation Considerations .....	75
4.4.1 2030 North Front Range MPO Base Case .....	75
4.4.2 2030 No-Action Alternative .....	75



4.4.3	2030 Parallel Roads .....	76
4.4.4	2030 Widen US 287 to Six Lanes.....	76
4.4.5	Model Results.....	76
4.5	Range of Alternatives .....	80
4.6	Forecasted Traffic Operations.....	84
4.7	Environmental Considerations.....	84
4.7.1	Wetlands.....	86
4.7.2	Publicly-Owned Lands.....	88
4.7.3	Historic Properties.....	91
4.8	Physical Considerations .....	92
4.9	Access Control Considerations .....	93
<b>5.0</b>	<b>PUBLIC AND AGENCY INVOLVEMENT .....</b>	<b>95</b>
5.1	Agency Involvement .....	95
5.2	Public Involvement .....	96
5.2.1	Project Mail List .....	96
5.2.2	Public Meeting .....	96
5.2.3	Postcard Announcements .....	100
5.2.4	Newsletter.....	100
5.3	Public Information.....	101
5.3.1	Media Information.....	101
5.3.2	Web Site.....	103
<b>6.0</b>	<b>RECOMMENDATIONS .....</b>	<b>105</b>
6.1	Alignment .....	105
6.2	Typical Section .....	106
6.3	Other Recommended Improvements .....	111
6.3.1	Bus Signal Priority .....	111
6.3.2	Signal Improvements/ITS .....	112
<b>7.0</b>	<b>NEXT STEPS .....</b>	<b>113</b>
7.1	Implementation Approach .....	113
7.2	Additional NEPA Planning.....	116
7.2.1	Noise .....	116
7.2.2	Air Quality.....	118
7.2.3	Water Resources.....	118
7.2.4	Wetlands.....	119
7.2.5	Stormwater Runoff.....	119
7.2.6	Wildlife and Threatened and Endangered Species .....	120
7.2.7	Environmental Justice .....	120
7.2.8	Publicly-Owned Lands.....	120
7.2.9	Archaeology and Paleontology.....	121
7.2.10	Historic Properties.....	122
7.2.11	Hazardous Materials .....	122
7.2.12	Additional Resources .....	123
7.3	Access Control Plan .....	123
<b>REFERENCES .....</b>	<b>125</b>	



**APPENDIX – Recommended Alternative Concept Plan Sheets**

(under separate cover)

**List of Tables**

Table 3-1: Existing Utilities.....	38
Table 3-2: Measured Noise Levels .....	43
Table 3-3: Potential Wetlands.....	46
Table 3-4: Historic or Potentially Historic Properties.....	66
Table 4-1: Evaluation Criteria and Measures of Effectiveness .....	73
Table 7-1: Noise Impact Distances for 2005 Existing Condition .....	117
Table 7-2: Noise Impact Distances for 2030 Six-Lane Alternative.....	117

**List of Figures**

Figure 2-1: US 287 Corridor.....	12
Figure 3-1: Existing Peak Hour Traffic North .....	22
Figure 3-2: Existing Peak Hour Traffic South.....	23
Figure 3-3: Intersection LOS Definition .....	25
Figure 3-4: Existing Level of Service North.....	26
Figure 3-5: Existing Level of Service South .....	27
Figure 3-6: Accident Data at Intersections.....	29
Figure 3-7: Existing US 287 Cross Section.....	36
Figure 3-8: Southwest Annexation .....	41
Figure 3-9: Wetland and Waterbodies North .....	47
Figure 3-9: Wetland and Waterbodies South.....	48
Figure 3-10: Sensitive Populations North .....	56
Figure 3-10: Sensitive Populations South.....	57
Figure 3-11: Publicly Owned Lands North .....	59
Figure 3-11: Publicly Owned Lands South.....	60
Figure 3-12: Historic and Cultural Resources North .....	63
Figure 3-12: Historic and Cultural Resources South.....	64
Figure 4-1: Alternative Development and Screening Process .....	72
Figure 4-2: Summary of Model Alternatives.....	77
Figure 4-3: General Capacity Needs .....	78
Figure 4-4: Alternatives and Screening (Sheet 1 of 2).....	81
Figure 4-5: Alternatives and Screening (Sheet 2 of 2).....	82
Figure 4-6: Alternative Summary .....	84
Figure 4-7: 2030 LOS at Intersections .....	85
Figure 5-1: Partial Section of the Project Newsletter .....	102
Figure 6-1: Alignment Shift at Cemetery .....	107
Figure 6-2: Alignment Shift at Carpenter Road.....	108
Figure 6-3: Cross Sections .....	110



## Acronym's

---

### A

Access Control Plan.....	ACP
American Association of Highway and Transportation Officials.....	AASHTO
American Society for Testing and Materials .....	ASTM
Area of Direct Effect.....	ADE
Army Corps of Engineers.....	ACOE
Average Daily Traffic.....	ADT

### B

Burlington Northern Santa Fe Railway.....	BNSF
Bus Rapid Transit .....	BRT

### C

City of Loveland Transit .....	COLT
Clean Water Act.....	CWA
Colorado Department of Transportation .....	CDOT
Colorado Discharge Permit System.....	CDPS
Colorado National Heritage Program.....	CNHP
Corps of Engineers .....	COE

### D

Dial-a-Ride .....	DAR
-------------------	-----

### E

Environmental Impact Statement.....	EIS
Environmental Overview Study.....	EOS
Endangered Species Act .....	ESA

### F

Federal Highway Administration .....	FHWA
--------------------------------------	------

### G

Growth Management Area.....	GMA
-----------------------------	-----

### H

Housing and Urban Development.....	HUD
------------------------------------	-----

### I

Intelligent Transportation Systems.....	ITS
Intergovernmental Agreement .....	IGA

### L

Levels of Service.....	LOS
------------------------	-----



**M**

Mason Transportation Corridor ..... MTC  
 Master Street Plan ..... MSP  
 Measures of Effectiveness ..... MOE  
 Metropolitan Statistical Area ..... MSA  
 Migratory Bird Treaty Act of 1918 ..... MBTA  
 Miles Per Hour ..... MPH  
 Municipal Separate Storm Sewer ..... MS4

**N**

National Environmental Policy Act ..... NEPA  
 National Pollutant Discharge Elimination System ..... NPDES  
 National Register of Historic Places ..... NRHP  
 Non-Rural Regional Arterial ..... NR-A  
 North Front Range MPO ..... NFRMPO

**O**

Office of Archaeology and Historic Preservation ..... OAHP

**P**

Preble's Meadow Jumping Mouse ..... PMJM  
 Project Review Team ..... PRT  
 Public Service Announcements ..... PSA

**R**

Regional Transportation Plan ..... RTP

**S**

Statewide Transportation Improvement Plan ..... STIP  
 State Historic Preservation Officer ..... SHPO

**T**

Transportation Improvement Plan, NFR ..... TIP  
 Transfort Strategic Plan ..... TSP  
 Transportation Demand Management ..... TDM  
 Threatened and Endangered ..... T&E

**U**

U.S. Fish and Wildlife Service ..... USFWS

**V**

Vehicle Miles Traveled ..... VMT  
 Vehicles Per Day ..... VPD

**W**

Weighted Hazard Index ..... WHI

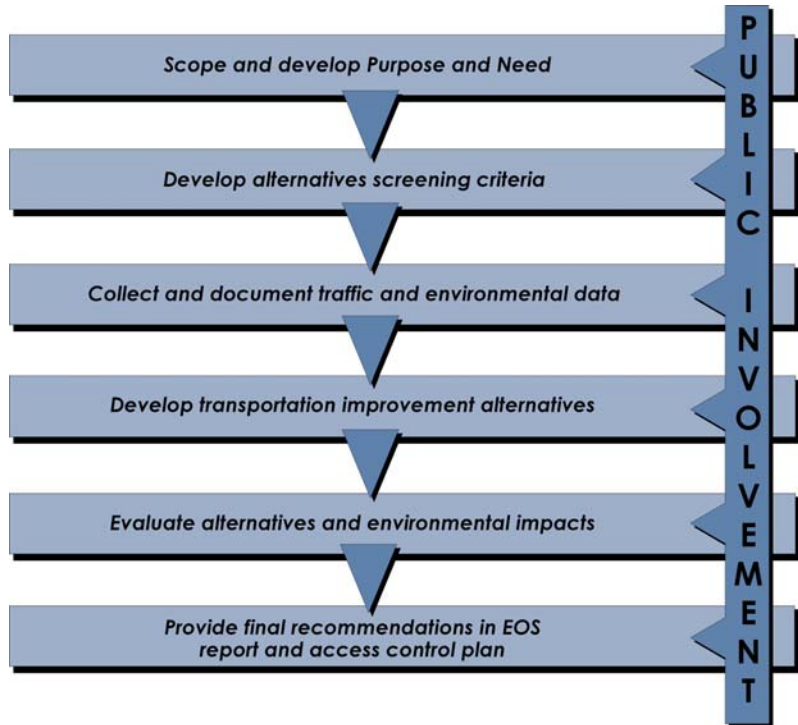




## PREFACE

Rapid growth along the North Front Range of Colorado has created the need for a transportation planning process that is responsive to resulting future transportation needs and development pressures, is responsive to the natural and built up environment, and the resulting future transportation needs. To successfully address this need, the Colorado Department of Transportation (CDOT) developed and initiated the Environmental Overview Study (EOS) process. The EOS process is structured to provide a basis for long-term roadway improvements and to provide support for local planning decisions while considering environmental resources decisions. While no funds are currently programmed for construction, the intended outcome of the process is the preservation of a corridor for future transportation improvements. Through this process, future improvements to the state highway system can be integrated with other local and regional transportation plans resulting in a proactive, environmentally sensitive transportation vision within the North Front Range.

The EOS process is intended to be open and interactive, with all interested local and regional agencies encouraged to actively participate (see figure at right). Throughout the EOS process, public input is solicited to develop an understanding of the important community values and transportation needs and deficiencies relating to the Purpose and Need, the development of alternatives and the selection of a recommended alternative. Data collection,





technical analysis, and public and agency input are all collectively used in this collaborative process to understand the nature and magnitude of the transportation needs within a corridor and then develop realistic solutions that can be carried forward for further analysis.

While the sections of an EOS are generally consistent with National Environmental Policy Act (NEPA) documentation, an EOS is not a replacement for a NEPA decision document. An EOS provides a level of environmental analysis that is more than a feasibility study but less than a NEPA document. The EOS does not necessarily include full field survey work for all factors; it does not include full state and federal agency coordination; it does not define impacts to the resources; nor does it commit to mitigation. The depth of focus for the environmental factors affecting the development of alternatives may vary depending upon the actual corridor that is being studied. No alternative will be selected as the recommended alternative if it is believed that there are significant social, economic, and/or environmental factors that would preclude an alternative from ever becoming a preferred alternative through a formal NEPA process.

To provide consistency in the transportation planning process between the affected agencies, a cooperative agreement will be established through a memorandum of understanding (MOU) for the EOS. This will allow local agency or developer-funded projects a basis for making needed transportation improvements or for making other improvements in a manner such that future transportation improvements are not precluded. It is recognized that for any future improvements that require federal funds, additional analysis and documentation will be required. This additional analysis would build on the EOS evaluation, minimizing the risk of future changes to the EOS findings.

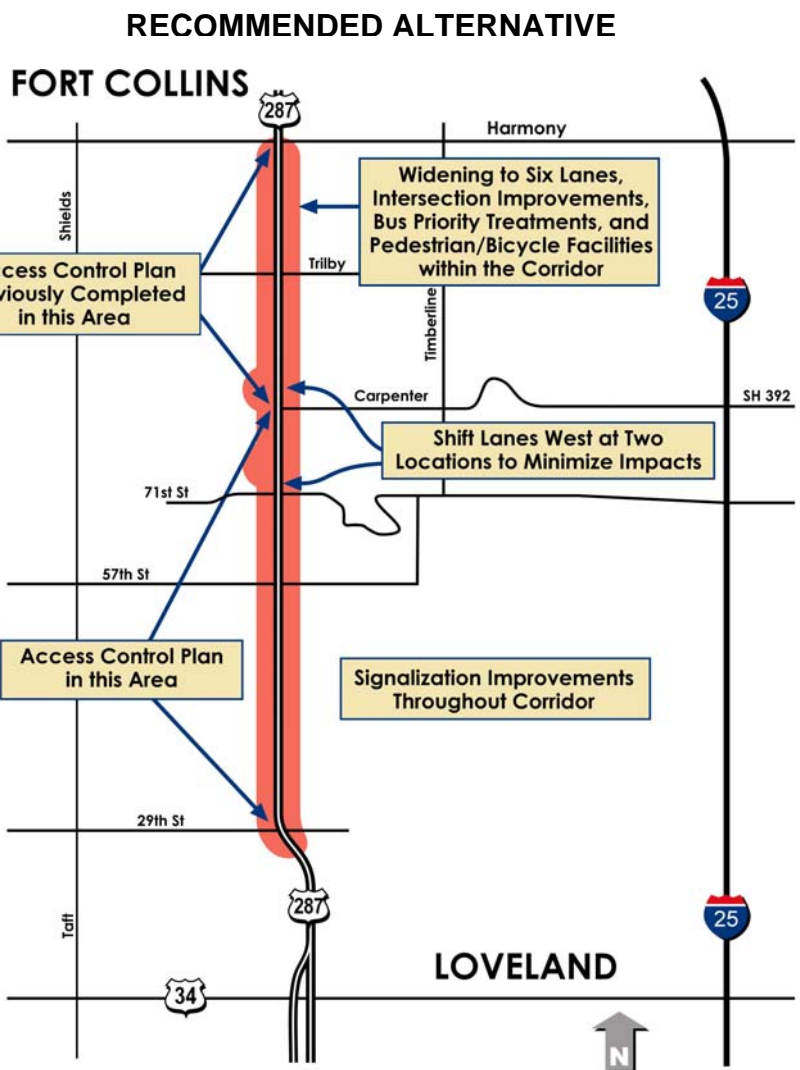


## EXECUTIVE SUMMARY

The Colorado Department of Transportation, Region 4 (CDOT), the Cities of Loveland and Fort Collins, Larimer County, and the North Front Range Metropolitan Planning Organization have recommended a transportation alternative that addresses safety, mobility, and the preservation of environmental and other community values. Defined as a “context sensitive solution,” this alternative identifies a right-of-way width needed for future improvements along a 7.1 mile stretch of the US 287 corridor between 29<sup>th</sup> Street in Loveland and Harmony Road in Fort Collins. No funds are currently programmed for any of these improvements.

The recommended right-of-way along the US 287 corridor will ensure adequate area for the following future improvements (see map to right):

- Roadway widening to six lanes to accommodate future travel demand and congestion.
- Intersection improvements to accommodate peak-hour demand.
- Priority at intersections for bus transit.
- Safety improvements including auxiliary lanes and medians.
- Access Control south of Carpenter Road to 29<sup>th</sup> Street to define where and what type of future access changes or modifications can occur.

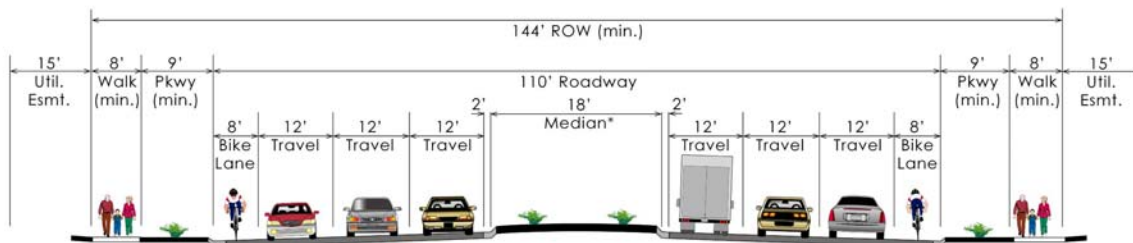




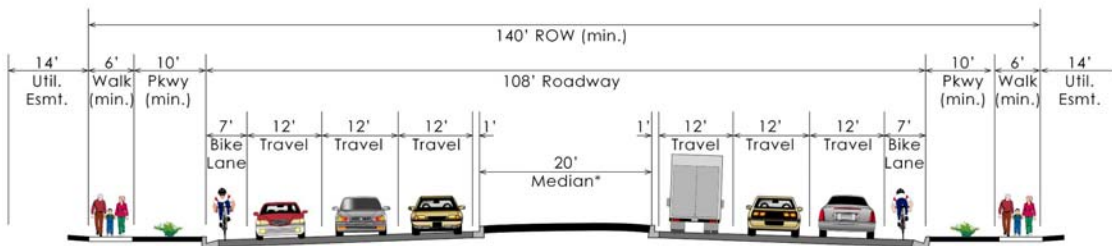
- Pedestrian and bicycle linkages.
- Traffic signal timing improvements to improve coordination between signals.

The recommended widening to six lanes will be centered on the existing four lane roadway, except in two locations where it will be shifted to the west: north of 71<sup>st</sup> Street to avoid impacting Resthaven Cemetery property, and an area north of Carpenter Road to reduce potential impacts to an existing residential development.

The future right-of-way will provide adequate roadway width throughout the corridor for needed travel lanes, shoulders, raised center median, and left and right-turn lanes at selected intersections. The right-of-way also will provide room for pedestrian and commuter and recreational bicycle linkages between Loveland and Fort Collins (see typical sections below).



**US 287 Cross-Section North of 57th Street - 55 mph**



**US 287 Cross-Section South of 57th Street - 45 mph**

Intersection improvements, such as turn lanes and median treatments, are recommended to improve traffic flow and safety. Signal timing improvements are proposed to improve interconnectivity traffic flow, connections to crossroads, and east-west travel. Bus signal priority



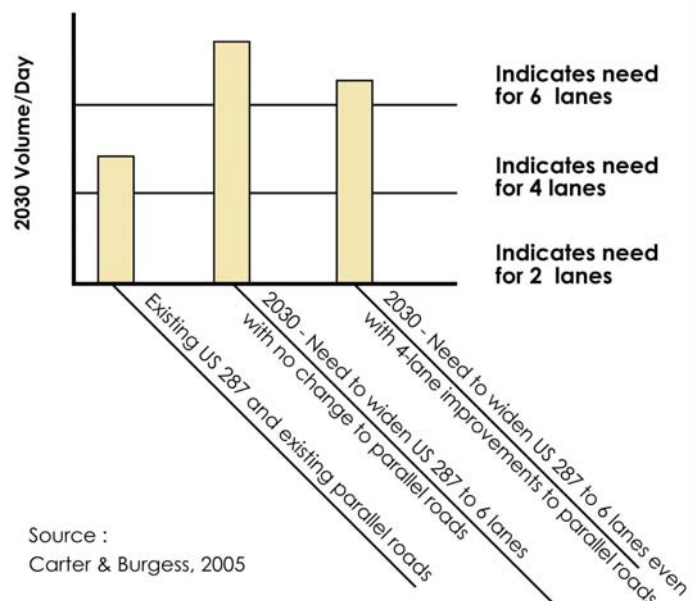
can be developed at intersections as part of signal timing and turn-lane improvements. The widened roadway will have curb and gutter on both sides and will be designed for 55 miles per hour (mph) north of 57<sup>th</sup> Street and 45 mph south of 57<sup>th</sup> Street.

These future improvements will enable US 287 to accommodate forecast travel demand in the corridor through the year 2030. These improvements will also address the project's purpose and need and associated goals as defined from input gained during public and agency scoping, two public open houses in April and July 2005, and from meetings with local groups, organizations, and local agencies. The purpose and need and associated goals are presented in Sections 2.2 and 2.3.

Eight build alternatives and a no-action alternative were evaluated during the US 287 EOS study, leading to the identification of the recommended alternative. The recommended alternative for US 287 between Loveland and Fort Collins provides the following benefits:

- Accommodates modal alternatives (auto/truck, transit, pedestrian, and bicycle).
- Accommodates projected 2030 traffic volumes.
- Brings all improvements up to existing safety standards.
- Does not preclude improvements to other north-south parallel routes (see graphic at right which illustrates that even if 4 lane improvements to parallel roads are made, 6 lanes would be needed on US 287).
- Improves traffic flow by applying access control.
- Addresses local plans and identifies right-of-way footprints for all future development along the corridor for the next 20-plus years.

**US 287 will require widening to 6-lanes regardless of improvements to parallel roads**



Source :  
Carter & Burgess, 2005



The study considered environmental factors in the evaluation of the alternatives. Identification of effects to the environment during early planning will make sure they are considered during future roadway design and construction. Major environmental findings related to the recommended alternative include:

- Ten wetlands were identified along the study corridor that potentially could be considered under the jurisdiction of the Army Corps of Engineers (ACOE) and would require further delineation, impact analysis, coordination with the Corps of Engineers and possibly mitigation. Minor alignment adjustments, design modifications, construction permits, and or mitigation may be necessary when roadway improvements are proposed.
- The corridor is adjacent to one site on the State Register of Historic Properties, the Denies Barn, and two structures and one ditch that are potentially eligible for the National Register of Historic Sites. As future NEPA proceeds, properties along the corridor would need to be further evaluated for National Register status, concurrence from the State Historic Preservation Officer (SHPO) would be needed and impacts would need to be avoided if prudent and feasible.
- Widening would likely require right-of-way or easements from four publicly-owned properties: Long View Farm, Manor Ridge Open Space, Robert Benson Lake, and Redtail Grove Natural Area. Although none of these properties currently have public facilities, nor are they open to the public, the City of Fort Collins has plans to develop trails at the Redtail Grove Natural Area in the near future. Trails could also be developed in the future at Long View Farm by Larimer County. Early right-of-way/easement coordination with Larimer County and Fort Collins will be important to minimize impacts to future trails, as well as to assess potential Section 4(f) status and impacts at the time of NEPA processing. Design modifications may be appropriate to avoid or minimize impacts to these properties when roadway improvements are proposed.
- The land along Redtail Grove Natural Area, where Fossil Creek goes through, needs to be monitored for fossils during construction.
- No Threatened or Endangered Species would be negatively impacted by future widening.

Concurrent with the US 287 EOS study, an access control plan was prepared for the City of Loveland and Larimer County from 29th Street to Carpenter Road. (An access control plan already exists for US 287 in Fort Collins from Carpenter Road north to Harmony Road.) Formal approval of this access control plan combined with the access control plan along US 287 in Fort Collins would provide access management tools for the entire US 287 EOS study area.



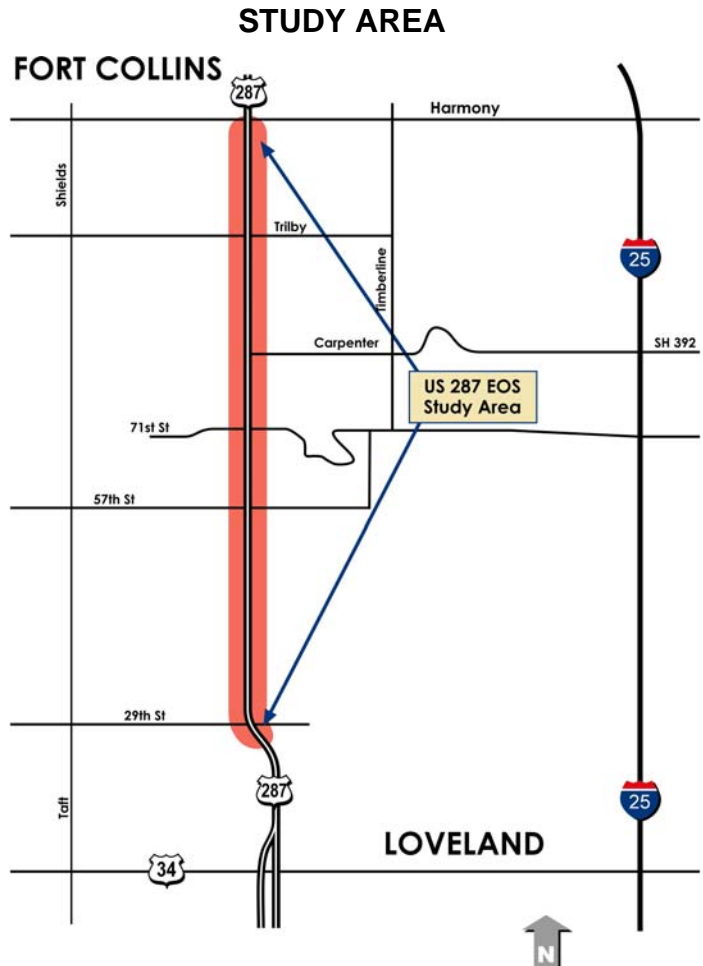
Furthermore, a memorandum of understanding (MOU) between CDOT and local agencies adopting the EOS findings will provide the basis for approving development of locally funded transportation improvements along the corridor.



## 1.0 INTRODUCTION AND SCOPE

Development along the US 287 corridor between Loveland and Fort Collins is occurring or being planned without the benefit of a coordinated, overall long-term strategy for alleviating mobility pressures, providing increased safety, preserving right-of-way, and managing access. This Environmental Overview Study (EOS), for the US 287 study area, provides an overall strategy to be used by the Colorado Department of Transportation, Region 4 (CDOT), the City of Loveland, the City of Fort Collins, and Larimer County for right-of-way preservation, access management, and multimodal mobility while considering safety for all users. The strategy and development of this EOS was a collaborative effort among these jurisdictions, the North Front Range Metropolitan Planning Organization (NFRMPO), and public to determine the most appropriate alternative to meet the corridor needs.

This EOS is a corridor-level study to identify and plan for future transportation needs for the 7.1-mile long US 287 study area (see figure at right). The primary outcome is a recommendation for transportation improvements that defines the type of improvement and establishes the proposed footprint, while considering and addressing environmental resources in the project area. The recommendation includes a collaborative, interdisciplinary assessment to develop a transportation facility that fits the corridor's physical setting and is sensitive to scenic, aesthetic, historic, and environmental resources, while maintaining safety and mobility. Defined as a context sensitive solution, this recommendation benefits



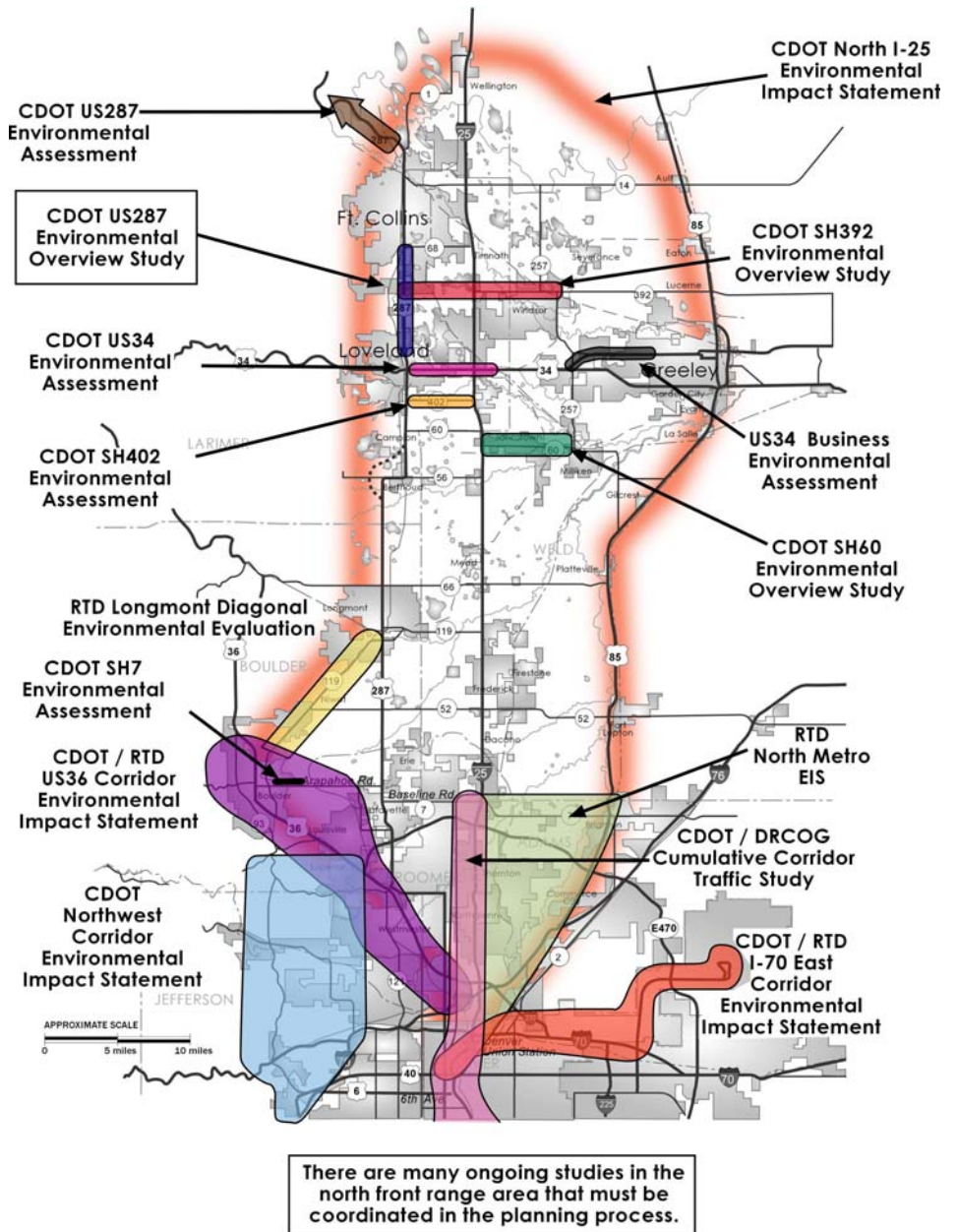




CDOT, local agencies, developers, and communities by describing right-of-way preservation and access management needs while considering community needs and environmental constraints.

### 1.1 Relation to Other Studies

This EOS is similar to other transportation planning studies such as feasibility studies and corridor optimization studies by looking at transportation alternatives. However, the addition of the social, cultural, and natural resource components provides a more comprehensive framework for reviewing options. The EOS also accounts for other study efforts in the North Front Range that could affect the US 287 corridor (see figure to right). For example, the US 287 EOS study area and the SH 392 EOS study area both include the US 287 and Carpenter Road intersection. Additionally, all of the EOS efforts are consistent with planning for





the North I-25 corridor, considered under an Environmental Impact Statement (EIS). The US 287 EOS project team was apprised of each of the ongoing planning efforts in CDOT Regions 4 and 6 to ensure consistency and compatibility of recommendations.

## 1.2 Relationship to NEPA

---

The US 287 EOS is not a National Environmental Policy Act (NEPA) study, but it has been developed using a similar process. The reasons for this are to comply with CDOT's Environmental Stewardship Guide (CDOT 2005) and the Transportation Commission policy of meeting the intent of NEPA even when there is no direct federal involvement. In addition, information developed during the EOS might be transferable to a NEPA document or help with NEPA scoping at a later date.

If federal funds are used, future improvements specific to the corridor would require NEPA clearance. During the NEPA processes, purpose and need for a specific improvement will be defined, which may be different than the purpose and need generally described in Section 2.2 of this EOS. Also, Alternatives evaluated may vary in scope or location from those defined in this EOS and any changes to corridor conditions, environmental regulations, or agency input will be addressed.

This EOS will benefit CDOT, local agencies, developers and communities by describing right-of-way preservation and access management needs while considering environmental constraints and sensitivities. This EOS has been developed similarly to a NEPA document, therefore recommendations are not expected to preclude any findings that may result from any future NEPA process. However, it does not alter any requirements of NEPA or CDOT's Environmental Stewardship Guide.

## 1.3 Level of Analysis

---

It is important to link the EOS with NEPA early on to minimize the possibility of having the recommended alternative differ from a preferred alternative arrived at during a future NEPA process. Linking can be used to reduce the need to re-evaluate alternatives during a NEPA process that were dismissed in the EOS. This concept is captured in the FHWA/FTA guidance titled "*Linking the Transportation Planning and National Environmental Policy Act (NEPA)*"



*Processes*,” dated February 2005. Risk is least likely to occur where the corridor contains few options or few environmental constraints, such as the US 287 corridor, and most likely to occur where alternatives differ significantly, such as where bypasses or new roadways are considered.

The level of analysis for the US 287 EOS generally followed guidance for lower-risk projects contained in the “2005 CDOT Region 4 EOS Desk Guidebook” and knowledge from local agencies. The guidebook is intended to provide a framework and facilitate consistency but does not define specific contents of the EOS. The analysis included research on publicly available information sources and simple windshield-level field surveys. It is important to note that this assessment was completed at a preliminary level, and additional data collection and evaluation will be required to specifically define environmental resources, potential impacts to environmental resources, and mitigation, as well as other resources not considered essential by this evaluation. This assessment does not provide sufficient detail for analysis required by NEPA, nor for federal, state, or local construction permit requirements.

## 1.4 Report Content

---

This report contains eight sections. Section 2.0 summarizes the factors associated with identification of the study corridor, and Section 3.0 provides an overview of the corridor area context, including transportation facilities, infrastructure, right-of-way, and environmental resources. The transportation alternatives screening process, range of alternatives, and screening considerations are detailed in Section 4.0. Public and agency involvement activities are summarized in Section 5.0. Section 6.0 contains findings, including recommended alignment, typical sections, and environmental effects. Section 7.0 identifies the next steps for the corridor, such as possible implementation approaches, additional NEPA planning, and an access control plan. References are provided in Section 8.0.



## 2.0 CORRIDOR IDENTIFICATION

---

Planning factors affecting the identification of this corridor are summarized below and include

- The North Front Range MPO (NFRMPO) 2030 Regional Transportation Plan (2030 RTP) vision for the corridor,
- Requests from adjacent communities.
- The purpose and need for transportation improvements, and
- Consideration of corridor planning limits, or logical termini.

These planning factors were key elements in the study process and in the development of the recommended alternative. The US 287 study area is depicted in **Figure 2-1**.

### 2.1 Regional Transportation Plan Vision

---

The NFRMPO 2030 RTP, adopted September 2, 2004, and currently under update, is the region's plan for addressing future transportation needs (NFRMPO 2000). The plan is a collaborative effort that helps provide a vision for transportation corridors, including one for the US 287 corridor from Denver to SH 14 (Ted's Place), north of Fort Collins. The overall vision for US 287 established by local governments is of an urban corridor with high levels of mobility and safety. To accommodate this vision, the RTP identifies two primary goals:

1. Increase travel reliability and improve traffic flow with a focus on commuter travel.
2. Reduce dependency on single occupancy vehicles by enhancing transit, Transportation Demand Management (TDM), and bicycle/pedestrian options.

NFRMPO 2030 RTP strategies to accomplish the goals include:

- Performing and implementing studies for enhancing mobility, such as corridor optimization and access management plans.
- Improving mobility by constructing intersection improvements.
- Preserving right-of-way.



# US 287

ENVIRONMENTAL OVERVIEW STUDY

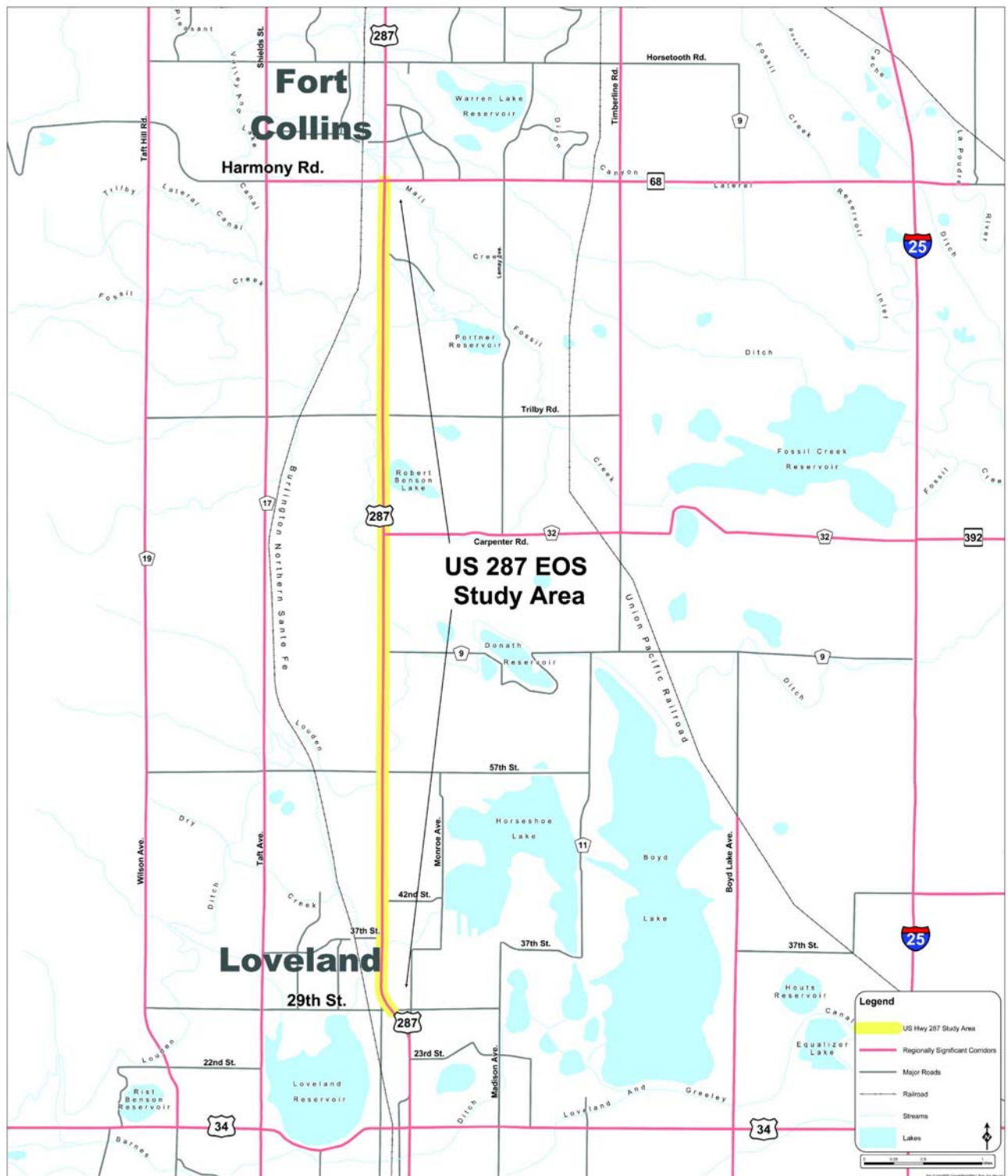


Figure 2-1: US 287 Corridor



- Expanding and improving transit and multimodal opportunities.
- Considering parallel and cross road facilities.
- Promoting intelligent transportation systems (ITS) and TDM strategies.
- Providing for bicycle and pedestrian facilities.
- Increasing safety with roadway and access management improvements.

The RTP vision was used in the development of the US 287 EOS Purpose and Need and in the development of project goals. The project goals helped guide the development and evaluation of alternatives and are described further in Section 4.

## 2.2 Purpose and Need

---

The purpose and need for potential improvements to the US 287 EOS study area forms the basis for the development and evaluation of various transportation alternatives in this EOS. The purpose and need for transportation improvements was jointly developed by CDOT, Loveland, Fort Collins, Larimer County, and the NFRMPO, with input from members of the community who live and work in the corridor. The purpose of this EOS is to guide or provide a framework for the US 287 study area that provides safe and efficient mobility for all modes by addressing the following needs:

### Modal Alternatives and Interrelationships

- Providing modal alternatives in a transportation system results in the following benefits: provides users with more choices; better accommodates the needs of varying trip purposes; better accommodates the needs of varying trip lengths; and provides mobility options if one mode breaks down.

### Mobility

- Projected increase in traffic is expected to result in unacceptable levels of service at major intersections.
- Future changes in adjacent land uses are expected to increase travel demand in this corridor. Existing access is generally inconsistent with current design standards in terms of spacing and geometric design. This results in more intersections, slower speeds, and increased congestion. An Access Control Plan addresses preferred strategies for alleviating inconsistencies in the Fort Collins planning area but a similar plan is needed for Loveland's portion of the corridor.



- Signal systems within the corridor are not synchronized nor interconnected, which currently causes delays and will lead to increased delay for the traveling public in the future, due to multi-jurisdictional control.

## Safety

- Existing access conditions create inconsistent driver expectations and increased vehicle conflict points.
- Projected increases in traffic at intersections designed using older design standards or for lower volumes are expected to create increased driver conflicts and accidents.
- The lack of consistent pedestrian and bicycle facilities throughout the corridor could increase the likelihood of pedestrian/bicycle and vehicle conflicts.

## 2.3 Project Goals

---

The Purpose and Need for this corridor addresses long-term transportation needs. The results of the travel demand modeling done for the US 287 EOS, as well as previous studies by each jurisdiction, have identified the need for improvements to transportation facilities between Loveland and Fort Collins. The known transportation needs, opportunities, and constraints in the corridor were used to create a list of goals for the study. These goals were used to guide the alternatives development and screening process:

### Project Goals

1. Accommodate existing and future traffic volumes and patterns within and passing through the US 287 corridor.
2. Provide a transportation facility that meets the traffic safety needs of all users (auto, truck, transit, pedestrian, and bicycle).
3. Coordinate and be consistent with long-range transit/passenger rail opportunities within the US 287 corridor.
4. Integrate land use plans, transportation plans, and adopted zoning into the transportation improvement strategy.
5. Provide for bicycle and pedestrian travel in the US 287 corridor with good connections and connectivity.
6. Avoid and minimize adverse impacts to the natural, cultural, and human environment.
7. Avoid and minimize impacts and relocations to residential and commercial properties.
8. Provide practical and financially realistic transportation improvements.



## 2.4 Study Limits

---

According to the Federal Highway Administration (FHWA), to select the study limits for transportation improvements that can be advanced through the stages of planning, environmental review, design, and construction, the study sponsors must consider a whole or integrated project (FHWA 1993). The study should satisfy an identified need such as safety, rehabilitation, economic development, or capacity improvements, and should be considered in the context of the local area socioeconomics, topography, future travel demand, and other infrastructure improvements in the area.

FHWA regulations outline four general principles at 23 CFR 771.111(f) that are to be used to frame a highway study in order to ensure meaningful evaluation of alternatives and to avoid commitments to transportation improvements before they are fully evaluated. These principles are:

1. Connect logical termini and be of sufficient length to address environmental matters on a broad scope;
2. Have independent utility or independent significance, i.e., be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made; and
3. Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.
4. The project does not irretrievably commit state or federal funds for closely related projects in order to justify the project.





The rationale used for selecting the logical termini for the northern and southern study limits for the US 287 EOS are:

### North Terminus

For the traffic and environmental analysis and highway alternatives development, the north terminus recommended for the US 287 EOS is the intersection of US 287 and Harmony Road (formally known as SH 68) in the City of Fort Collins, at Milepost 342.167 (**Figure 2-1**). This location is recommended for the following reasons:

1. Harmony Road (formerly SH 68) is the first major east-west arterial route that US 287 intersects in southern Fort Collins traveling northbound from Loveland.
2. The current State Highway roadway access classification for US 287 changes from Non-Rural A (Regional Highway) south of Harmony Road to Non-Rural B (Arterial) north of Harmony Road.
3. Land use and related access issues along US 287 south of Harmony Road are less developed; north of Harmony Road they are more developed.
4. Sizable changes in both the type and magnitude of future travel demands are expected at Harmony Road due to the major regional connection with I-25, accessibility to major retail and employment uses along Harmony Road, and the changes in land use, access, and roadway classification.



## South Terminus

For the traffic and environmental analysis and highway alternatives development, the south terminus recommended for the US 287 EOS is the intersection of US 287 and 29<sup>th</sup> Street in the City of Loveland, at Milepost 335.113 (**Figure 2-1**). This location is recommended for the following reasons:

1. The State Highway roadway access classification for US 287 changes from Non-Rural B (Arterial) south of 29<sup>th</sup> Street to Non-Rural A (Regional Highway) north of 29<sup>th</sup> Street.
2. US 287 south of 29<sup>th</sup> Street transitions to a smaller 4-lane cross section in an area of older development. This part of Loveland can be considered “built out” with urban densities. Further south, at 18<sup>th</sup> Street, US 287 splits into a one-way pair which continues through downtown Loveland following Lincoln Avenue and Cleveland Avenue.
3. Land use and related access issues along US 287 north of 29<sup>th</sup> Street are less developed; south of 29<sup>th</sup> Street they are more developed. Beginning at 29<sup>th</sup> Street and heading north, the commercial and residential development access to US 287 follows a more modern design pattern with fewer and more widely spaced access points and few private access points to US 287. Significant land use constraints are also present south of 29<sup>th</sup> Street including existing business development and the Loveland Burial Park/Lakeside Cemetery (which is bisected by US 287).
4. Sizeable changes in the magnitude of future travel demands are expected at 29<sup>th</sup> Street. 2030 forecasts show daily volumes north of 29<sup>th</sup> Street approximately 50 percent higher than daily volumes to the south. Projected volumes on US 287 south of 29<sup>th</sup> Street can be accommodated at Level of Service D in 2030 without the addition of through lanes.



## 3.0 STUDY AREA CONTEXT

---

The context of the study area is summarized in this section in terms of transportation facilities, infrastructure, and environmental resources.

### 3.1 Transportation Facilities

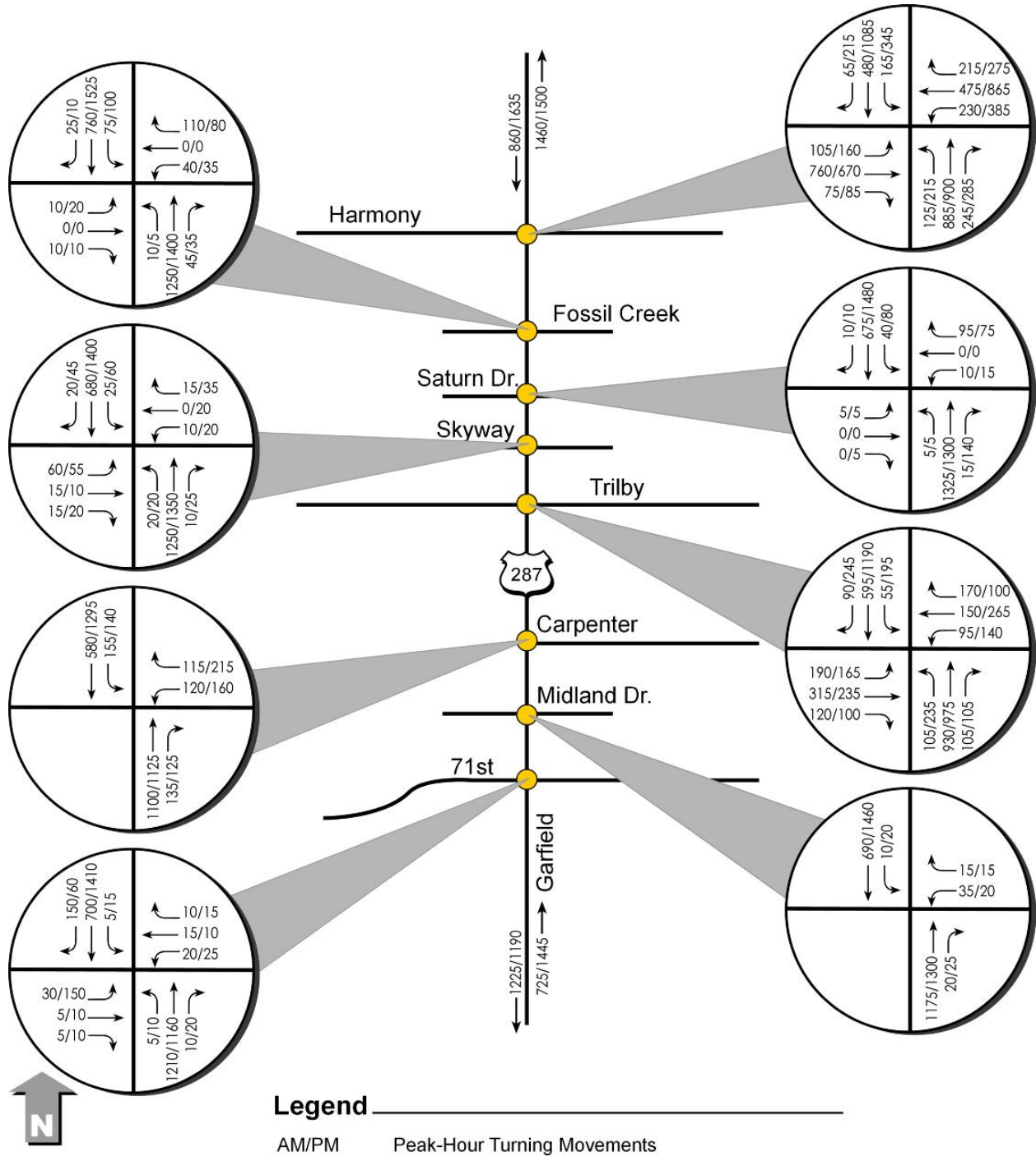
---

Transportation facilities include 7.1 miles of 5-lane roadway, the US 287 roadway from 29<sup>th</sup> Street in Loveland to Harmony Road in Fort Collins and 13 signalized intersections. Major east-west cross streets from south to north include 29<sup>th</sup> Street, (Garfield) 57<sup>th</sup> Street, County Road 30 (71<sup>st</sup> Street), Carpenter Road, Trilby Road, and Harmony Road.

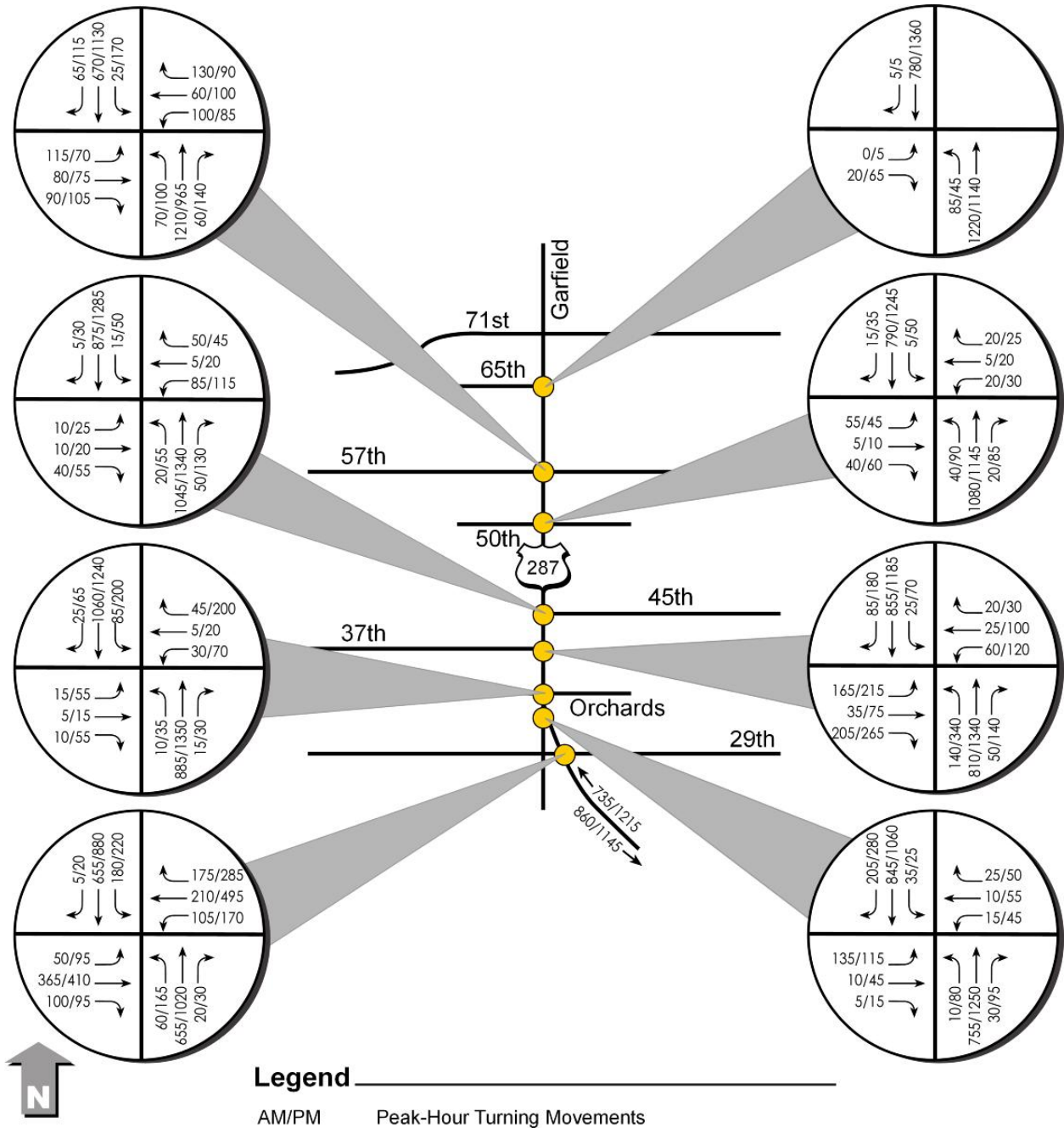
#### 3.1.1 Existing Traffic Data

Traffic data was collected in the corridor in early 2005 to establish existing conditions and a baseline for traffic forecasts. A summary of existing Average Daily Traffic (ADT) and existing turning movement counts for AM and PM peak hours are shown in **Figure 3-1** for the north half of the corridor and **Figure 3-2** for the south half of the corridor. Peak AM hours is from 7:00 to 8:00 am and peak PM hours is from 5:00 to 6:00 pm. In addition to the traffic counts, several field observations were made of existing traffic operations. This data yielded signal timing and saturation flow information, and also provided observations on existing operations issues such as inadequate laneage (lane configuration) and storage capacity for vehicles.

Saturation flow is the measurement of the time or distance between moving vehicles (headways), usually measured from the front bumper of Car A to the front bumper of Car B between vehicles as they pass through the intersection. The saturation flow data collected in the field showed that US 287 drivers pass through intersections more efficiently with headways that are approximately 10 percent to 20 percent shorter than national averages. These shorter headways are not unusual for this type of roadway. They are consistent with numerous other locations studied in suburban areas in Colorado's Front Range. Shorter headways result in improved flow of traffic at intersections, allowing better levels of service (LOS).



**Figure 3-1: Existing Peak Hour Traffic North**





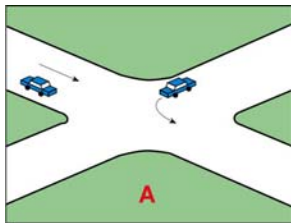
In urbanized and suburbanized areas, most travel delay occurs at intersections and not on roadway segments. For this reason, only LOS at intersections is used to represent overall traffic operations. A graphical representation of each intersection LOS category is displayed in **Figure 3-3**. Accepted traffic engineering practice dictates that intersections operating at LOS D or better are considered to be operating acceptably, while intersections operating at LOS E or F are generally in need of improvement.

The existing traffic volumes, flow characteristics, and signal timing data were used to estimate existing LOS<sup>1</sup> at the key intersections in the corridor. The existing LOS levels for the intersections are shown in **Figures 3-4** and **3-5**. Presently, the Harmony Road intersection at the north end is the most congested, although its traffic characteristics calculate to a LOS D during the peak hours of 5 to 6 P.M. In addition to the calculated LOS, many of the project intersections also have inadequate queue capacity (not enough space in turn lanes for all vehicles wishing to turn) for left turn lanes on both US 287 and side streets. Also, at many intersections the left-turning traffic has LOS calculating to E or F, while the through traffic has much better LOS, allowing the overall intersection LOS to be acceptable.

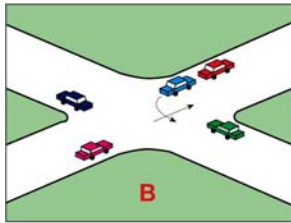
Other capacity issues were noted along US 287 at major cross-street intersections such as Trilby Road, Carpenter Road, and 57<sup>th</sup> Street. These cross-streets carry high traffic volumes on roads that are still two lanes and have minimal turn lane capacity at the US 287 intersections. Some interim turn lane improvements have been made at these and other locations. Even with those improvements, there are still substantial queuing issues that affect operations of the entire intersection and can lead to safety issues.

---

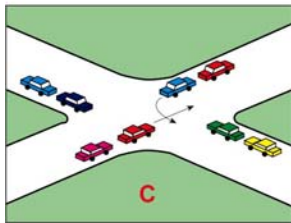
<sup>1</sup> These analyses were conducted in accordance with the Highway Capacity Manual 2000, published by the Transportation Research Board, National Research Council



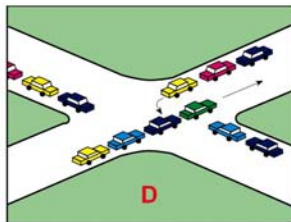
**LOS Intersection A**  
No vehicle waits longer than one signal indication.



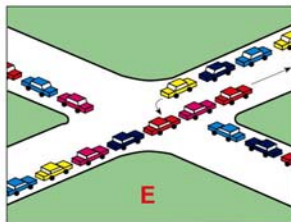
**LOS Intersection B**  
On a rare occasion, vehicles wait through more than one signal indication.



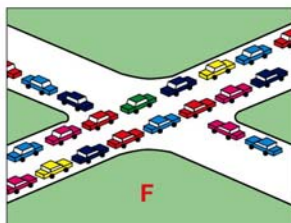
**LOS Intersection C**  
Intermittently, vehicles wait through more than one signal indication, occasionally backups may develop, traffic flow still stable and acceptable.



**LOS Intersection D**  
Delays at intersections may become extensive, but enough cycles with lower demand occur to permit periodic clearance, preventing excessive backups.



**LOS Intersection E**  
Very long queues may create lengthy delays.



**LOS Intersection F**  
Backups restrict or prevent movement of vehicles out of approach creating a "gridlock" condition.

**Figure 3-3: Intersection LOS Definition**

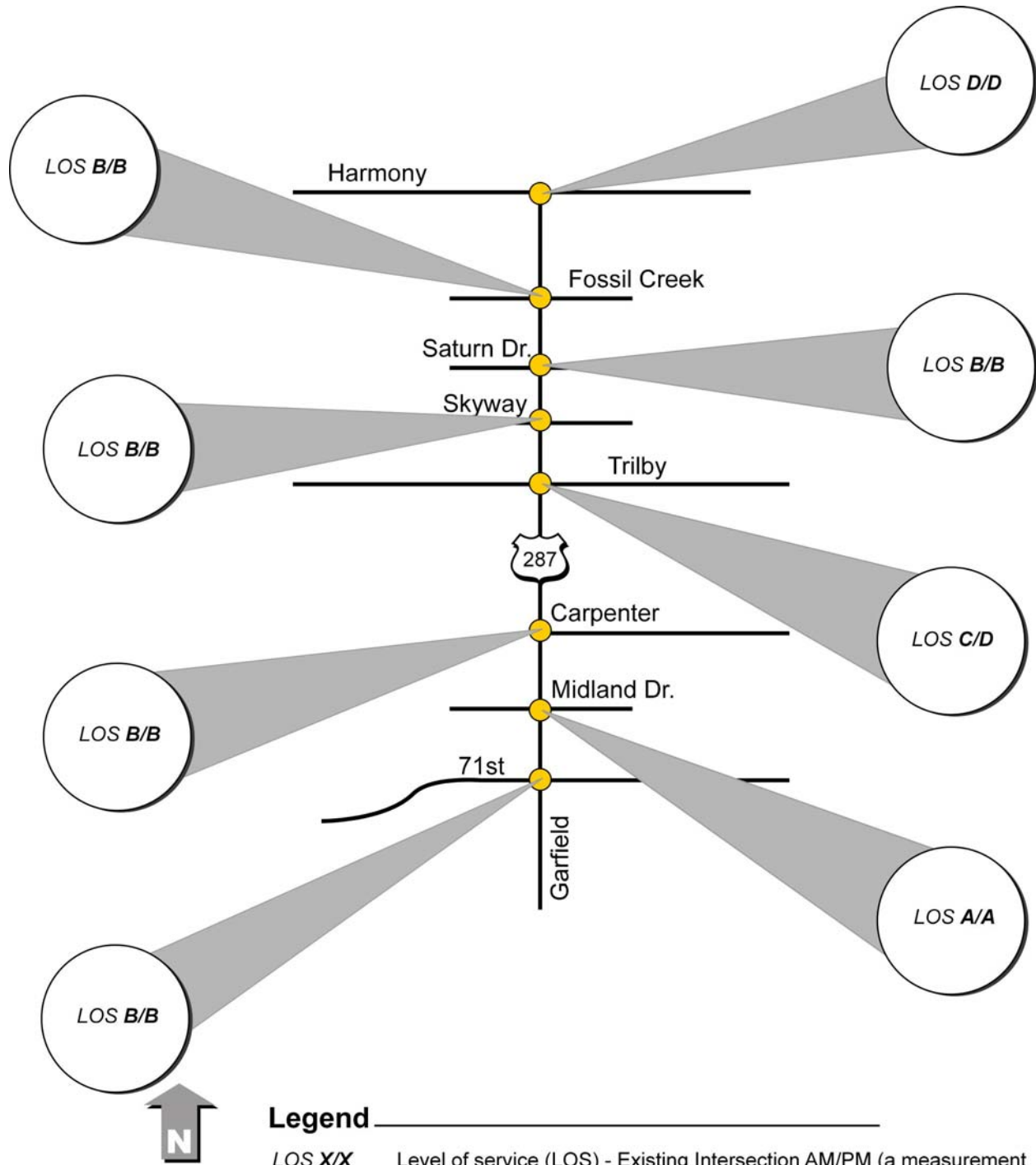


Figure 3-4: Existing Level of Service North



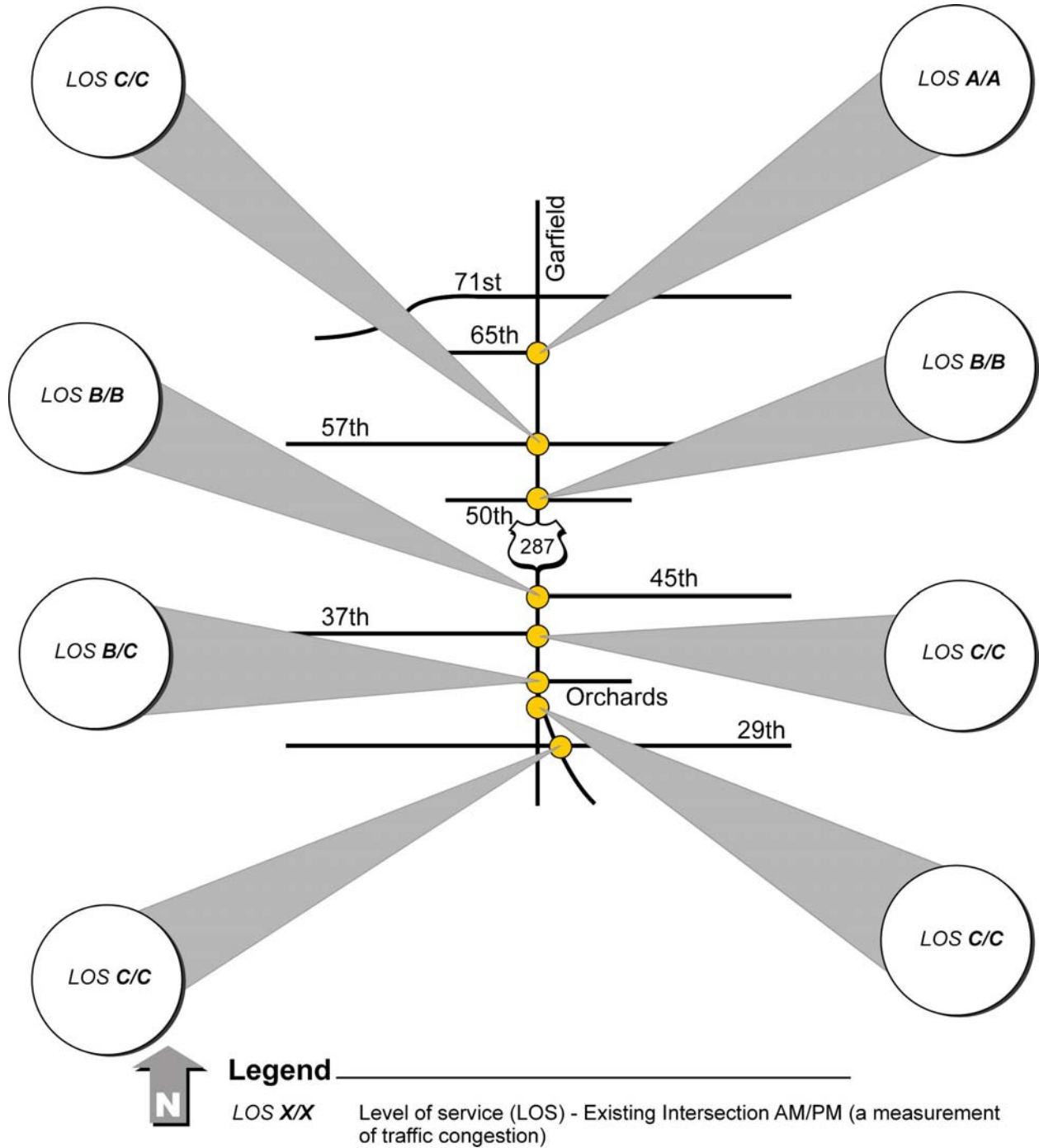


Figure 3-5: Existing Level of Service South



### 3.1.2 Existing Accident Data

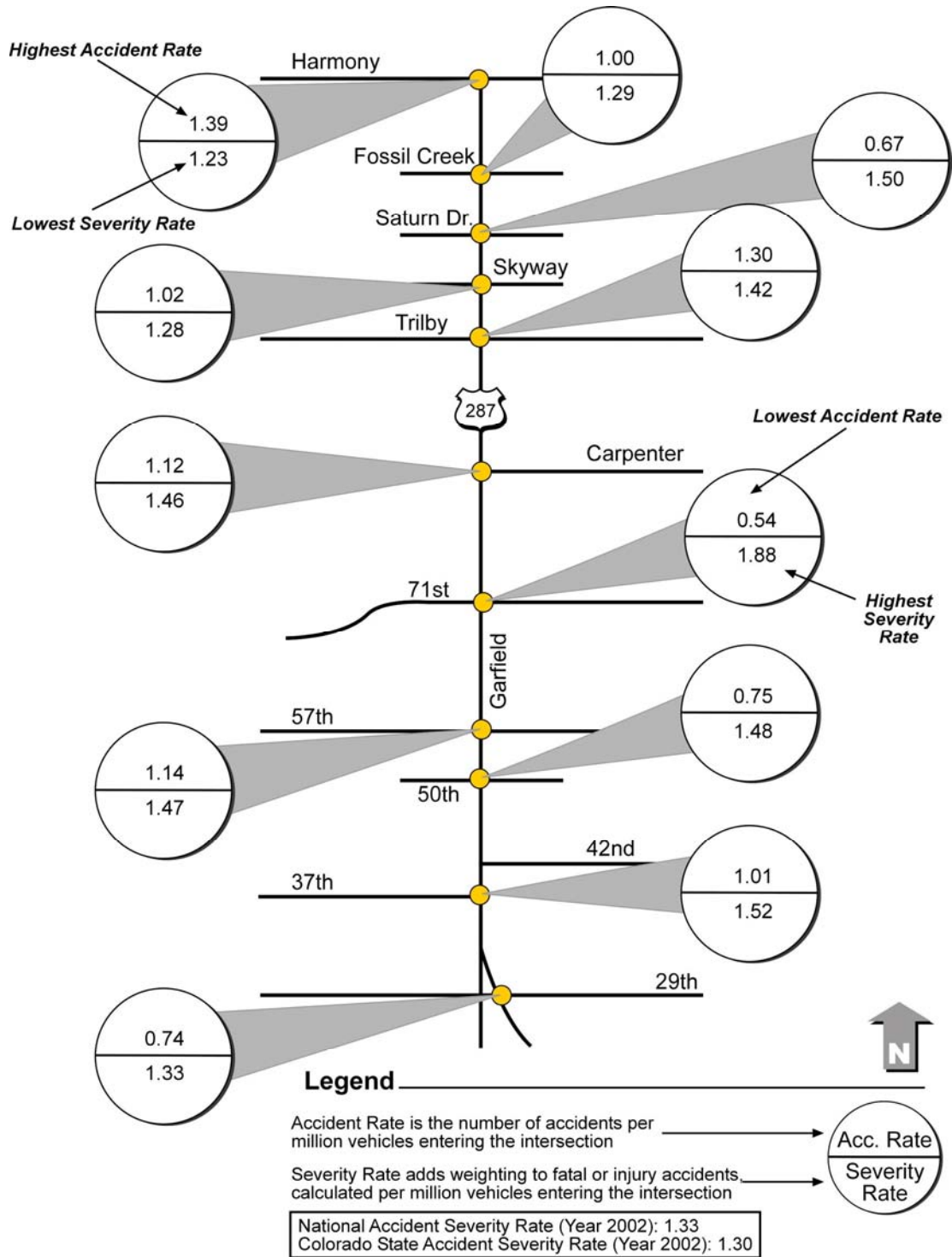
Accident information from CDOT was analyzed to determine if there are locations in the corridor that have unusually high accident characteristics. Accident concentrations are expected at signalized intersections because of the high number of conflicting vehicle movements. For this study, the three-year period between January 1, 2001, and December 31, 2003, was analyzed.

The accident records were reviewed to identify accident locations based upon accident frequency. CDOT provides a “Weighted Hazard Index” (WHI) calculation based on the frequency and severity of accidents in the corridor. The WHI information identified spikes in accident frequency and severity located at signalized intersections, which is typical for this type of roadway. These intersections were then analyzed to determine two important characteristics: accident severity and accident rate.

The accident history of the corridor reveals that 731 accidents occurred during the period from January 2001 through December 2003. Approximately 50 percent of these accidents were rear-end accidents, typically associated with signalized intersections; 36 percent of all accidents resulted in an injury accident. Most of the accidents occurred during clear weather when the road was dry, with no adverse weather conditions.

The accident rate for an intersection is a ratio that relates the number of accidents to the number of vehicles entering that intersection, and allows different intersections with different characteristics to be compared on a consistent basis. Comparing these numbers produces an intersection accident rate that is measured in accidents per million vehicles entering the intersection. The accident rates for major intersections along the corridor are shown in **Figure 3-6**.

The accident severity rate is similar to the accident rate, and is determined by weighting accidents that result in fatalities, injuries, or property damage. Accidents with fatalities and injuries are weighted more. The severity rate at the major intersections is also shown in **Figure 3-6**.



**Figure 3-6: Accident Data at Intersections**



Information in **Figure 3-6** illustrates typical results, with a higher severity rate for intersections in the middle of the corridor where speeds are higher on US 287. (The higher the rate, the more severe the problem.)

The accidents used to calculate the intersection accident and severity rate include accidents that occur approaching or very near the intersection that might be intersection-related, such as rear-ending a vehicle stopping or already stopped for a red light. This is likely one of the causes of the higher accident rate at the Harmony intersection, where there are queuing issues on the intersection approaches and a lane drop in one direction of US 287.

The Harmony intersection has the highest accident rate, yet it has the lowest accident severity rate. This could be a function of lower speeds caused by traffic congestion resulting in fewer injury accidents. Note also that the Saturn Drive intersection has the lowest accident rate and the 2<sup>nd</sup> highest accident severity.

### 3.1.3 Transit

Provided below is a summary of transit services in the vicinity of US 287. The North I-25 EIS is currently evaluating re-growth transit alternatives, such as commuter rail along the US 287 corridor. Further evaluation of transit alternatives therefore, are not covered in detail in this EOS.

#### Fort Collins

The City of Fort Collins operates fixed-route bus and Dial-a-Ride (DAR) paratransit services. The Transfort system has fifteen local bus routes operating on a “pulse” system, whereby transit vehicles meet at a single point at regular intervals to transfer passengers. Ten of the routes operate Monday thru Saturday, year-round, while the other five operate only when CSU and local middle schools and high schools are in session. System headways (time between buses) range from 20 to 60 minutes. The FoxTrot route offers intercity service from Fort Collins to Loveland (South Transit Center to 29<sup>th</sup>/Garfield) on US 287 every hour. The 10-mile trip takes 23 minutes.



In February 2002, the Fort Collins City Council adopted the Transfort Strategic Plan (TSP). The plan's purpose was to develop a viable fixed-route transit system with little funding. The TSP recognizes College Avenue/US 287 as a principal route in all phases of the transit agency's Strategic Operating Plan. In fact, the highway is depicted as part of a regional transit system; the westernmost route in an integrated bus system connecting Fort Collins, Loveland, and Greeley. The US 287 EOS study area is adjacent to the southernmost terminus of a proposed "enhanced travel corridor," namely the 5.5-mile Mason Transportation Corridor (MTC), with plans to offer Bus Rapid Transit (BRT) and pedestrian and bicycle service from Downtown Fort Collins south to approximately ½ mile south of Harmony Road. The BRT corridor would be located along the existing Burlington Northern Santa Fe Railway (BNSF) tracks, a few hundred feet west of College Avenue/US 287. By offering an exclusive right-of-way for buses (i.e., dedicated busway), transit vehicles will not have to compete with automobiles and vice versa, thereby greatly reducing travel times from the CSU campus to Fossil Creek. The BRT system would be compatible with other transit options to Denver and other regional destinations over time. Ground was broken in November 2005 for the first phase of the MTC, a pedestrian/bike path.

The City of Fort Collins has proposed a new transit center to be located along the South Mason Transportation Corridor south of Harmony Road. This center would provide service to the proposed BRT system along Mason Transportation Corridor and other connecting transit routes.

## Loveland

The City of Loveland Transit (COLT) bus system offers two fixed routes operating on one-hour headways, as well as paratransit (minibus) service for elderly and disabled residents. In addition, the City of Loveland provides funding to Fort Collins for operation of the Foxtrot route that connects the two cities via US 287.

The City of Loveland's 2020 Transportation Plan recognizes that increased demand on the roadway network will require an improvement in transit service if roadway LOS of "C" is to be maintained. That is, once the roadways reach capacity and can be widened no further to accommodate the increased demand, other mobility options must become a viable part of the



overall transportation network. The City's Transportation Plan calls for expanding the system both locally and regionally. Relevant components of the transit plan include:

- **Regional Route on US 287** – The City will offer connecting service to other transit systems in the North Front Range in approximately 15 full-size buses. The system will operate over 28 miles of selected arterial streets, including US 287.
- **Transit Center on US 287** - The proposed transit system depicts a transit center on US 287 at 29th Street, calling it an increasingly important destination for transit trips, as well as a logical transfer point for bus travel between Fort Collins and points in Loveland north of downtown.” It also stipulates that a transit center at that location should provide direct pedestrian access to adjacent commercial destinations.

### 3.1.4 Bicycle and Pedestrian Facilities

#### Fort Collins

The City of Fort Collins last adopted a Bicycle Program Plan in 1995, with the goal of becoming one of America's premier “bicycle-friendly” communities. That is, “to make recommendations that can help create a physical environment free of barriers for those who choose to bicycle – a community where bicyclists, motorists, and pedestrians are educated about their respective roles in traffic, where traffic laws are respected by all, and where people are actively encouraged to bike to work, school, shopping, or other destinations.” Bicycle issues identified through the planning process that relate to the US 287 EOS include:

- Facilities are, too often, discontinuous.
- Improved bicycle access to major activity centers should be provided.
- There is little provision for multimodal transportation.
- Bicycles are not routinely considered in planning and design of all new developments and some other street construction projects.

The Bicycle Program Plan of 1995 does not define any specific improvements for the US 287 corridor south of Harmony Road. The preferred north-south alternative in the vicinity is the Burlington Northern Railroad Trail, proposed as a regional and grade-separated bikeway connecting Fort Collins to Loveland. More recently, the *North Front Range 2030 Regional Transportation Plan* lists various bike/pedestrian improvement projects in Fort Collins;



specifically a \$10.3 million project to improve sidewalks and bike lanes from Harmony south to Carpenter Road. Furthermore, the City's 2004 US 287/South College Avenue Bicycle Lane project outlines the following relevant bicycle facility improvements:

- Provide full corridor on-street bike lanes on US 287/South College Avenue between Carpenter and Harmony Roads.
- Add off-road trail connections to the Fossil Creek Trail and Harmony Road (east side of US 287/South College Avenue between Palmer Drive and Harmony Road).
- Widen northbound US 287/South College Avenue north of Carpenter Road to provide separate acceleration and bike lanes.
- Add wider detached sidewalks (8 feet or wider) along US 287/South College Avenue to serve as multiuse paths.
- Improve bike detection at signalized intersections.
- Maintain and repair roadway surface.
- Separate bike lanes from turning lanes at all major/signalized intersections as specified in the *Larimer County Urban Area Street Standards*.

In 1996, the City of Fort Collins developed a comprehensive pedestrian plan, with the idea of creating a more pedestrian-oriented environment and promoting walking as a viable transportation alternative. The Pedestrian Plan established action items for creating a pedestrian-friendly city that's more conducive to walking. Those that relate to the US 287 EOS include:

- **LOS Measurements and Standards** - Approve pedestrian LOS measurements and target pedestrian LOS standards by development area within Fort Collins. Specifically, the five LOS measures established were directness, continuity, street crossings, visual interest and amenity, and security.<sup>2</sup>
- **Pedestrian Right-of-Way Ordinances** - Change the City traffic ordinances to give right-of-way to the pedestrian over the automobile at crosswalks, intersections, and driveways, and promote an active education and enforcements of this ordinance.

<sup>2</sup> These Pedestrian Levels of Service "quality indicators" are also required for the City of Loveland, as stipulated on page 4-28 of the document *Larimer County Urban Street Standards* (October 1, 2002).



- **Sidewalks, Corner Ramps, and Stop Bars** – Approve revised sidewalk, corner ramps, and other miscellaneous standards and policies that will elevate the pedestrian as a mode of transportation.

In the project vicinity, bicycle and pedestrian improvements are planned along the Mason Transportation Corridor. These improvements were approved by Fort Collins voters and construction began in late 2005. Within the US 287 study area, the City of Fort Collins Pedestrian Plan does not identify any pedestrian-only improvements.

## Loveland

The City of Loveland's *2020 Transportation Plan* states that bicycle mobility options exist within private developments, the on-street bicycle system, and highly utilized off-street paths. The document states that despite the lack of bike lanes and shared bike/curb lanes in the urban core, the grid street pattern lends itself to bicycling and walking with ease. *The 2020 Transportation Plan* recognizes key bicycle issues. Those that relate to the US 287 EOS include:

- **Continuity** - The lack of continuous north - south and east - west arterials with designated bicycle lanes.
- **Regional Connections** - Cyclists wanting to commute between Loveland and Fort Collins must do so on inadequate facilities. Narrow shoulder widths on streets such as at Wilson/Taft Hill, along with increasing traffic volumes, create a hostile environment for cyclists. The document mentions a lack of shoulders and bike lanes in the area as well. On US 287, the shoulders become right - turn only lanes and disappear through town.

The City of Loveland understands the need to offer residents an interconnected network of bicycle pathways and trails if it wants to promote cycling as a viable transportation option. The City's *2020 Transportation Plan* calls for expansion of its current curvilinear 10-mile bike trail to double in length over the next 15 years, where it will eventually cross US 287 at 57th Street. While the plan doesn't specify the total miles of proposed additional on-street bikeways or multiuse paths, it does indicate an infill of the missing link (broken connection) from 57th to approximately 47th Streets, thereby creating a seamless bikeway along the entire north-south US 287 corridor. As mentioned previously, the proposed transit center on US 287 at 29th Street would also be fully accessible from all directions by bicycle under the Proposed Bicycle Plan.





As in its analysis of bicycle facilities, the City of Loveland's *2020 Transportation Plan* recognizes key pedestrian issues. The one that relates directly to the US 287 EOS is:

- **Lack of Continuity in Pedestrian Networks** - Specifically, routes within established pedestrian districts that include areas of broken sidewalks, missing links, and poor surface quality.

There are no specific City of Loveland pedestrian-only improvements identified in the US 287 study area.

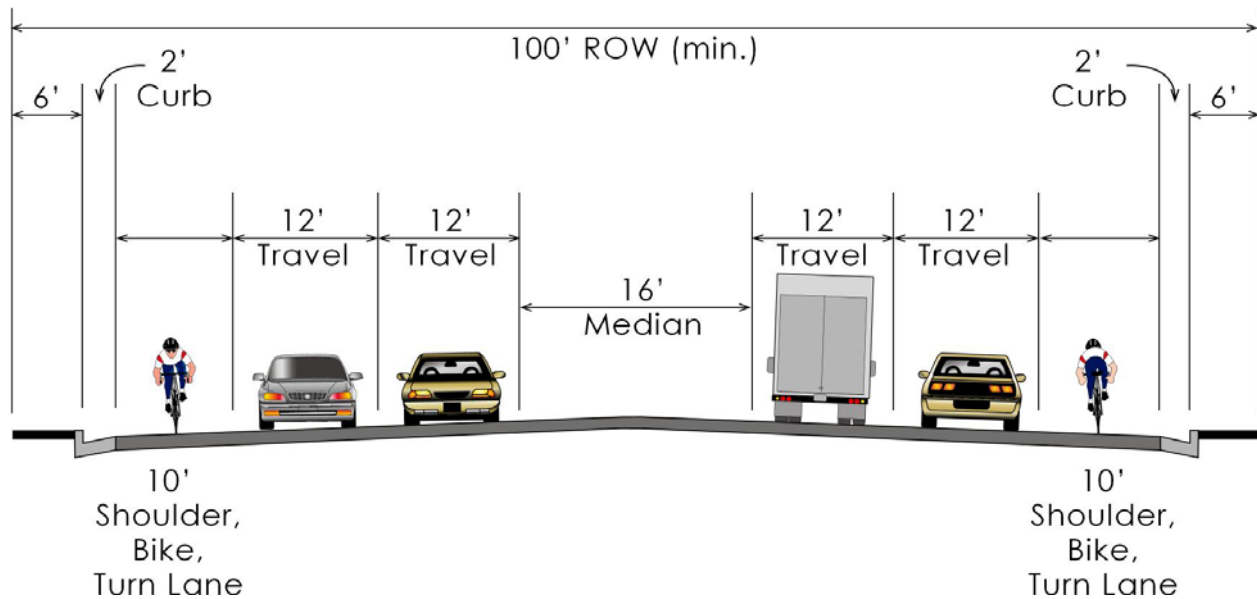
## 3.2 Infrastructure

---

This section summarizes the existing roadway and utilities infrastructure.

### 3.2.1 Existing Roadway

The section of US 287 in the study area was designed and constructed in the early 1970s with an 84-foot pavement width, as shown in **Figure 3-7** (existing cross section). In most of the corridor this width has stayed as originally built, with right-turn lanes for some accesses and intersections created by restriping the 10 foot shoulder as a right-turn lane. Only recently have separate right-turn lanes been built at Trilby Road and at Fossil Creek Parkway. In addition, the approach to the Harmony Road intersection was changed substantially to accommodate double left-turn lanes and other transitions.



**Figure 3-7: Existing US 287 Cross Section**

The design speed on US 287 accommodates a 55 mph design speed under current design standards. This assessment is based mostly on the vertical geometry, since there are no curves on the alignment except at the south end.

This section of US 287 was designed to accommodate relatively low traffic volumes traveling at higher speeds between Loveland and Fort Collins. US 287 also primarily provided access for farms, single large-lot homes, and small businesses along the corridor. Suburban growth and the associated traffic volume increase and access demands have resulted in approximately half-mile signal spacing throughout the corridor, and large commercial and residential developments now have high-volume access points to the corridor. US 287 now must serve the competing purposes of intercity travel as well as local access along the corridor.

The CDOT functional classification identifies this portion of US 287 as a Non-Rural Regional Arterial (NR-A). The NR-A classification identifies US 287's primary purpose as providing regional traffic mobility over long distances at higher and consistent speeds. Access to adjacent private properties is a secondary and discouraged function of the NR-A category road.



Although access to adjacent private properties is a discouraged function of the NR-A category road, US 287 has numerous private property accesses. Many of the existing access points do not meet modern design standards for spacing, speed change lanes (turn lanes), turning radii, etc. The existing roadway is deficient in terms of access control.

The benefits of good access control on major roadways are well documented in terms of safety and traffic capacity. Accesses create vehicle conflict points, and fewer conflict points on a road will lead to fewer accidents and fewer interruptions of the traffic flow. Because US 287 is a state highway, CDOT and the traveling public expect it to have a high level of service. Access goals should include reducing the total number of access points to US 287 as well as bringing the existing or revised access points up to a higher standard.

The City of Fort Collins' *Transportation Master Plan* (adopted in March 2004) includes a Master Street Plan (MSP) that depicts US 287/South College Avenue as the city's principal, north-south, 6-lane arterial, connecting the Colorado State University campus with Loveland. According to the *Transportation Master Plan*, the MSP is designed to help guide the development of the future street system for the city and its Growth Management Area (GMA), by acting as a reference tool for the planning and layout of existing and future development's key transportation and circulation connections. The MSP network will also serve to achieve the following results:

*A significant shift in travel behavior, with more trips shifting away from single-occupant travel into transit, walk and bicycle, and multi occupant travel modes; a reduction of growth in daily Vehicle Miles Traveled (VMT); and attainment of city air quality objectives.*

The City of Loveland's *2020 Transportation Plan* depicts US 287 as a high growth area, especially on the west side of the highway. Dwelling units in the immediate area are projected to increase by 83 percent and employment by 155 percent by 2020. Thus, the plan includes widening the highway to six lanes from the north Loveland border at 71<sup>st</sup> Street (CR 30) to West 29th Street in order to maintain an LOS of C.



### 3.2.2 Existing Utilities

Existing utilities within the US 287 study area are listed below in **Table 3-1**. There are no utilities identified that present major constraints or construction problems along the corridor. Specific utility location and engineering will be needed for future US 287 improvement projects.

**Table 3-1:  
Existing Utilities**

<b>Operator/Owner</b>	<b>Within Public Right-of-Way?</b>	<b>Crossing or Parallel</b>	<b>Type</b>	<b>Description</b>
City of Greeley Water Utilities	Y	Crossing	Raw Water	42 inch concrete raw water line along Dry Creek from Loveland Lake to Water Treatment Plant west of Boyd Lake
City of Loveland - Wastewater Division	Y	Crossing	Sanitary Sewer	Sanitary sewer across US 287 on the south side of Dry Creek
City of Loveland - Stormwater Division	Y	Crossing	Stormwater	30 inch PVC stormwater crossing US 287 south of 37th St.
City of Loveland - Stormwater Division	Y	Crossing	Stormwater	30 inch line 29th St. from Buchanan to Lincoln St.
Comcast	Y/N	Both	Fiber	Overhead/buried fiber on west side of US 287 from 29th to Harmony Rd.
ICG Telecom	Y	Crossing	Fiber	Buried fiber in PRPA conduit in 29th St.
ICG Telecom	Y	Crossing	Fiber	Buried fiber in PRPA conduit in Harmony Rd.
MCI	Y	Parallel	Fiber	Buried fiber on west side of US 287 from 29th to Harmony Rd. (formerly Wiltel, still marked with Wiltel markers)
McLeod USA	Y	Crossing	Fiber	Buried fiber on south side of Harmony Rd. from Taft to across US 287
Platte River Power Authority	Y	Crossing	Electrical	Overhead 115kV transmission line on south side of W. 65th St.
Qwest Communications (local network)	Y	Parallel	Fiber	Buried fiber in concrete duct on west side of US 287
South Fort Collins Loveland Sanitation District	Y	Parallel	Sanitary Sewer	Sanitary sewer on west side US 287 near Longview Market Place Project.



**Table 3-1:  
Existing Utilities (continued)**

<i>Operator/Owner</i>	<i>Within Public Right-of-Way?</i>	<i>Crossing or Parallel</i>	<i>Type</i>	<i>Description</i>
Fort Collins Loveland Water District	Y	Parallel	Water	14 inch ACP on east side of US 287 from north of Harmony Rd. to LCR 30. (asbestos containing pipe)
Xcel Energy	Y	Crossing	Gas	12 inch HP gas line in north side of LCR 32/Carpenter Rd. across US 287
Louden Irrigating Canal and Reservoir Co.	N	Both	Irrigation	Louden Extension Ditch on west side of US 287 near W. 57th St., crosses US 287 north of W. 57th St.
Louden Irrigating Canal and Reservoir Co.	N	Crossing	Irrigation	Big Lateral crosses US 287 north of W. 29th St. - carries water to Cemetery Lake
TBD	N	Crossing	Irrigation	Exchange Ditch, Dry Creek crossing southwest to northeast north of W. 29th St.
TBD	N	Crossing	Irrigation	New Mercer Ditch crossing US 287 west to east just south of Harmony Rd.

### 3.3 Right of Way

The existing right-of-way width in the US 287 study area is typically 100 feet; the 88-foot roadway (84-feet plus 2-foot gutters each side) is centered in this basic right-of-way template. The right-of-way is wider in several areas, either due to project slope requirements during original construction, or with right-of-way dedications added from adjacent developments. Existing right-of-way lines were obtained from Larimer County GIS mapping and are shown on the plan sheets in the Appendix.

### 3.4 Environmental Resources

During the initial phase of this study, the study area was assessed to identify potential environmental issues for consideration in the development of a context-sensitive transportation solution for US 287. Early scoping meetings between CDOT, Loveland, Fort Collins, Larimer County, and NFRMPO at the start of the study helped to identify additional issues. Furthermore, public input received during three public open houses in April 2005, July 2005, and



January 2006 helped focus and confirm environmental issues. Environmental considerations identified through this process were noise, air quality, water quality, wetlands, wildlife, threatened and endangered (T&E) species, sensitive populations (those considered low income or minority), publicly owned parks, archeology, paleontology, historic properties, and hazardous materials. An overview of these resources within the US 287 study area and their role in planning potential transportation improvements is provided in the following sections.

### 3.4.1 Land Use Considerations

As part of the preliminary investigations related to the US 287 EOS process, planners for the Cities of Loveland and Fort Collins were contacted to determine land use influences in the study area (Harmony Road south to 29th Street) that might affect the outcome of the project. The following is a summary of our findings:

- **City of Fort Collins** – The most significant land use activity in the study area is the pending annexation of the Southwest Enclave, a 2.75 square-mile area of existing development in unincorporated Larimer County. The annexation area includes frontage along US 287, from Harmony Road south to approximately Trilby Road (see **Figure 3-8**). While the proposed annexation would not trigger any additional development activity or land use changes in the study area, it would potentially create the opportunity for redevelopment of properties and intensification in this area over time.
- **City of Loveland** – A significant amount of development activity is planned in the northern area of the city, along the US 287 corridor. The cornerstone of this activity includes a new Wal-Mart super center located at the southwest corner of 65<sup>th</sup> Street and US 287. The planned development also includes a significant amount of residential development to the south and west of the Wal-Mart site.

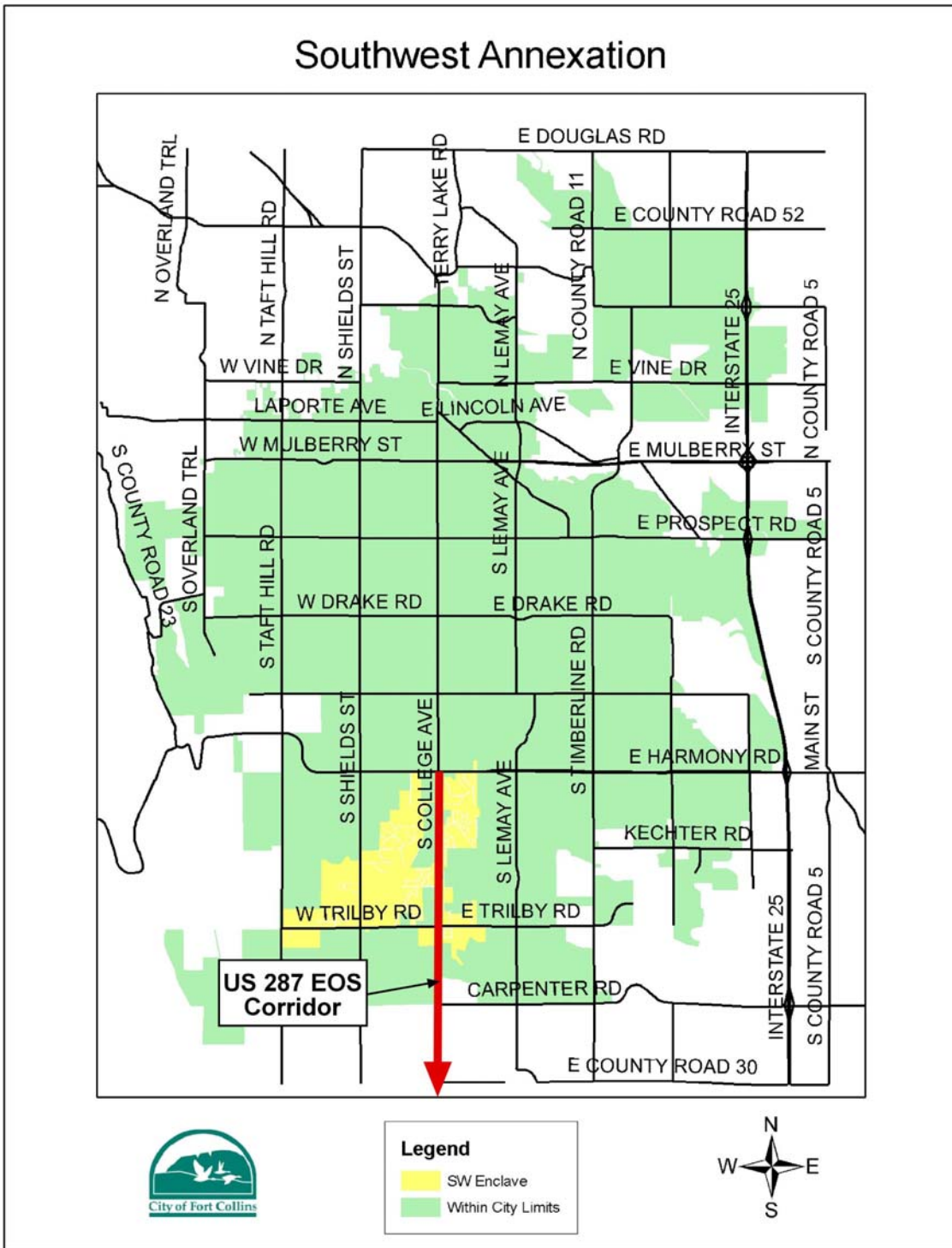


Figure 3-8: Southwest Annexation



### 3.4.2 Noise

Overall, there is a mixture of noise-sensitive land uses in the study corridor including residences, commercial properties, schools and churches. Several large residential subdivisions are within 200 to 300 feet of the highway just south of 29<sup>th</sup> Street, and between 35<sup>th</sup> and 57<sup>th</sup> Streets. Commercial enterprises are closest to US 287 from 29<sup>th</sup> to 37<sup>th</sup> Streets. Of concern will be a residential development located immediately off the west side of US 287 on Basswood Drive between 45<sup>th</sup> and 49<sup>th</sup> Streets. There are mobile home facilities located well back from the highway in all quadrants of the intersection of 57<sup>th</sup> Street and US 287.

The developments between 57<sup>th</sup> Street and County Road 30/71<sup>st</sup> Street are mostly isolated farms, residences and businesses. However, a large subdivision is located 0.5 mile southeast of Carpenter Road and there are several subdivisions carpeting the west side of US 287 north of Carpenter Road. A condominium complex is inside the 200-foot envelope of US 287 about 0.25 mile south of Fossil Creek Parkway.

Most of the businesses located along US 287 are concentrated at the northern end of the study corridor between Trilby and Harmony Roads and have advantageous frontage for advertising, access, and parking.

#### Existing Noise

A noise measurement was taken during evening peak hours near an apartment complex at 47<sup>th</sup> Place along the west side of US 287, at a distance that was the closest of any residence to the travel lanes (approximately 50 feet from the road). Traffic was heavy but flowed close to posted speed limits of 50 mph. This noise level is tabulated in **Table 3-2** and provides a background noise level for comparison to the predicted noise level (impact). The predicted noise level 1 was calculated using the TNM 2.5 noise model, as approved by FHWA. This noise level is slightly below the level at which CDOT and FHWA would recommend consideration of noise mitigation, which is 67 decibels (OBA).





**Table 3-2:  
Measured Noise Levels**

Location	Activity Category	Existing Noise Levels During Peak Hours (dBA)		Difference (dBA)
		Measured	Calculated	
47 <sup>th</sup> Place near Grant Avenue	Residential	64.3	65.6	+1.3

### 3.4.3 Air Quality

The US 287 study area is located within Larimer County, which is currently listed by the EPA as an attainment/maintenance area for carbon monoxide and small particulate matter (PM-10). Furthermore, the Denver metropolitan area (including southeast Larimer County and the US 287 study area) was designated as non-attainment for ozone, but with a deferred effective date of this designation because of the area's participation in EPA's ozone Early Action Compact program.

### 3.4.4 Water Resources

The US 287 study area is located in the Platte River Basin in two tributary to the watersheds, the Big Thompson River watershed, and the Cache la Poudre River watershed. The Platte River Basin covers 21,000 square miles in northeastern Colorado, and has the largest population of all river basins in Colorado. The Platte River Basin drains approximately 19,020 square miles. The study area is located north of the Big Thompson River and south of the Cache la Poudre River. Both rivers are considered extremely important to the economy and character of Loveland and Fort Collins.

### Surface Water

Surrounding the study area there are a great number of rivers, creeks, streams, lakes, reservoirs, canals, and irrigation ditches. Surface water includes Mail Creek Ditch, New Mercer Ditch, Larimer County Canal Number 2, Fossil Creek, Loudon Ditch, and Robert Benson Lake. Surface water resources within the US 287 study area are shown on **Figure 3-9**.



### Water Body Classifications

Segments of Fossil Creek, Mail Creek Ditch and Dry Creek are classified for current or potential designated use(s) based on water use classification established by the Colorado Department of Public Health and Environment Water Quality Division. These classifications refer to the level of support a particular body of water holds for particular uses. Water uses in the study area include irrigation for agricultural uses and recreation. However, the designated use for aquatic life is Warm Water Class 2, which means the waters “are not capable of sustaining a wide variety of warm water biota.” BIOTA refers to a wide range of living organisms including plants and animals.

Robert Benson Lake designated uses include irrigation for agricultural uses and recreation. The designated use for aquatic life is Warm Water Class 1 which means the waters are “currently capable of sustaining a wide variety of warm water biota, including sensitive species, or could sustain such biota but for correctable water conditions. Waters shall be considered of sustaining such biota where physical habitat, water flows of levels and water quality conditions result in no substantial impairment of the abundance and diversity of species.”

### Water Quality

Overall, the quality of the surface water in the Big Thompson River tributaries (Dry Creek) and the Cache La Poudre River tributaries (Fossil Creek and Mail Creek Ditch) is “good” or all designated uses have been attained (EPA 2002).

However, the water quality has been compromised by urban/suburban development and irrigation (runoff). According to the City of Fort Collins Web site, due to erosion the “channel of Fossil Creek and its tributaries are very unstable, with steep banks-in some places up to 25 feet high.” Dry Creek in Loveland has also suffered from some erosion, but not to the level of Fossil Creek.

Section 303(d) of the Clean Water Act (CWA) requires states to prepare lists of impaired waters for which technology-based effluent limitations (and other required controls) are not effective enough to comply with water quality standards. There are no impaired water resources within the study area.



## Floodplains

Two streams cross US 287 in the study area, Dry Creek in Loveland and Fossil Creek in Fort Collins. In addition, the maps show three ephemeral drainages crossing the corridor between Trilby Road and Harmony Road in Fort Collins. The Federal Emergency Management Agency's Flood Insurance Rate Maps indicate that the US 287 study area is located within Zone "X", defined as "areas determined to be outside the 500-year floodplain" or within "Zone C", defined as "areas of minimal flooding."

## Groundwater

There are no sole-source aquifers in the study area. Sole-source aquifers are those that are not naturally recharged. Groundwater in the study area includes alluvial aquifers and bedrock aquifers.

## Stormwater Runoff

Within the study area there are two stormwater quality basins that settle pollutants from stormwater runoff. Fort Collins has several sub-watersheds that settle water from the Cache la Poudre River Basin. The two sub-stormwater basins within the study area are the McClellands/Mail Creek Basin and the Fossil Creek Basin. In Loveland the stormwater basin is the Big Thompson River Basin.

### 3.4.5 Wetlands and Riparian Areas

Wetlands are unique communities that are comprised of three essential characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology. Generally, wetlands are important because of beneficial functions, which include recharging ground water, controlling floods, improving water quality via sediment control and excess nutrient removal, providing wildlife habitat, and enhancing aesthetic/scenic values.

A site visit and review of publicly available literature regarding potential wetland locations within the vicinity of US 287 study area was conducted in June 2005. Wetland identification was based on the presence of hydrophytic vegetation (plants tolerant of saturated soils) and surface



water. Wetland sites were recorded on aerial photographs and photographed. The survey included noting wetland areas just outside of the existing US 287 right-of-way.

Sixteen wetland sites are located in or adjacent to the study corridor (**Figure 3-9 and Table 3-3**); most sites are associated with a stream or irrigation ditch. Wetlands are numbered from south to north and described below. **Table 3-3** also identifies wetlands that may fall under the jurisdiction of the Army Corps of Engineers (COE).

**Table 3-3:  
Potential Wetlands**

<b>Wetland Location</b>	<b>Within Study Area?</b>	<b>Cowardin Type</b>	<b>Dominant Vegetation</b>	<b>Wetland Potentially Regulated by the Corps of Engineers*</b>
1	No	Scrub-shrub	Sandbar willow	Yes
2	Yes	Emergent	Reed canarygrass	Yes
3	Yes	Aquatic bed	Pondlily	No
4	Yes	Emergent	Cattail	Yes
5	Yes	Scrub-shrub	Sandbar willow	No
6	Yes	Emergent	Cattail	No
7	Yes	Emergent/scrub-shrub	Cattail, peachleaf willow	Yes
8	Yes	Scrub-shrub	Crack willow	Yes
9	Yes	Emergent	Arctic rush	Yes
10	Yes	Scrub-shrub, emergent	Plains cottonwood, reed canarygrass	Yes
11	Yes	Emergent	Common threesquare	No
12	Yes	Emergent	Sandbar willow	No
13	Yes	Emergent	Reed canarygrass	Yes
14	Yes	Emergent	Soft stem bulrush	Yes
15	Yes	Emergent	Cattail	No
16	Yes	Scrub-shrub	Reed canarygrass	Yes

\*To be determined by the Corps of Engineers (COE)

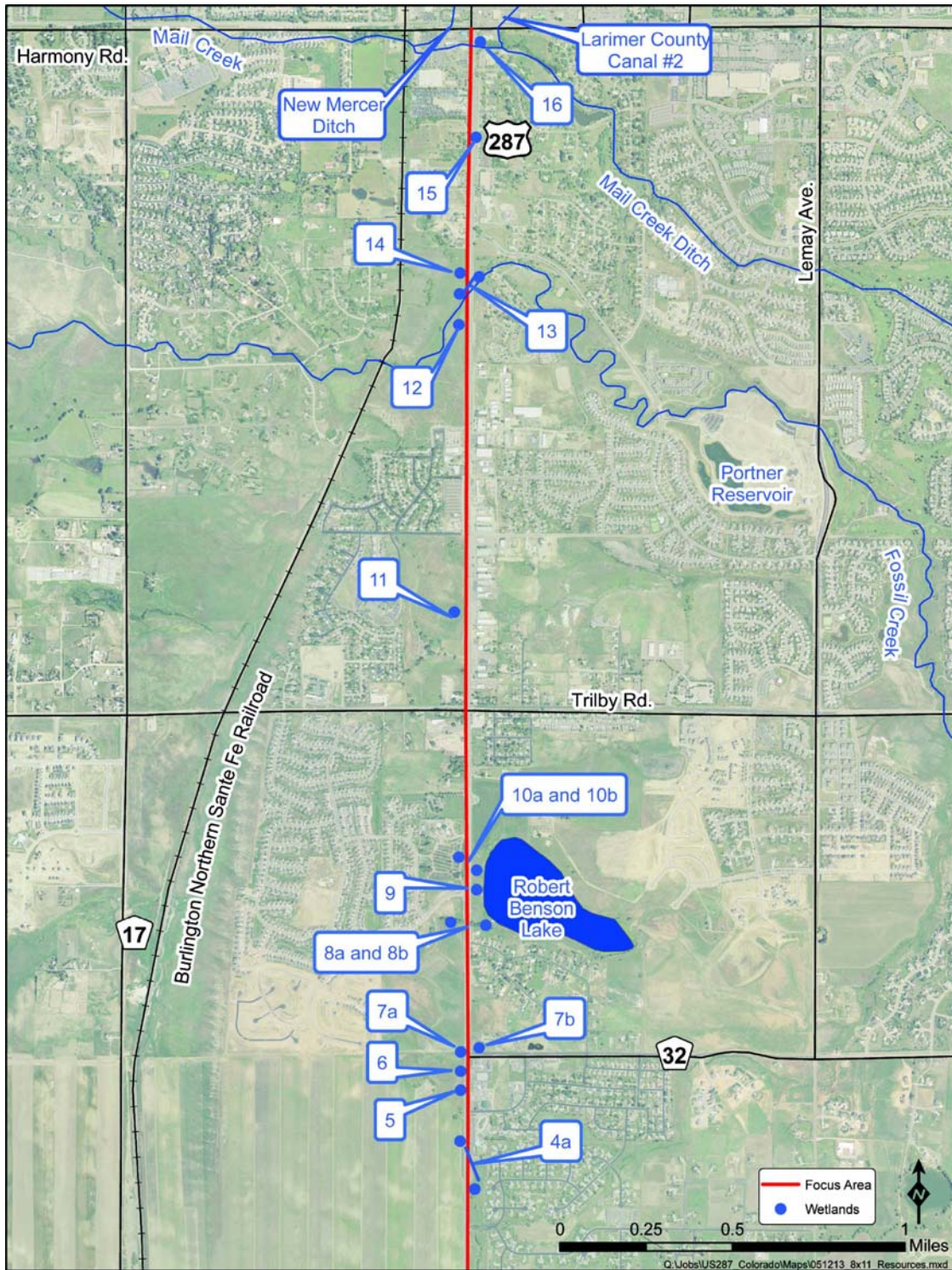


Figure 3-9: Wetland and Waterbodies North

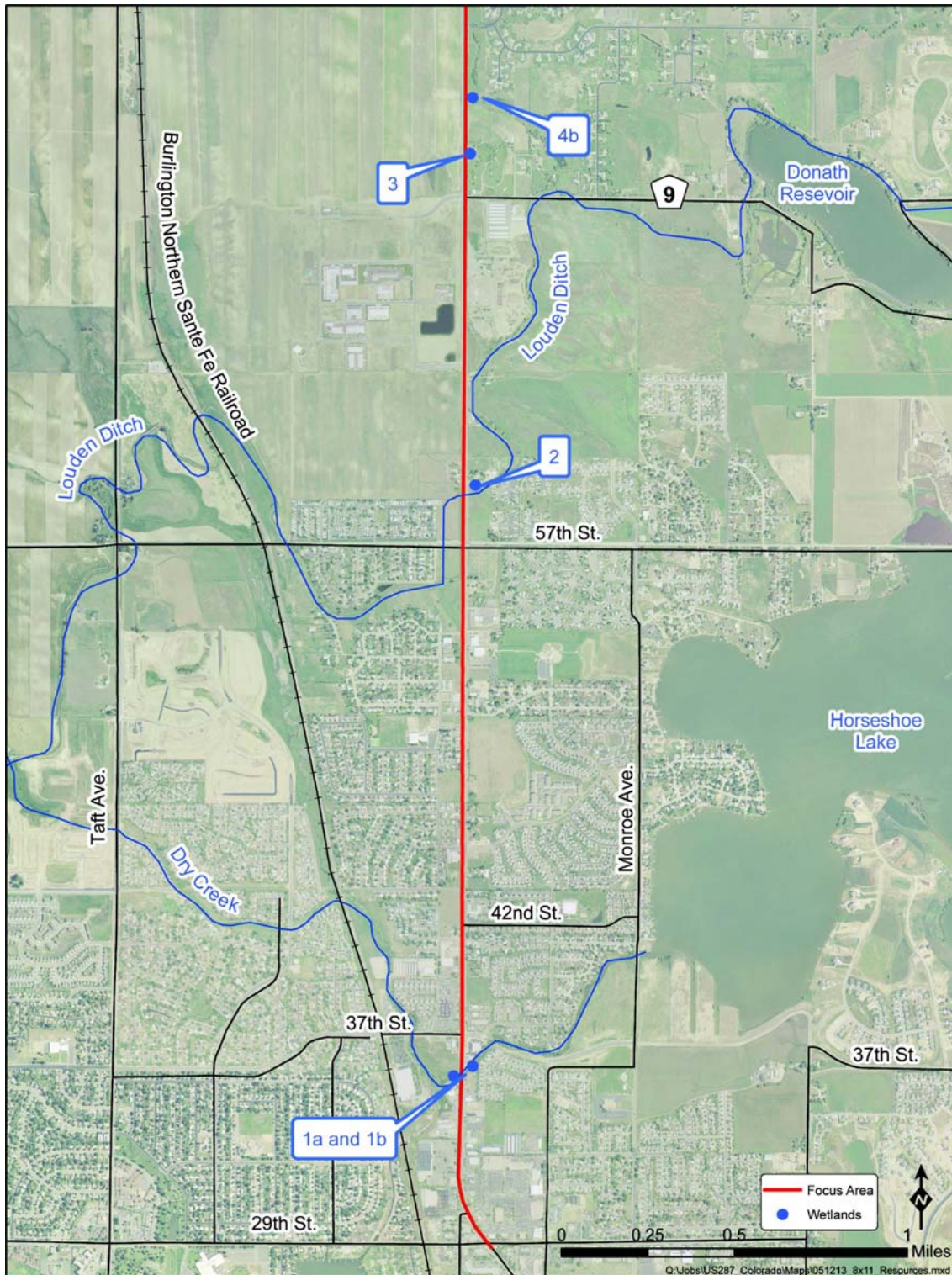


Figure 3-9: Wetland and Waterbodies South



**Wetlands 1a and 1b.** Wetlands 1a and 1b are scrub-shrub wetland bands adjacent to Dry Creek south of 37<sup>th</sup> Street in Loveland. The wetlands on both sides of US 287 are outside of the highway right-of-way. Large concrete chunks are present at the culvert outlet east of US 287. Dominant wetland vegetation is sandbar willow (*Salix exigua*, Facultative Wetland<sup>3</sup>). Riparian vegetation on the canal banks above the wetland bands includes Siberian elm (*Ulmus pumila*, Facultative) and plains cottonwood (*Populus deltoids* subsp. *monilifera* Facultative). Hydrology is supplied by canal flows and runoff. Wetlands 1a and 1b are possibly non-jurisdictional wetlands.

**Wetland 2.** Wetland 2 is an emergent wetland band adjacent to an irrigation ditch on the east side of US 287. Dominant vegetation is reed canarygrass (*Phalaroides arundinacea*, Facultative Wetland +<sup>4</sup>). Hydrology is supplied by irrigation canal flows and runoff. Cliff swallows and ducks were observed at the time of survey. Wetland 2 is possibly a non-jurisdictional wetland.

**Wetland 3.** Wetland 3 is an aquatic bed wetland in the Rest Haven Cemetery decorative pond east of US 287. Only the westernmost portion of the pond and wetland are within the study corridor. Dominant vegetation is pondlily (*Nuphar spp.*, Obligate<sup>5</sup>). A band of riprap bank surrounds the pond. Goldfish were present at the time of survey. Hydrology is supplied by a fountain. Wetland 3 appears to be a non-jurisdictional wetland.

**Wetland 4a and 4b.** Wetlands 4a and 4b are emergent wetland bands adjacent to an irrigation canal on the east and west side of US 287. Only Wetland 4b is within the study area boundaries. Dominant vegetation is cattail (*Typha ssp.*, Obligate), Emory's sedge (*Carex emoryi*, Obligate), and reed canarygrass. Hydrology is supplied by irrigation canal overflows and natural runoff. Wetlands 4a and 4b appear to be jurisdictional.

<sup>3</sup> Facultative Wetland = Wetland plant species that usually (67-99% probability) occur in wetlands.

<sup>4</sup> Facultative Wetland (+) = Is an in-between rating for wetland plants species that typically are found more often in wetlands than Facultative Wetland species, but are not as commonly found in wetlands as Obligate species (see next footnote).

<sup>5</sup> Obligate = Wetland plant species that almost always (>99% probability) occur in wetlands.



**Wetland 5.** Wetland 5 is a scrub-shrub wetland located near the western border of US 287, south of the US 287 and 32 Road intersection. Dominant vegetation is sandbar willow with smooth brome (*Bromopsis inermis*, Facultative Upland) along the upper edges. Hydrology is provided by natural runoff. Wetland 5 appears to be non-jurisdictional.

**Wetland 6.** Wetland 6 is an emergent wetland swale located on a small slope west of US 287. Dominant vegetation is cattail with upland vegetation and weed species invading the swale upper edges. Hydrology is supplied by natural runoff and annual precipitation. Wetland 6 appears to be non-jurisdictional.

**Wetland 7a and 7b.** Wetlands 7a and 7b are emergent and scrub-shrub wetland swales located in the northeast and southwest corners of the US 287 and 32 Road intersection. The two wetlands are connected through a culvert leading under US 287. Dominant vegetation is peachleaf willow (*Salix amygdaloides*, Facultative Wetland), foxtail barley (*Critesion jubatum*, Facultative), cottonwood, and cattail. Hydrology is supplied by roadway and slope runoff. Wetlands 7a and 7b appear to be jurisdictional.

**Wetland 8a and 8b.** Wetlands 8a and 8b are scrub-shrub wetland bands adjacent to a drainage that travels beneath US 287 through a culvert connecting into Robert Benson Lake. Dominant vegetation is crack willow (*Salix fragilis*, Facultative) with minor occurrence of Russian-olive (*Elaeagnus angustifolia*, Facultative) on both sides of the roadway. Hydrology is supplied by drainage overflows and runoff. Wetlands 8a and 8b appear to be jurisdictional.

**Wetland 9.** Wetland 9 is an emergent swale located between the east edge of US 287 and Robert Benson Lake. Dominant vegetation is arctic rush (*Juncus arcticus*, Obligate), cattail, and Emory's sedge. Hydrology is supplied by runoff and overflows from Robert Benson Lake. Wetland 9 appears to be jurisdictional.

**Wetland 10a and 10b.** Wetlands 10a and 10b are scrub-shrub and emergent swales located on the east and west side of US 287 across from Robert Benson Lake. Wetland 10a is located between a garden nursery business and the west side of US 287, and Wetland 10b is located





between the east edge of US 287 and Robert Benson Lake. A small scour pool exists at the toe of slope for Wetland 10b. Dominant vegetation is reed canarygrass, cattail, cottonwood, and minor occurrence of sandbar willow. Hydrology is supplied by a culvert draining and adjacent pond and wetland area on the west side of US 287. Wetlands 10a and 10b appear to be jurisdictional.

**Wetland 11.** Wetland 11 is an emergent swale located on the west side of US 287. Dominant vegetation is common three square (*Schoenoplectus pungens*, OBL), Nebraska sedge (*Carex nebrascensis*, Obligate), arctic rush, and foxtail barley. Hydrology is supplied by natural site runoff and annual precipitation. Wetland 11 appears to be non-jurisdictional.

**Wetland 12.** Wetland 12 is an emergent swale located in a natural ditch outlet on the west side of US 287, south of Fossil Creek. Dominant vegetation is sandbar willow, American elm, cottonwood, and cattail. Hydrology is supplied by site runoff. Wetland 12 appears to be non-jurisdictional.

**Wetland 13.** Wetland 13 is emergent wetland bands located along the banks of Fossil Creek. Dominant vegetation is reed canarygrass and Emory's sedge. Hydrology is supplied by Fossil Creek overflows and roadway runoff. Wetland 13 appears to be jurisdictional.

**Wetland 14.** Wetland 14 is an emergent wetland band located in an unnamed drainage on the west side of US 287 north of Fossil Creek. This wetland is 40 feet away from the edge of pavement for US 287 and is outside of the study area. Dominant vegetation is soft stem bulrush (*Schoenoplectus lacustris subsp. creber*, Obligate), peachleaf willow, and Emory's sedge. Hydrology is supplied by natural runoff and annual precipitation. Wetland 14 appears to be jurisdictional.

**Wetland 15.** Wetland 15 is an emergent wetland band located within 50 feet of unpaved roadside ditch along the eastern border of US 287; the remainder of the ditch is concrete lined. Dominant vegetation is cattail (*Typha spp.*, Obligate). Hydrology is supplied by roadway runoff and annual precipitation. Wetland 15 appears to be non-jurisdictional.



**Wetland 16.** Wetland 16 is scrub-shrub wetland band along the banks of Mail Creek Ditch located southeast of the US 287 and Harmony Road intersection. Wetland bands are located at the toe of steep slopes along Mail Creek and possibly begin outside of the study area. Dominant vegetation is reed canarygrass. Hydrology is supplied by Mail Creek Ditch and roadway runoff. Wetland 16 appears to be jurisdictional.

### 3.4.6 Wildlife and Threatened and Endangered Species (T&E)

Suitable habitat for common wildlife species (deer, song birds, rabbit, squirrel) was found in several locations within the study boundaries, primarily within the Long View Farm Open Space area and the Redtail Grove Natural Area. Vegetation in these areas ranges from sparse to dense and generally provides good hiding cover for small mammals and breeding habitat for certain song birds. Animals such as raccoons, red fox, and mule deer likely use the open space areas.

Federal T&E species are protected under the Endangered Species Act (ESA) of 1973 as amended (16 U.S.C. 1531 et seq.). Significant adverse effects to a federally listed species or its habitat would require consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the ESA. This section requires federal agencies to ensure that actions which they authorize, fund, or carry out are not likely to jeopardize the continued existence of proposed, threatened, or endangered species or result in the destruction or adverse modification of their critical habitat.

A tabulation of federally listed and other sensitive species was provided by the Colorado National Heritage Program (CNHP) and Fish & Wildlife Service during July 2005. Three federally threatened or endangered species were identified by the CNHP as potentially occurring within the study area including:

<b>Scientific Name</b>	<b>Common Name</b>	<b>Category</b>
<i>Grus americana</i>	<i>Whooping Crane</i>	<i>Endangered</i>
<i>Mustela nigripes</i>	<i>Black-footed Ferret</i>	<i>Endangered</i>
<i>Zapus hudsonius preblei</i>	<i>Preble's Meadow Jumping Mouse</i>	<i>Threatened</i>
<i>Spiranthes Diluvialis</i>	<i>Ute Ladies – Tresses Orchid</i>	<i>Threatened</i>



**Whooping Crane.** The whooping crane was first listed as endangered and protected under the ESA on March 11, 1967, and is currently listed as endangered, except where listed as an experimental population. In addition to protection offered by the ESA, the whooping crane is protected by the Migratory Bird Treaty Act of 1918 (MBTA).

The whooping crane stands approximately five feet tall and has a very long, sinuous body with white feathers, long pointy beak, red and white colors on its head, and jet black wing tips. The wings for the crane measure approximately seven feet across. The crane normally nest once per year producing one to two eggs in late April to mid-May. Primary habitat for this species is comprised of various wetland types in areas largely undisturbed by human activity. During migration the crane will use various habitats other than wetland areas, including areas of cropland. Primary winter habitat is comprised of salt flats on Arkansas National Wildlife Refuge and adjacent islands. There is no suitable habitat in the US 287 study area.

**Black-Footed Ferret.** The black-footed ferret was first listed as endangered and protected under the ESA on March 11, 1967, and is currently listed as endangered, except where listed as an experimental population. A member of the weasel family, the ferret can grow up to two feet in length and weigh between two to three pounds. This nocturnal species is considered to be the rarest native mammal in North America and is known for being very quick and agile. Primary habitat for the ferret is found in established prairie dog towns and plateaus. Diet for the ferret consists primarily of prairie dogs, mice, birds, ground squirrels, insects, and other small animals. Habitat loss has been the main contributing factor in the serious population decline for the black-footed ferret. There is no suitable habitat identified in the US 287 study area.

**Preble's Meadow Jumping Mouse.** In May 1998 the Preble's meadow jumping mouse (PMJM) was listed as threatened in its entire range under the ESA. Currently PMJM is being proposed for removal from the ESA because of recent research indicating that PMJM should not be classified as a separate subspecies of meadow jumping mouse. PMJM is a shy, mostly nocturnal tiny rodent with an approximately 3-inch body, 6-inch tail, large feet, and long hind legs. Its physical build enables the mouse to jump 18 inches into the air and change direction mid-flight using its tail.



Typically along Colorado's Front Range, PMJM inhabits relatively undisturbed grasslands below 7,500 feet in elevation, which are comprised of dense herbaceous vegetation, and thick shrubs that provide cover. Most desirable habitat areas for PMJM are close to a water source. Minor potential for areas of suitable mouse habitat may exist in the floodplain of Fossil Creek on the west side of US 287. The area of this new construction does not contain suitable habitat for the Preble's meadow jumping mouse (*Zapus hudsonius preblei*). Areas immediately upstream and downstream have been surveyed for the mouse in recent years, and none were found. Reports of these surveys are on file with the US Fish & Wildlife Service. Also, based on large volume of human disturbance throughout the study area and lack of PMJM sightings, it is highly unlikely any of these areas will contain any PMJM populations. Because of lack of known suitable habitat and volume of human disturbance in the study area, there are unlikely to be PMJM populations that could be affected by roadway alternatives.

**Ute ladies'-tresses orchid.** The Ute ladies'-tresses orchid was listed as a threatened species for protection under the ESA in January 1992. The Ute Ladies'-Tresses orchid is a perennial terrestrial orchid that occurs at elevations below 6,500 feet, typically in wet fairly open riparian areas, alluvial meadows, flood plains of perennial streams, and edges of springs and lakes. Typical soils inhabited by the orchid are silty loam alluvial soils associated with wetlands or floodplains of perennial streams in intermountain valleys. Noxious invasive weed species pose one of the greatest threats to the orchid survival by dominating an area and out competing nearby species. There is no suitable habitat in the US 287 study area.

### 3.4.7 Environmental Justice

Presidential Executive Order 12898 (EO 12898), *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, signed by President Clinton on February 11, 1994, reinforces Title VI of the Civil Rights Act of 1964 by directing federal agencies to incorporate Environmental Justice considerations into the planning process. The purpose of Executive Order 12898 is to ensure that federal activities that affect human health or the environment are administered in a way that identifies and avoids disproportionately high and adverse effects on minority and low-income populations.



As recommended in *CDOT Title VI and Environmental Justice Guidelines for NEPA Projects* (October 2005), 2000 Census data at the block level was used to identify potential minority populations adjacent to the US 287 in the study area. Minority is defined as a person who is Black or African American, American Indian and Alaska Native, Asian American, Native Hawaiian or Other Pacific Islander, and those of Hispanic or Latino heritage, regardless of race. The Fort Collins/Loveland Metropolitan Statistical Area (MSA) contains a minority population of 13 percent. As shown in **Figure 3-10**, several blocks along the US 287 in the study area contain minority populations at or above the MSA average. Blocks with the largest minority populations are composed largely of persons of Hispanic or Latino heritage.

Each year the U.S. Department of Housing and Urban Development (HUD) publishes low-income thresholds for households in MSAs or counties across the nation. Applied to 2000 Census data at the block group level, the income threshold for the Fort Collins/Loveland MSA is \$20,000. Seventeen percent of households in the Fort Collins/Loveland MSA are at or fall below this threshold. As shown in **Figure 3-10**, five block groups adjacent to the US 287 in the study area are at or fall below the threshold.

Coordination with the Larimer County Department of Human Services, Fort Collins Housing Authority, and Loveland Housing Authority confirmed the 2000 Census data. No additional minority or low-income populations were identified by these agencies. No data was collected to determine if any of the businesses along US 287 are minority owned or if any of them have a preponderance of minority or low-income employees.

It is important to note that the 2000 Census geography is broad and blocks and block groups along US 287 can extend more than a mile east and west of the roadway. Therefore, minority or low-income populations residing in these blocks and block groups may live well outside of the area of impact. However, there are numerous households and businesses along the US 287 in the study area.



# US 287

ENVIRONMENTAL OVERVIEW STUDY

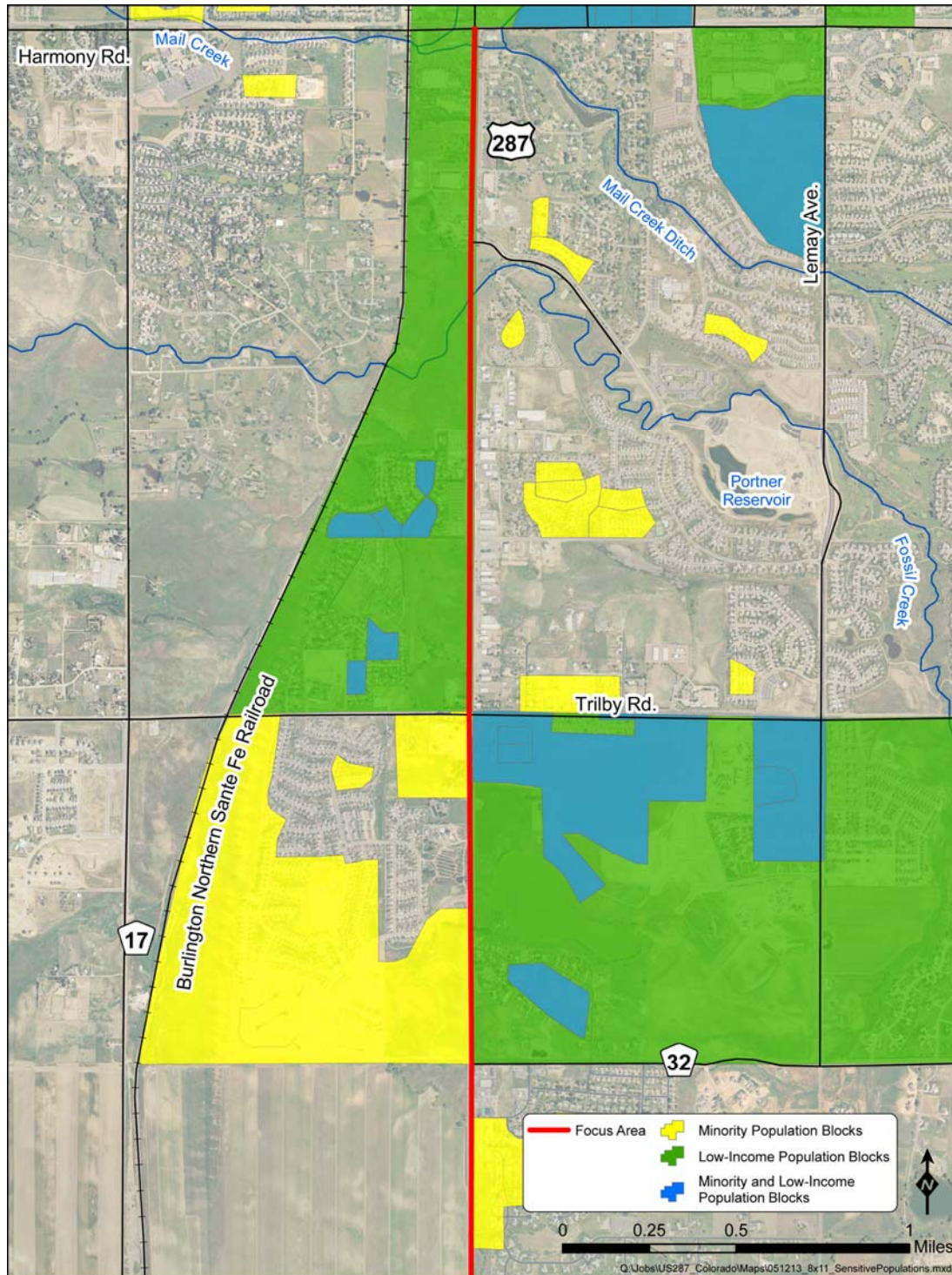
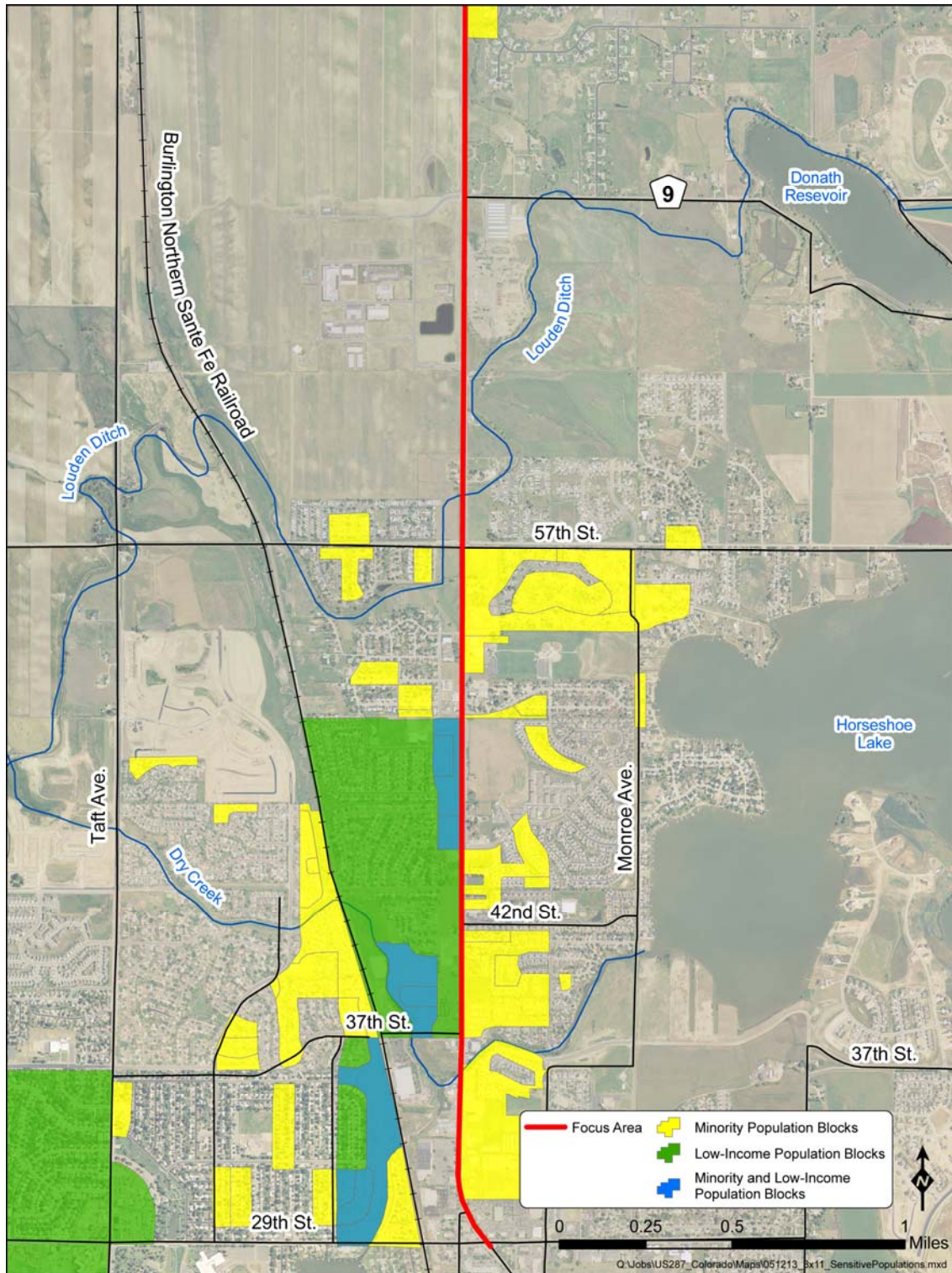


Figure 3-10: Sensitive Populations North



**Figure 3-10: Sensitive Populations South**



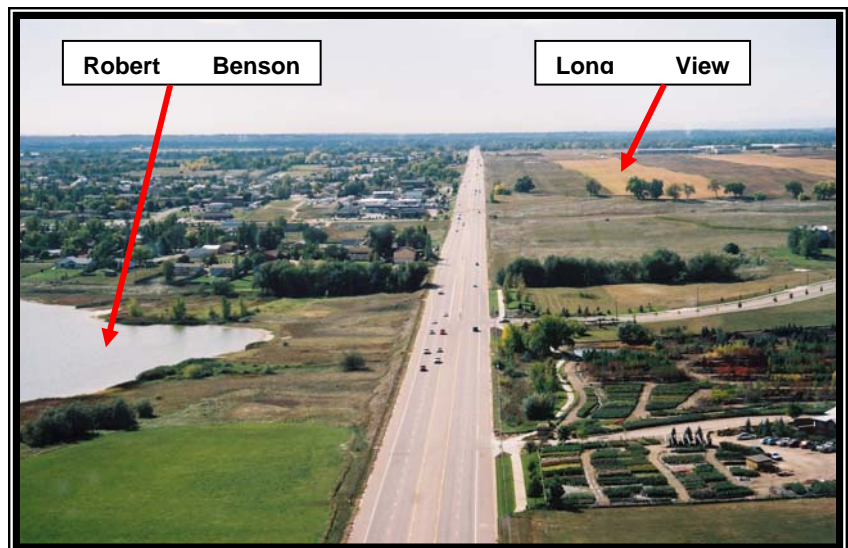
### 3.4.8 Publicly Owned Lands

The US 287 study area is part of an important corridor of more than 20 open space properties, parks, natural areas, and wildlife areas that provide a green belt separator corridor between Loveland and Fort Collins (see **Figure 3-11**). The majority of the properties are open space parks and natural areas located between Loveland and Fort Collins, with smaller neighborhood parks dispersed within the cities' limits. The study corridor also crosses Fossil Creek, approximately .75 mile south of Harmony Road, which has a collection of open space and natural areas along its drainageway.

#### Affected Properties

The current US 287 right-of-way borders on four existing open space and natural areas including Long View Farm, Manor Ridge Open Space, Robert Benson Lake, and Redtail Grove Natural Area. Other natural areas and parks in the vicinity are not likely to be affected by potential roadway improvements to US 287 since they are located at distances greater than any potential right-of-way needs. A description of the affected publicly owned properties is provided below.

**Long View Farm.** Long View Farm consists of approximately 600 acres acquired in 1997 and 1998 to preserve a one-mile open space buffer between Loveland and Fort Collins along the western side of US 287 (see photograph). The property is jointly owned by Larimer County and the Cities of Loveland and Fort Collins. The objectives of the acquisition were to protect and preserve the agricultural



View of US 287 looking south

character of the area and to provide an undeveloped visual open space between the two cities.





# US 287

ENVIRONMENTAL OVERVIEW STUDY

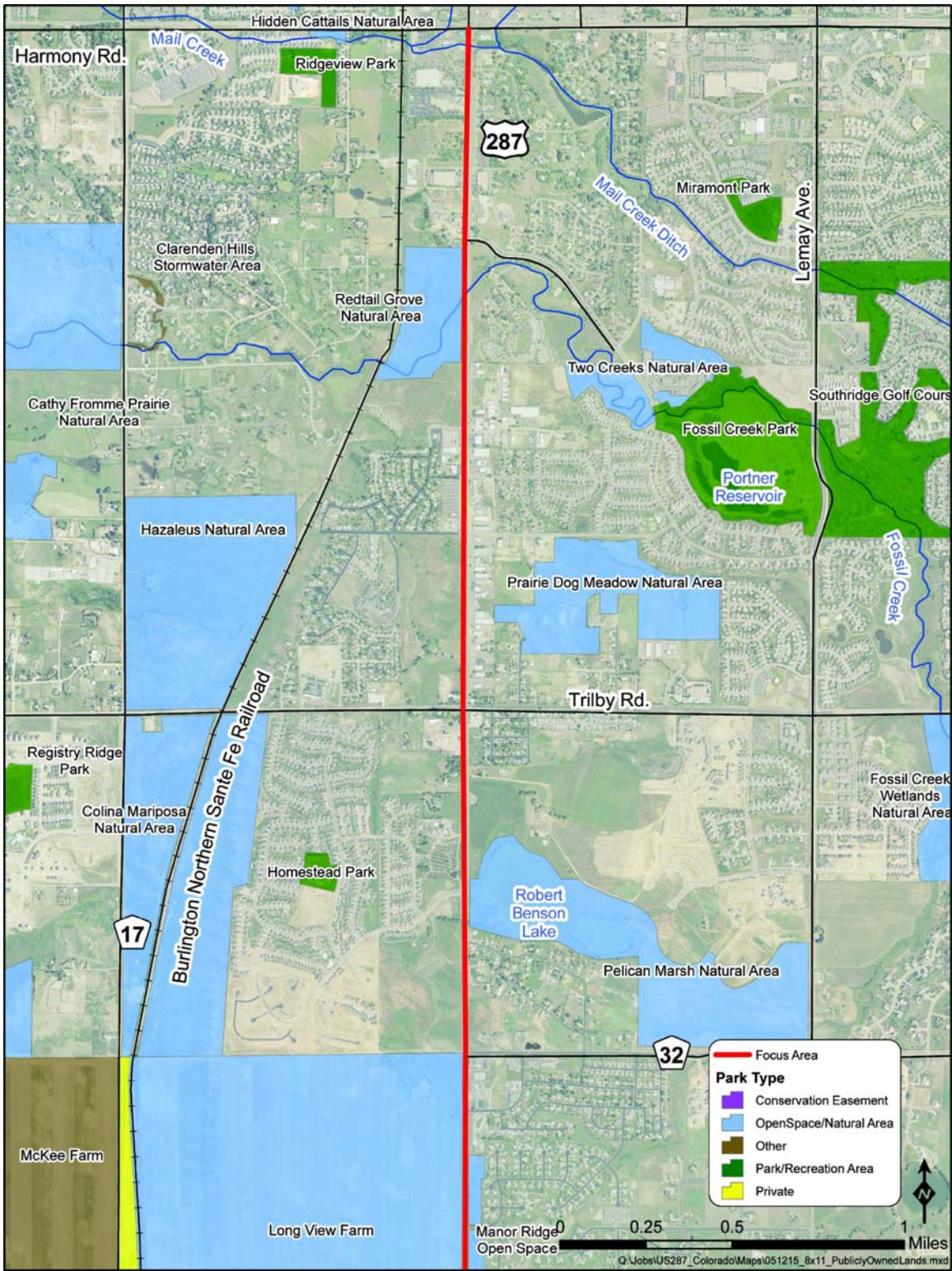


Figure 3-11: Publicly Owned Lands North



# US 287

ENVIRONMENTAL OVERVIEW STUDY

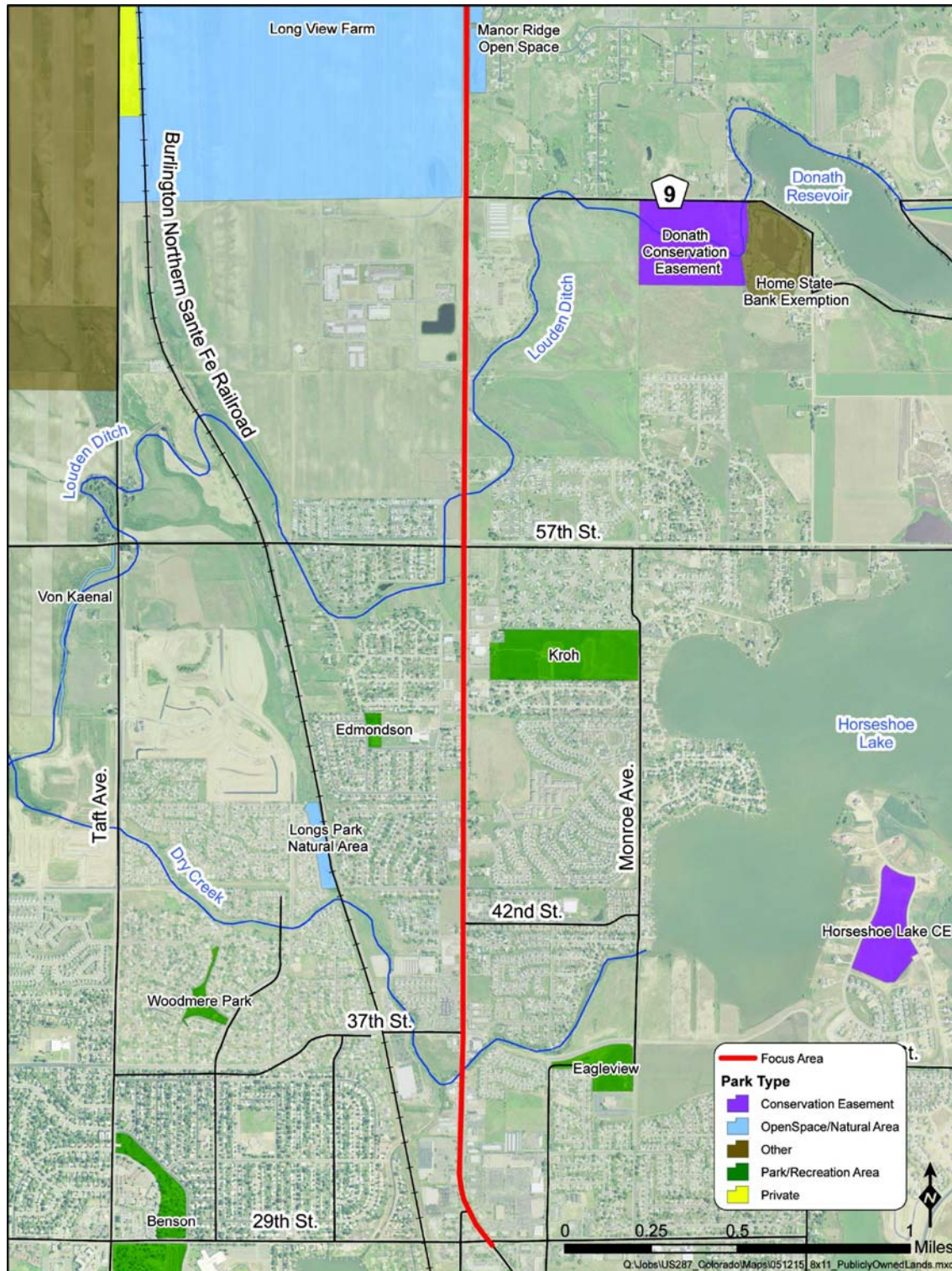


Figure 3-11: Publicly Owned Lands South



The property is managed by Larimer County and is a working agricultural operation, leased for dryland farming. The property is not open to the public and there are no public facilities. Utility and roadway easements have been historically granted on the property, following an easement process with Larimer County. The Resource Management Plan for Long View Farm identifies continued agricultural or natural area use for the property (Larimer County 2005). A trail and an educational kiosk will be located on the property at some point in the future.

**Manor Ridge Open Space.** This property is owned and managed by the City of Fort Collins and is located adjacent to the eastern US 287 right-of-way, across from Long View Farm. The property was purchased as an open space buffer between US 287 and a subdivision. The property is not open to the public and there are no public facilities. There is also no specific management plan for the property.

**Robert Benson Lake.** This property is owned and managed by Larimer County and is located adjacent to the eastern US 287 right-of-way, between Carpenter and Trilby Roads. The property contains a small lake and adjacent land, as well as the Pelican Marsh Natural Area, located approximately .5 mile from US 287 on the eastern part of the property. The property is not open to the public and there are no public facilities. There is also no specific management plan for the property.

**Redtail Grove Natural Area.** This property includes a 43-acre natural area adjacent west of the study corridor right-of-way where Fossil Creek crosses under US 287, about halfway between Trilby and Harmony Roads. Most of the property was purchased in 1996 by the City of Fort Collins. It is currently closed to public access and there are no public facilities. Fort Collins currently maintains an easement process for granting right-of-way needs for infrastructure and other purposes at the natural areas under its jurisdiction. Management objectives for the area are described in the Fossil Creek Natural Areas Management Plan and include preserving scenic values and, maintaining native plant communities and habitat for raptors and for two future paved natural trails (Fort Collins 2005). The future trails would connect to existing pedestrian and bicycle routes from the Mason Transportation Corridor and from the greater Fossil Creek trail system.



### 3.4.9 Archaeology and Paleontology

An archaeological and paleontological overview of the US 287 study area was conducted by Centennial Archaeology, Inc., during June and July 2005. The area studied included a 7.1-mile long corridor extending outward 200 feet to either side of the existing US 287 centerline. The total corridor width was 400 feet. An archaeological file search was conducted through the Colorado Historical Society, Office of Archaeology and Historic Preservation (OAHP) on line COMPASS database for all sections falling partially within this corridor. In addition, two brief reconnaissance trips were made by vehicle along the entire corridor, during which time all visible cultural resource localities were noted and briefly described, and their locations recorded with GPS waypoints.

The reconnaissance revealed two areas with apparent higher potential to produce prehistoric sites (see **Figure 3-12**). The first is the US 287 crossing of Fossil Creek approximately .75 mile south of Harmony Road. The area on the west side of the highway at this location in particular is relatively undisturbed and exhibits deep alluvial sediments that could harbor buried archaeological remains. The second area, in the southeast quarter of Section 23 (T6N, R69W), within the Long View Farm property across from Resthaven Cemetery, is a small natural playa, or internally drained basin, that has been partially truncated on the east side by the existing US 287 roadway. Playas hold water seasonally and after hard rains have been known to attract grazing animals, and therefore, potentially prehistoric hunters. They also tend to be characterized by deep sediments that can hold archaeological materials.

Fossils have been known to originate from the area since the early 1900s. Most of the better-described finds are located west of the study area on Fossil Ridge that is supported by the Rocky Ridge, Larimer, and Richards sandstone members that contain abundant fossils. Most of the US 287 study area between Loveland and Fort Collins has low paleontologic significance because fossiliferous rocks are not exposed at the surface. However, some fossiliferous outcrops are exposed in the valley of Fossil Creek which crosses US 287.

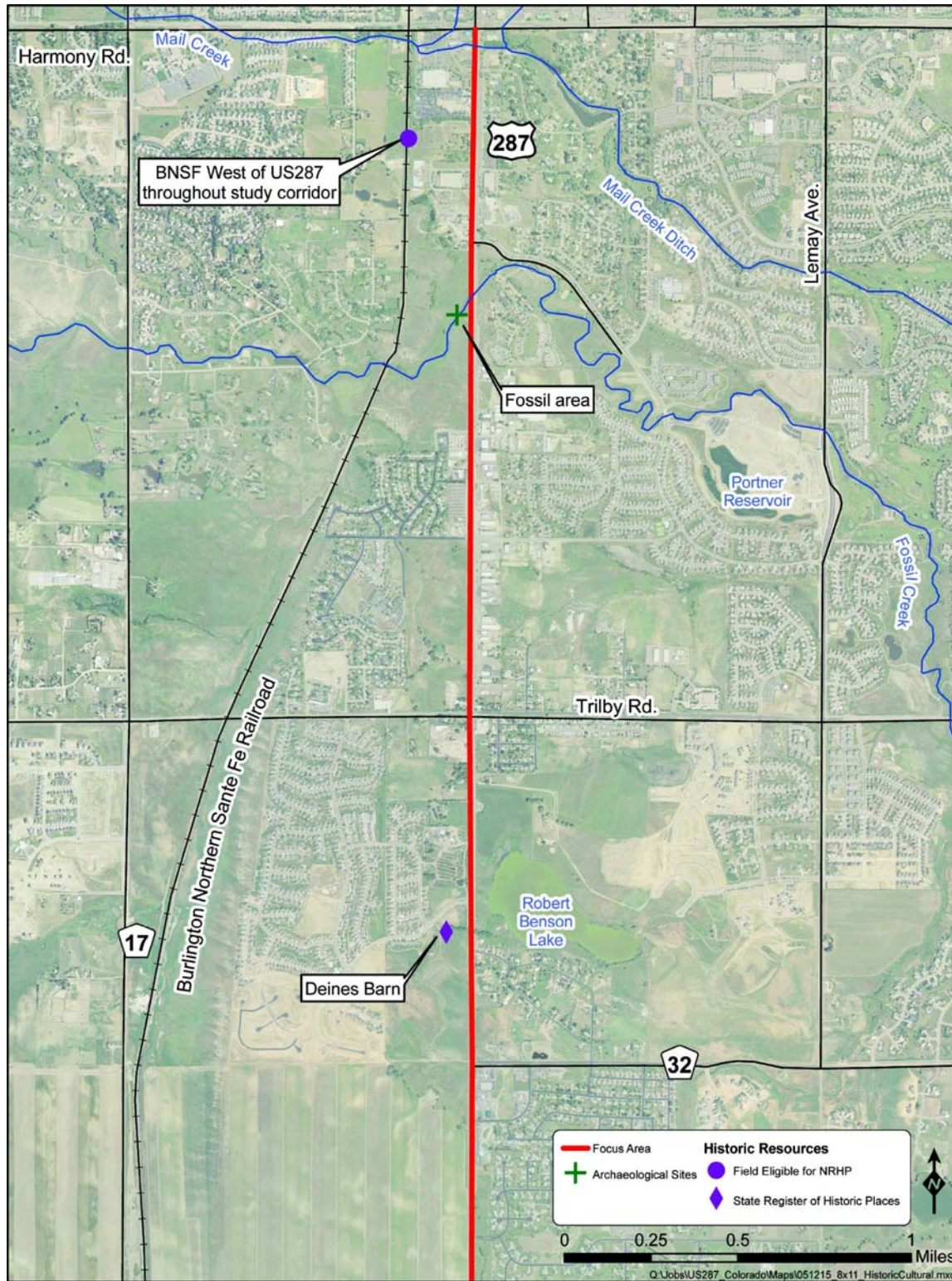


Figure 3-12: Historic and Cultural Resources North

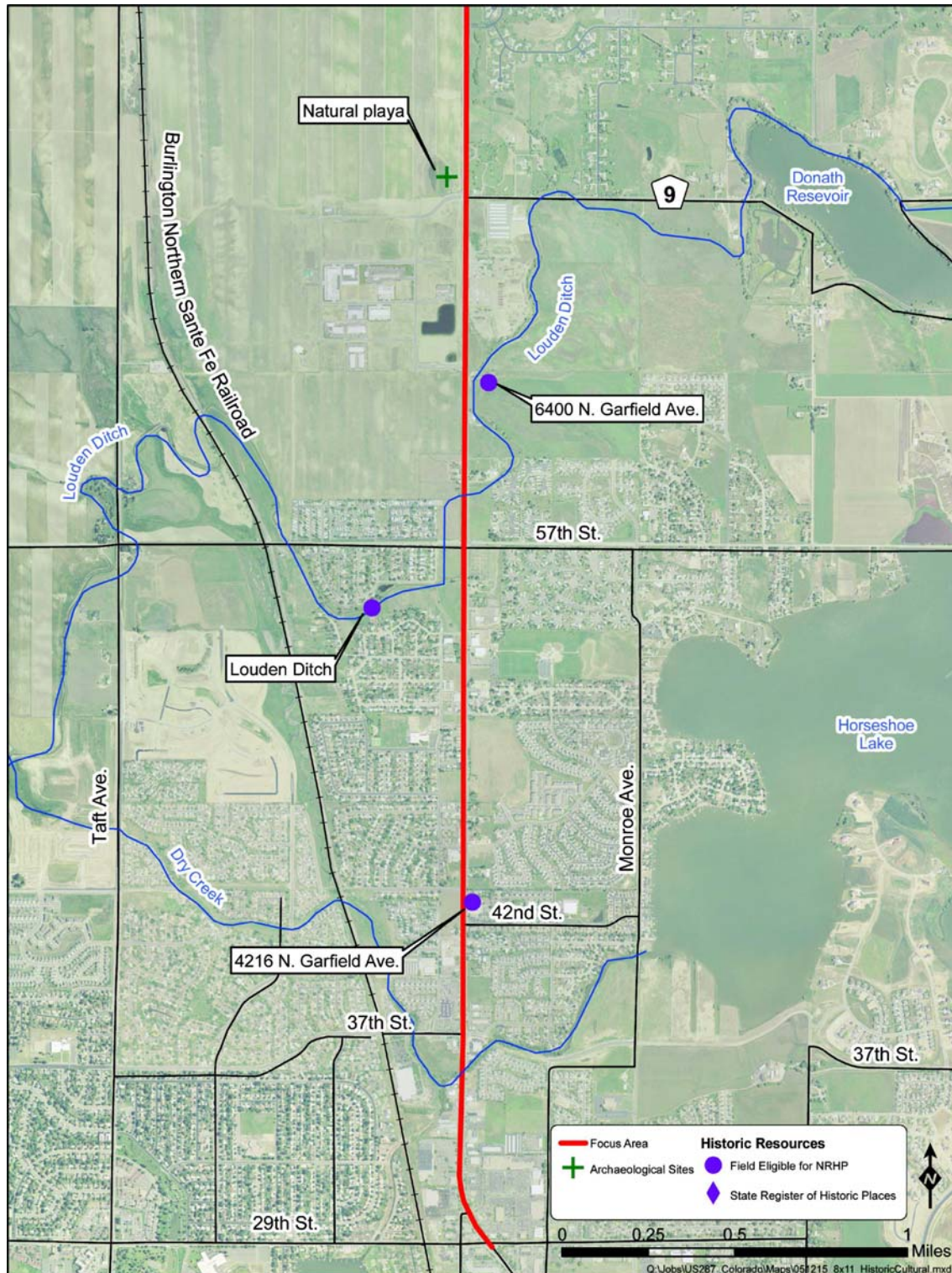


Figure 3-12: Historic and Cultural Resources South



### 3.4.10 Historic Resources

The general study corridor is a mix of land uses with a former rural character that is now becoming increasingly developed with rural residential and commercial uses.

A summary of the corridor's historical context and the assessment is provided below.

#### Historical Context

Larimer County's agricultural heritage is evident in the US 287 study area between Loveland and Fort Collins. The area, although experiencing much development in the past few decades, owes its start to agriculture. Loveland got its start as a stage stop and crossing of the Big Thompson River in the 1860s. It was founded as a town in 1877. Lt. Col. William Oliver Collins established Fort Collins as a fort along the banks of the Cache la Poudre River in August 1862. The original fort was washed away by the raging Cache la Poudre River in 1864, and the fort was rebuilt a few miles downstream on the south side of the river. This fort grew into the city of Fort Collins.

Agriculture started in the area in the 1860s when native hay was cut along the banks of the Cache la Poudre River and the Big and Little Thompson Rivers. The hay was sent to mining camps to feed the draft animals in the mining industry. In the mid-1860s, wheat and barley seed were first planted. The crops did well in the county and soon there was enough demand for construction of a flour mill, which was powered by water from the Big Thompson River. Larimer County farmers also grew potatoes very successfully.

Agriculture in this region also included the raising of sheep. In 1880, there were 75,000 sheep in Larimer County. This eventually grew to over 400,000 sheep. However, by 1910, sheep production had drastically declined with only 5,000 sheep being raised in the county. Other agricultural products grown in the county included hops, which were sold to breweries in Denver and sweet peas which were canned at the Empson Cannery and later the Kuner-Empson Company.



The most prominent of all of the agricultural crops was sugar beets. Great Western Sugar built the first sugar beet plant in 1901 and the following year built the Great Western Railway to ship the sugar beets to market. From the time the plant opened, sugar beets became the region's largest cash crop. At the plant's beginning, 6,000 acres around Loveland were planted in sugar beets. After processing, the leftover beet tops and pulp were used as livestock feed. The sugar beet industry lasted for over eight decades in Larimer County, from the early 1900s to the mid 1980s.

### Historic Assessment

A file search of the records of the Colorado Historical Society was undertaken, and the list of historic landmarks for Loveland and Fort Collins was reviewed. Additionally, during June 2005 a field assessment was undertaken to identify any potential historic resources in the study corridor. This assessment identified 11 properties that were more than 50 years of age that did not have significant alterations, and therefore might possibly be of historic importance. During August 2005, additional research was conducted and one additional property (3416 N. Garfield Ave.) was added to this list. The additional research conducted on these properties provided a field assessment of whether or not they are eligible for inclusion on the National Register of Historic Places (NRHP). **Table 3-4** presents a summary of that research and the field assessments of eligibility. Historic and potentially eligible historic properties are depicted on **Figure 3-12**.

**Table 3-4:  
Historic or Potentially Historic Properties**

Address	Year Built	Description / Name	Potentially Eligible for the NRHP
3416 N. Garfield Ave.	1951	Avalanche Motors	Not Eligible
3511 N. Garfield Ave.	1919	Converted House	Not Eligible
4008 N. Garfield Ave.	1932	House – brick farm utility building	Not Eligible
4016 N. Garfield Ave.	1925	House - wood siding	Not Eligible





**Table 3-4:  
Historic or Potentially Historic Properties (continued)**

Address	Year Built	Description / Name	Potentially Eligible for the NRHP
4216 N. Garfield Ave.	1924	Western Welding, brick house with eyebrow dormers	Potentially Eligible
4512 N. Garfield Ave.	1916	Old farmhouse	Not Eligible
6017 N. Garfield Ave.	1932	Flagstone-faced ranch building, farmhouse and two out buildings	Not Eligible
6400 N. Garfield Ave.		Old plank and beam bridge over ditch	Not Eligible
6400 N. Garfield Ave.	1922	Old farmhouse	Potentially Eligible
North and South of 6400 N. Garfield Ave.		Louden Ditch	Potentially Eligible
7225 and 7309 S. College Ave.	1918	Deines Barn and silos	On State Register of Historic Places
SE corner of Harmony Road and College Ave.		New Mercer Ditch / Mail Creek / Mail Creek Ditch	Eligibility Unknown - Not a contributing segment
West of US287 throughout the study corridor	1877	Burlington Northern Santa Fe Railroad (formerly the Colorado Central Railroad)	Potentially Eligible

**3416 N. Garfield Avenue.** This building houses Avalanche Motors. It is a quonset hut with a stucco false front with a stepped parapet. It was built in 1951 and remodeled in 1985. It has modern windows and door openings and, as such, would most likely be assessed as not eligible for inclusion on the NRHP.

**3511 N. Garfield Avenue.** This house was built in 1919. Its site was approximately 10 acres in 1940 and was about 5 acres in the 1950s and 1960s. This property was converted to business use by the 1970s. It would likely be assessed as not eligible for the NRHP.



**4008 N. Garfield Avenue.** Built in 1932, this Dutch Colonial style house has flared eaves and a shed dormer. It appears there have been some window modifications. This property would likely be assessed as not eligible for the NRHP.

**4016 N. Garfield Avenue.** This house was built in 1925. Historic maps from 1915 show this was a 120-acre site. That site was down to 10 acres by 1940 and then up to 40 acres by 1956. The building has been modified by the addition of aluminum windows and as such would most likely not be eligible for inclusion on the NRHP.

**4216 N. Garfield Avenue.** This property includes a house and some out buildings used for the Western Welding business on the site. The house was built in 1924. Historic maps show this was once part of a 120-acre site. That site was down to 30 acres by 1940. This building has slanted side piers supporting the porch and unique eyebrow dormers. It is likely that this property would be assessed as eligible for the NRHP under Criterion C, architecture.

**4512 N. Garfield Avenue.** This two-story farmhouse was built in 1916 on an 80-acre parcel of land. Much of the land associated with this farmstead was sold off by 1956 when the land associated with this farmstead was down to 10 acres. This property has been altered over time. The front porch has been enclosed and there has been a small room added to the south side at the rear of the building. This building would most likely be assessed as not eligible for the NRHP.

**6017 N. Garfield Avenue.** This property includes an old farmhouse and several other buildings, one with a flagstone front. The Larimer County Assessor's Office lists one building as a veterinary hospital that was built in 1973. There have been some alterations to the buildings so it is likely that this property would not be eligible for the NRHP.

**6400 N. Garfield Avenue.** This farmhouse was built in 1922 on an 80-acre plot of land. It has an intact farmhouse and would most likely be eligible for the NRHP. There is an old plank and beam bridge over the Loudon Ditch leading into the farmhouse. This bridge is not listed on the state historic bridge survey. It is a simple timber bridge and would most likely not be eligible for the NRHP.



**Louden Ditch.** A segment of this ditch further east near I-25 has been previously surveyed and determined officially eligible for inclusion on the NRHP. This segment of ditch appears to have maintained its integrity and it is likely that this segment would be eligible for the NRHP. However, this segment is in an area undergoing urbanization and is losing its historical context. The ditch also appears to have been relocated and darts lined with concrete during the original construction of US 287. It is likely that this segment would not be a contributing segment if the ditch would be determined eligible for the NHRP.

**Deines Barn and Silos.** The Deines barn was built in 1918 and is significant as an excellent example of a post-and-beam, wood-sided gambrel-roof barn (photo at right). This barn is reported to be one of the largest in the region and in 2002 was one of only eight surviving barns of gambrel-roof design. The adjacent twin silos are also significant as there are fewer than 15 silos remaining in the Fort Collins area from the many dozens of silos that were originally built. The Deines barn and silos were listed on the State Register of Historic Places on March 13, 2002.



**New Mercer Ditch / Mail Creek Ditch.** This ditch comes off of Mail Creek which joins with the New Mercer Ditch about .25 mile west of US 287 and then flows in a culvert under a shopping center and US 287. Maps show the waterway to be Mail Creek east of US 287 and then the Mail Creek Ditch comes off the creek even further east. Further research will be needed to determine eligibility for this ditch/waterway. Since the ditch/waterway is in a culvert under US 287, it is likely that this segment would not be a contributing segment if the ditch would be determined eligible for the NRHP.

**Burlington Northern Santa Fe (BNSF) Railroad.** The BNSF Railroad in the study area was originally the Colorado Central Railroad, and later the Colorado & Southern Railroad. The Colorado Central Railroad was built in this area in 1877 and connected Golden to the Union



Pacific railroad just west of Cheyenne, Wyoming. The railroad is significant for its role in the history and development of this region of Colorado and therefore may be eligible for the NRHP.

### **3.4.11 Hazardous Materials**

A modified Phase I Environmental Site Assessment (ESA) was conducted for lands within one mile of the study area in May 2005. The assessment was performed in general conformance with the scope and limitations of the American Society for Testing and Materials (ASTM) Standard Practice E 1527. An inspection of the interiors of buildings was not conducted as part of this assessment. A copy of the full report is available under separate cover.

Based on review of aerial photographs, historical topographic maps, and observations made during an inspection visit, the properties within the study corridor are presently and have historically been used for agriculture, residential, and commercial purposes. An area reconnaissance conducted during the Phase I ESA revealed no obvious indications of the presence of potentially hazardous or regulated materials, other than the presence of pole-mounted electrical transformers.

A review of environmental regulatory records identified two nearby properties that have faced or are currently facing regulatory actions, fines, or violations for issues that may have impacted environmental conditions within the US 287 study area. After additional file review and field observations, it was concluded that the environmental conditions at the identified facilities present a low risk of contamination.



## 4.0 TRANSPORTATION ALTERNATIVES DEVELOPMENT AND SCREENING

---

This section provides a description of the screening process, transportation considerations, range of alternatives considered, physical considerations, and environmental considerations.

### 4.1 Screening Process

---

**Figure 4-1** illustrates the alternatives development and screening process used for the US 287 EOS. This was initiated with a scoping process that included a public meeting, public outreach, and agency coordination. The process to develop and screen alternatives consisted of the following general steps:

1. Project evaluation criteria and measures of effectiveness (MOEs) were developed based on the Purpose and Need for the project and project goals.
2. A range of possible options was identified. After identifying the range of reasonable options, the range was prescreened to eliminate alternatives with fatal flaws (including exorbitant cost, non-responsiveness to Purpose and Need, and unacceptable environmental or community impacts).
3. More detailed development of the remaining preliminary alternatives was completed to identify those alternatives that were practical or feasible from technical and economic standpoints.
4. The remaining reasonable alternatives were technically defined and analyzed further for environmental, social, and economic impacts.

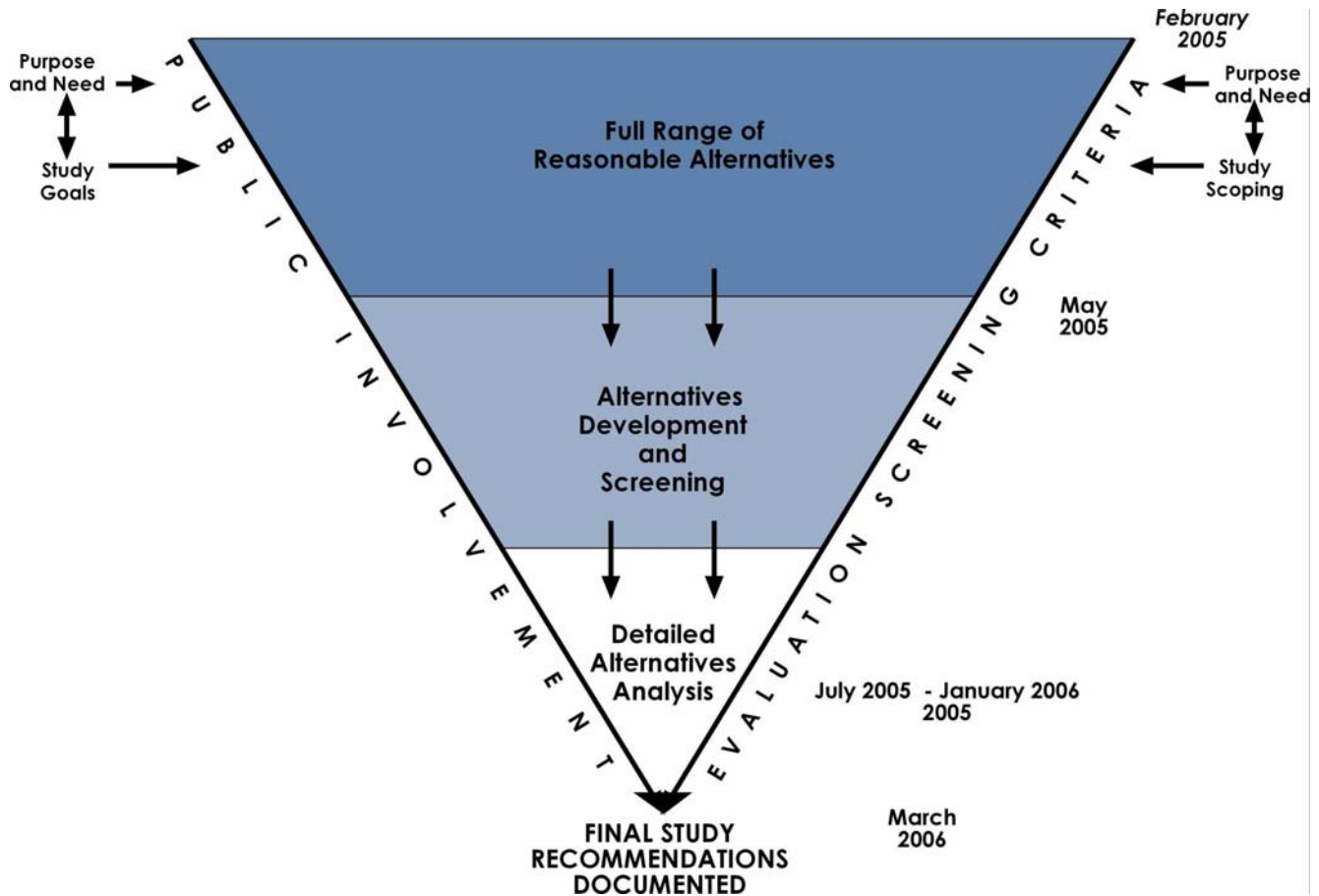


Figure 4-1: Alternative Development and Screening Process

## 4.2 Project Goals

Project goals were developed based on the known transportation needs, opportunities, and constraints in the corridor and are described in Section 2.3. These goals were used to guide the alternatives development and screening process beginning with project evaluation criteria and measures of effectiveness (MOEs).

## 4.3 Project Evaluation Criteria and Measures of Effectiveness (MOEs)

In order to objectively and fairly compare potential alternatives, six evaluation criteria were prepared that reflect the Purpose and Need and the project goals. For each criterion, a series of performance measures, or measures of effectiveness (MOEs), were written to provide the



basis for comparative evaluation of alternatives. The six criteria are defined in the statements below:

- **Mobility** addresses how well each potential alternative accommodates the efficient movement of people, goods, and services throughout the study area.
- **Traffic Safety** addresses how each potential alternative affects the safe movement of people, goods, and services through the study area.
- **Access** addresses the impacts of each potential alternative on access to people, goods, and services.
- **Environment** addresses the degree to which potential alternatives impact the natural, cultural, and human environment.
- **Community** addresses the degree to which potential alternatives are acceptable to community members and how well the alternatives comply with local plans and policies.
- **Implementation** addresses the degree to which an alternative is cost-effective and practical to construct.

General MOEs for each criterion are shown in **Table 4-1**. Available information appropriate to the level of alternatives description was used based on the MOEs as the alternatives were developed, screened, and refined. Information was only developed if it was pertinent to the decision being made or was information available at the level of alternatives screening being considered.

**Table 4-1:  
Evaluation Criteria and Measures of Effectiveness**

Evaluation Criteria	Measures of Effectiveness (MOE)
Mobility	<ul style="list-style-type: none"> <li>• Peak-hour intersection operations (measured by LOS).</li> <li>• Ability of the alternative to improve the pedestrian and bicycle network.</li> <li>• Ability of the alternative to improve overall travel time between termini.</li> <li>• Ability of the alternative to meet desirable design standards for speed and capacity.</li> <li>• Ability of the alternative to improve transit operations.</li> </ul>



**Table 4-1  
Evaluation Criteria and Measures of Effectiveness (continued)**

Evaluation Criteria	Measures of Effectiveness (MOE)
Traffic Safety	<ul style="list-style-type: none"> <li>• Ability of the alternative to improve, reduce, or eliminate high accident locations.</li> <li>• Ability of the alternative to safely accommodate pedestrians and bicycles.</li> <li>• Ability of the alternative to improve emergency response times.</li> <li>• Ability of the alternative to meet desirable design standards for traffic safety.</li> </ul>
Access	<ul style="list-style-type: none"> <li>• Ability of the alternative to provide access to residential properties.</li> <li>• Ability of the alternative to provide access to business properties.</li> </ul>
Environment	<ul style="list-style-type: none"> <li>• The degree to which the alternative enhances or adversely impacts:               <ul style="list-style-type: none"> <li>a. Wetlands.</li> <li>b. Floodplains.</li> <li>c. Water quality.</li> <li>d. Wildlife.</li> <li>e. Threatened or endangered species.</li> <li>f. Low income or minority populations.</li> <li>g. Local businesses.</li> <li>h. Air quality.</li> <li>i. Transportation-related noise.</li> <li>j. Historical properties.</li> <li>k. Park lands.</li> <li>l. Bicycle and pedestrian facilities.</li> <li>m. Open space lands and other recreational resources.</li> <li>n. Hazardous waste sites.</li> </ul> </li> </ul>
Community	<ul style="list-style-type: none"> <li>• The degree to which the alternative is compatible with local plans and policies.</li> <li>• Level of public support or opposition to the alternative.</li> <li>• Does the alternative enhance economic/business development?</li> </ul>
Implementation	<ul style="list-style-type: none"> <li>• The degree to which the alternative is constructible.</li> <li>• Availability of realistic funding sources.</li> <li>• The degree to which the alternative provides flexibility for phased construction and modification.</li> <li>• What is the capital cost associated with the alternative?</li> </ul>





## 4.4 Transportation Considerations

---

Traffic forecasting for the US 287 EOS was done using the NFRMPO 2030 travel demand model. The base NFRMPO model had a mixture of laneage assumptions in the US 287 study area, including widening some segments to six lanes near each end while leaving the middle section with four lanes.

For the US 287 EOS, four alternative roadway networks were evaluated using the travel demand model to define the different laneage possibilities in the corridor and in surrounding corridors. These model alternatives differ from the actual project alternatives, since one model alternative can apply to several different project alternatives. The model alternatives are described in the following sections.

### 4.4.1 2030 North Front Range MPO Base Case

The 2030 NFRMPO base case model is the official model used for planning in the Fort Collins and Loveland areas, and has been developed with input from each jurisdiction. This model assumes six lanes on US 287 from 29<sup>th</sup> Street to 57<sup>th</sup> Street in Loveland, the existing four lanes between 57<sup>th</sup> and Fossil Creek Drive, and six lanes north of Fossil Creek. No improvements are considered on north-south parallel roads in the vicinity such as Taft Hill Road/ Wilson, Shields Street/Taft, Timberline Road, and Lemay Road. I-25 in this area is assumed to be widened to six lanes. Also, it should be noted that the City of Loveland has its own model for its Master Plan.

### 4.4.2 2030 No-Action Alternative

The No-Action Alternative provides a base case from which to compare the Build Alternatives. The No-Action Alternative requires a network model that includes committed transportation projects outside of the study area. The NFRMPO base case model was adjusted to have the existing lane configuration within the study area. This resulted in changing the laneage on US 287 back to four lanes from 29th Street north to Harmony Road. No other changes to the NFRMPO base case model were made.



#### 4.4.3 2030 Parallel Roads

In this roadway network model alternative, US 287 is adjusted to four lanes as described above for the No Action Alternative, and parallel roadways are adjusted to provide additional capacity. This model was done to test whether additional capacity on the parallel routes east and west of US 287 would be effective in reducing the demand on US 287, and if so, would this reduction in demand allow the existing four lanes on US 287 to remain. The parallel roads assumed to have capacity improvements include: Taft Hill Road/Wilson, Shields Street/Taft Avenue, Timberline Road/Boyd Lake Avenue (assumes a connection is made), and Lemay Avenue south to Carpenter. These parallel roads typically have two lane cross sections with short segments of four lanes. The Timberline Road / Boyd Lake Avenue connection has not yet been constructed. Capacity improvements for this model are assumed at four lanes for all parallel roads. In addition, I-25 is considered to be a six lane facility as in the base case model.

#### 4.4.4 2030 Widen US 287 to Six Lanes

This roadway network model alternative adjusted the No-Action Alternative model and base case models by adding capacity to US 287 through the entire study area so that US 287 is consistently six lanes. No improvements on the parallel roads are assumed in this model alternative.

#### 4.4.5 Model Results

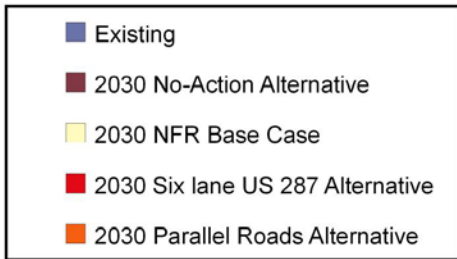
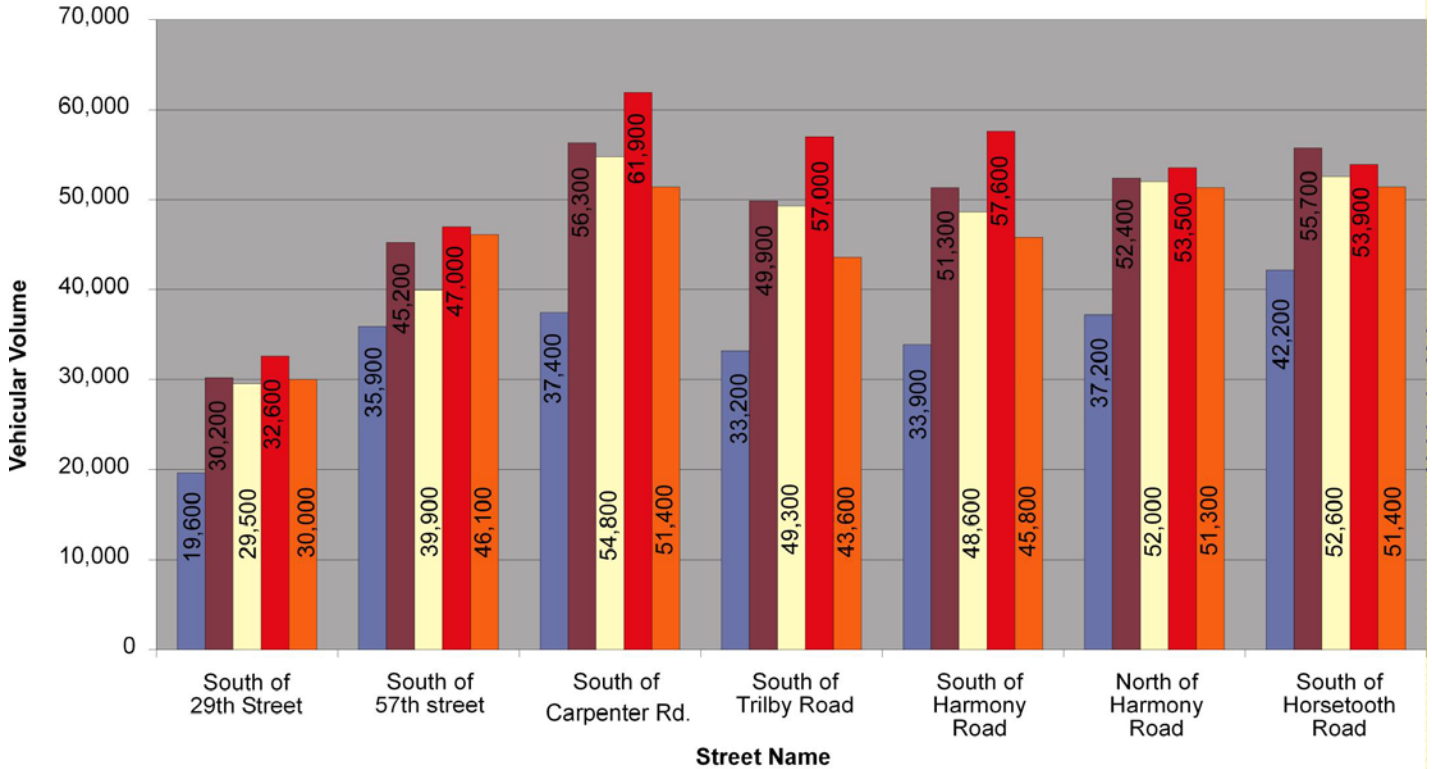
The results of the model runs are summarized in **Figure 4-2**. The 2030 daily traffic comparison indicates that US 287 will carry traffic volumes of 50,000 to 57,000 vehicles per day (vpd) for all the 2030 model alternatives. Past experience and existing arterial volumes in other locations have yielded general planning guidelines showing that six lanes are typically required at daily volumes of over 40,000 vpd. See **Figure 4-3** for a general assessment of daily traffic volumes versus appropriate laneage.

The traffic model results are a reflection of traffic demand from two sources:

- Existing plus future regional traffic demand for travelers between Fort Collins and Loveland, the medium length trips that will not use I-25.



## US 287- ALL DAY VOLUMES COMPARISON



**2030 No Action Alternative:**  
- 4 lanes on US-287

**2030 NFR Base Case:**  
- 6 lanes on US-287 from 29th to 57th St.  
- Tafts Hill Rd., Shields St., Timberline Rd., Lemay Rd. as existing  
- I-25 as 6 lane

**2030 Six-Lane 287 Alternative:**  
- Six lanes on US 287  
- Taft Hill Rd., Shields St., Timberline Rd., Lemay Rd. as existing  
- I-25 as Six lane

**2030 Parallel Roads Alternative:**  
- US 287 as existing  
- Tafts Hill Rd., Shields St., Timberline Rd., Lemay Rd. as four lanes  
- I-25 as six lanes

All model alternatives result in increased traffic on US 287 by the year 2030.

Figure 4-2: Summary of Model Alternatives



### Capacity of 2 and 4 lane roads

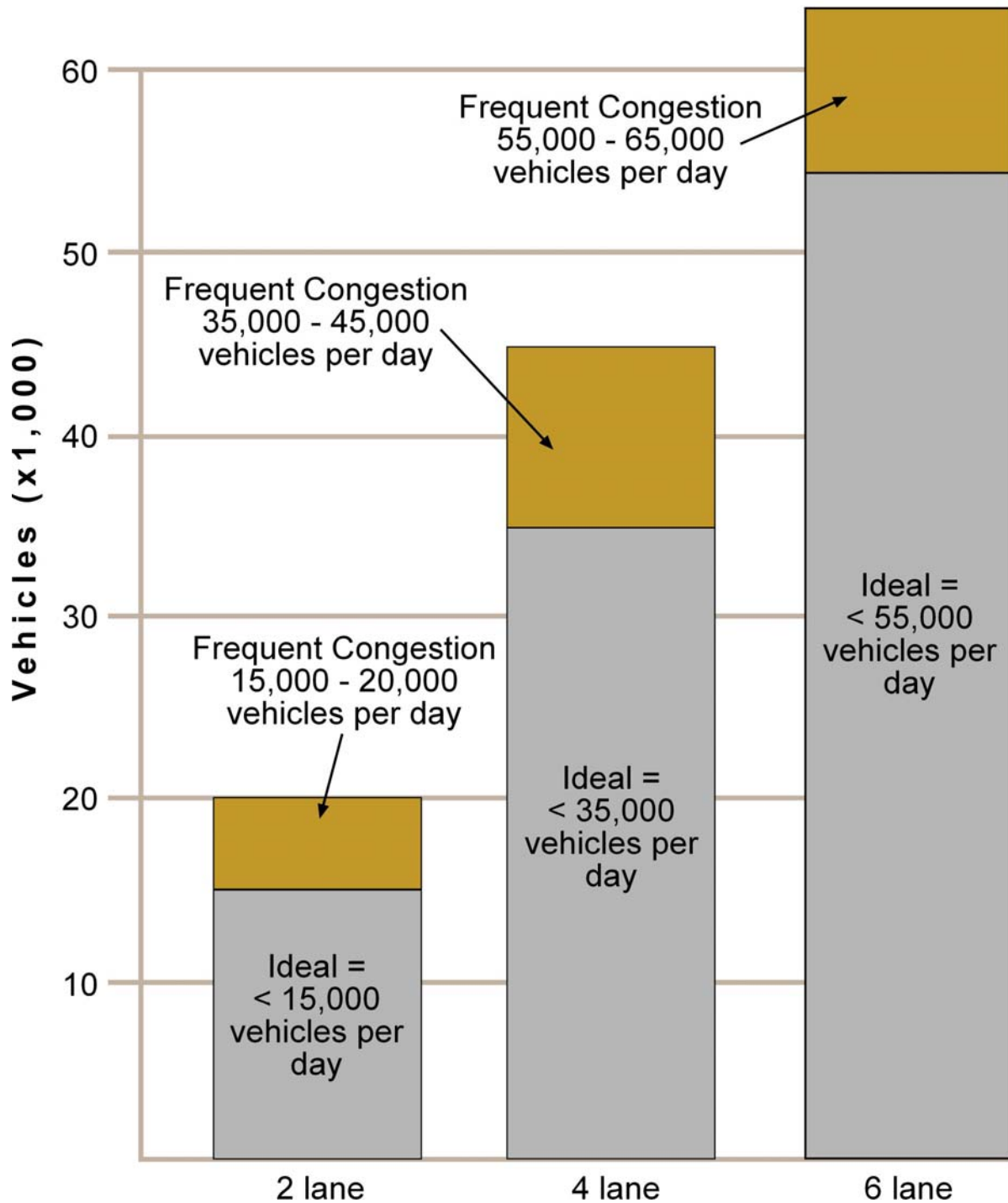


Figure 4-3: General Capacity Needs



- Existing plus future growth of residences and jobs/retail immediately adjacent to the US 287 corridor, those trips that will use at least a portion of US 287 on a trip.

The NFRMPO model considers available roadway capacity, travel times on comparable routes, and future roadway congestion due to the travel demands. Even with all of these considerations, all of the model alternatives show the travel demand exceeding the general capacity of a four-lane road, even those model alternatives that restricted the capacity of US 287.

Also of interest is the evaluation of the 2030 Parallel Roads roadway network model alternative, where additional capacity is made available on parallel routes. Most of the travel demand remains on the US 287 corridor, which is constrained at four lanes. These results show the importance of US 287 as both a regional and local traffic route. They confirm the need to provide additional capacity on US 287, and that capacity improvements on multiple adjacent corridors cannot replace the need to add capacity to US 287.

The NFRMPO model results provide traffic forecast demands for both daily and peak hour traffic. The primary determinant of capacity in an arterial corridor is not the laneage on each segment, but the capacity of the signalized intersections. The capacity of an intersection is best analyzed using peak-hour traffic data, not daily traffic data.

An overview level capacity analysis at key intersections in the corridor was conducted to test the 2030 peak-hour volumes against a variety of intersection turn laneage configurations that added multiple turn or cross street lanes at the intersection, yet maintained the four through lanes on US 287. These tests showed that there was no reasonable combination of improvements at key intersections in the corridor that would allow US 287 to remain four through lanes. The conclusion was that the overwhelming demand of through traffic in the corridor in 2030 will require six consistent through lanes.



## 4.5 Range of Alternatives

---

The range of alternatives considered included both roadway alternatives and multimodal alternatives, such as bus transit, rail transit, and bicycle/pedestrian enhancements. **Figure 4-1** in Section 4.1 illustrated a general approach to how the range of alternatives was initially developed, and how the screening of those alternatives would ultimately result in one recommended alternative.

Developing the range of alternatives began with the input of the stakeholders as well as with input from the public. The alternatives included the primary roadway alternatives that have been evaluated or considered in other studies:

- Widen US 287 to six lanes from Harmony to 29th Street.
- Maintain the existing four lanes from Harmony Road to 29<sup>th</sup> Street with only spot improvements in the corridor and widen adjacent parallel arterials.
- No Action Alternative (would be included as part of NEPA process).

As described in the previous section, providing at least six lanes of capacity in the corridor is the only alternative that meets the 2030 traffic forecast demands.

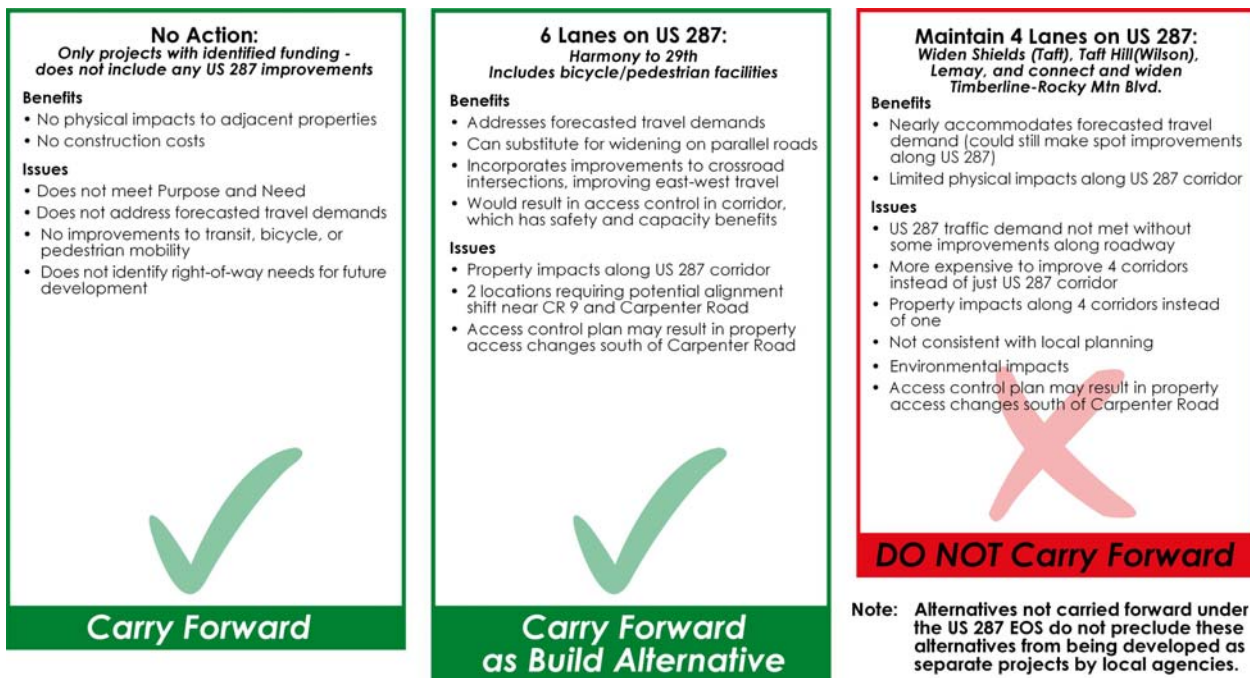
In addition to the above alternatives, other alternatives were evaluated that included either potential stand-alone alternatives, or alternatives that could be combined with other alternatives to enhance them. These include:

- Restripe the existing pavement to allow six lanes at reduced width.
- Make only selected intersection improvements without improvements to parallel roadways.
- Widen US 287 to eight lanes from Harmony Road to 29<sup>th</sup> Street.
- Add commuter rail in the corridor on the Railroad BN line.
- Add bus-priority elements to accommodate a Bus Rapid Transit (BRT) corridor.
- Add bicycle/pedestrian facilities.



- Provide intelligent transportation system (ITS) enhancements such as improved signal timing.

The above lists of alternatives were evaluated at a comparative level to determine alternatives that could meet the Purpose and Need of the study. Results of the comparative screening summary are shown in **Figures 4-4** and **4-5**. These figures show the key benefits or issues established for each alternative. The screening process used the criteria established for the study as discussed in Section 4-3. These criteria were based on the Purpose and Need and project goals. Any criterion that did not result in key differences between alternatives was determined not relevant to the screening process and is not listed in the figures.



**Figure 4-4: Alternatives and Screening**  
(Sheet 1 of 2)



Figure 4-5: Alternatives and Screening (Sheet 2 of 2)

One of the key findings of the evaluation was that at least six travel lanes along US 287 would be required to meet the mobility need. This finding was the primary reason for screening out the following alternatives:

- Maintain four lanes on US 287 and widen parallel arterials.
- Add commuter rail on the BNRR corridor (doesn't reduce enough demand on US 287, even with widening on parallel arterials).
- Make selected intersection improvements on US 287.

Two other alternatives were screened out for a combination of reasons:

- The alternative to restripe existing US 287 to six lanes was screened out as it does not address the mobility need as well as full six-lane widening and several of the project goal criteria could not be adequately met.
- The alternative to improve US 287 to eight lanes was screened out primarily due to the much greater impacts of a wider footprint for almost no gain in mobility.



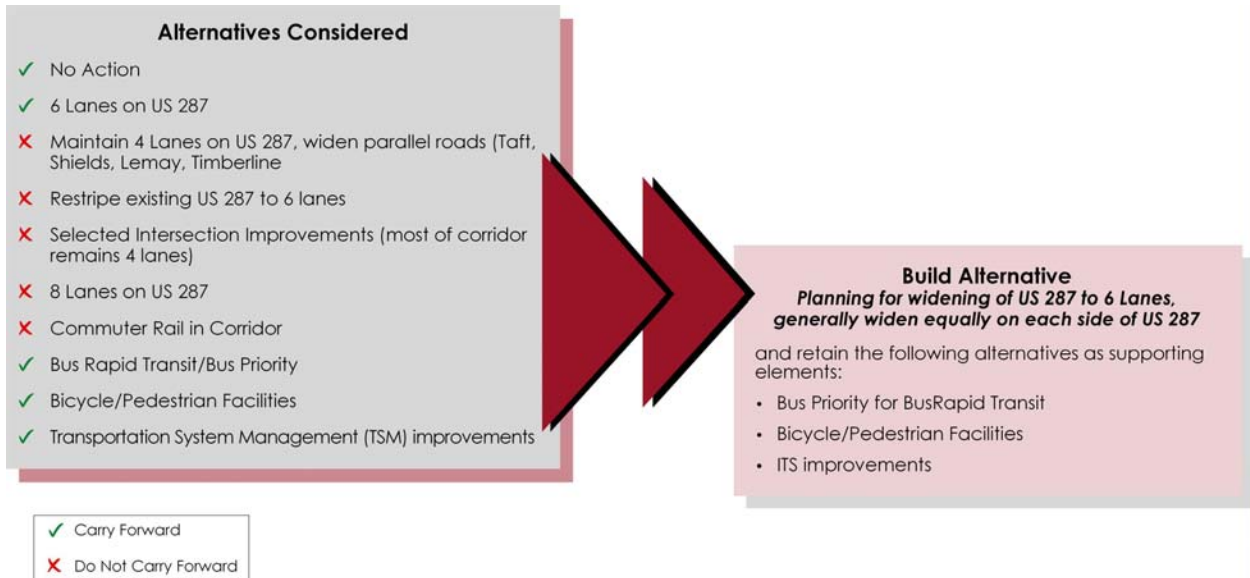


Following the comparative alternatives evaluation and screening, the remaining alternatives were analyzed to determine those that were stand-alone and those that were supporting elements.

Only one stand-alone build alternative remained from the screening – six lanes on US 287 from 29th Street to Harmony Road. Three other alternatives were found to be supporting elements and were combined with the six-lane alternative to create one build alternative package. The supporting elements included bicycle and pedestrian facilities, bus priority treatment for future BRT or other bus service on US 287, and signal improvements such as a coordinated signal system as part of an intelligent transportation system (ITS).

In addition, the No-Action Alternative was carried forward only as a base case to compare the remaining build alternative against. The No-Action Alternative was found to not meet the Purpose and Need.

**Figure 4-6** illustrates the results of the alternatives screening process, including the packaging of stand-alone alternatives and supporting alternatives. As identified, the resulting recommended build alternative is to plan for a six-lane cross section of US 287 in the corridor, which would also consider and retain the ability to incorporate BRT or other bus, bicycle/pedestrian facilities, and ITS opportunities such as signal improvements. A more detailed definition of the build alternative was developed after considering additional physical, environmental and access considerations; additional public and agency input; and additional analysis. The more detailed definition is discussed in Chapter 6 of this EOS.



**Figure 4-6: Alternative Summary**

## 4.6 Forecasted Traffic Operations

The recommended six lane cross section was tested for LOS at the key intersections, and compared with traffic operations for the No-Action Alternative. 2030 peak hour traffic volumes were developed for both the No Action Alternative and the recommended alternative based on the traffic model results described in Section 4.4. The laneage evaluated for this LOS analysis was based on the existing laneage for no-action, while the recommended widening to six lanes also included the addition of separate right-turn lanes at the signalized intersections, and double left-turn lanes at key intersections already planned for them (such as 65<sup>th</sup> Street and Carpenter Road). The resulting 2030 LOS for the No Action Alternative and the build alternative is shown in **Figure 4-7**.

## 4.7 Environmental Considerations

Environmental resource information was collected during the initial phase of this study to assess the significance of issues to be considered in the development and evaluation of context sensitive transportation alternatives. An overview of this information is presented in Section 3.4. The following general observation can be made in regard to alternatives development and screening when reviewing this information:

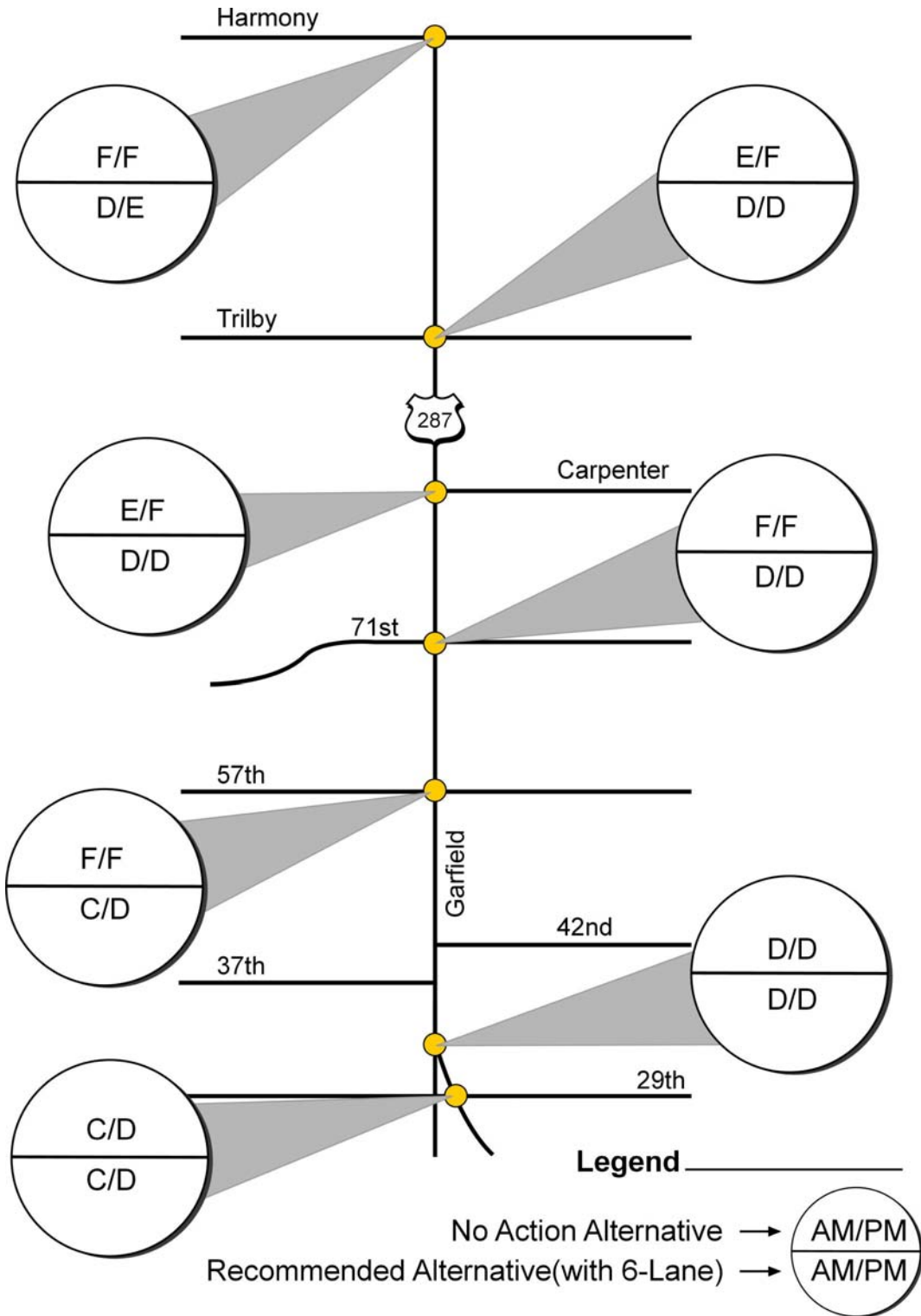


Figure 4-7: 2030 LOS at Intersections



Based on existing information, there are no major environmental constraints identified in the corridor that would preclude the development of alternatives or that could not be mitigated.

Environmental resources identified through the EOS process include noise, air quality, water quality, wetlands, wildlife, threatened and endangered (T&E) species, sensitive populations (environmental justice), publicly-owned lands, archeology, paleontology, historic properties, and hazardous materials. Of these resources, only wetlands, publicly-owned lands, and historic properties required additional evaluation and documentation to describe how potential impacts were avoided, minimized, or could potentially be mitigated.

#### 4.7.1 Wetlands

Sixteen wetland sites are located in or adjacent to the study corridor and most are associated with a stream or irrigation ditch. Avoidance, minimization, and potential mitigation were considered when developing roadway widening alternatives. Wetlands are located on both sides of US 287. Based on the location of these wetlands the following general observation can be made in regard to alternatives development and screening regarding wetlands:

Based on existing information, widening on both sides of the roadway minimized overall potential impacts to wetlands.

In some areas, either where wetlands are located on both sides of US 287 or where other constraints are located opposite of US 287 from the wetlands, some potential impact is possible. These potential impacts could possibly be mitigated further, or even eliminated, through future design and construction activities. These activities could include reducing the width of, or eliminating, the parkway between the travel lanes and the sidewalk, or by incorporating retaining walls to reduce fill and cut slope width. More specific information on these wetlands is described below. Approximate wetland locations are shown on the maps in Appendix A.



**Wetlands 1a and 1b.** These sites are located on both sides of US 287 and are associated with Dry Creek where it crosses under US 287. Widening equally from the existing centerline was considered at this location, which will likely avoid all potential impacts.

**Wetland 2.** This site is associated with Loudon Ditch which is located on both sides of, and crosses under, US 287. Based on existing mapping, widening of US 287 would potentially impact the Loudon Ditch wetlands.

**Wetland 3.** This site is located within Resthaven Cemetery on the east side of US 287. Roadway alternatives were intentionally shifted to the west to avoid impacting the cemetery and wetlands.

**Wetland 4a and 4b.** These sites are associated with an irrigation ditch that parallels both sides of US 287, through Manor Ridge Open Space (east side of US 287) and Long View Farm Open Space (west side of US 287). Site 4a is on both sides of US 287 and, based on existing mapping, would likely be within the additional right-of-way needed for roadway widening alternatives.

**Wetlands 5, 6, 7a, and 7b.** Wetlands 5, 6, and 7a are located on the west side of US 287, just north of Wetlands 4a and south of Carpenter Road. Wetland 7b is located on the east side of US 287, just north of Carpenter Road. On the east side of US 287 (across from Wetlands 5, 6, and 7a), are several existing businesses. Based on existing mapping, all of these wetlands would likely be impacted under any potential roadway widening alternative because of the need to expand the Carpenter Road and US 287 intersection to provide additional turn lanes.

**Wetlands 8a and 8b.** These sites are located on both sides of US 287 and are associated with a drainage that empties to Robert Benson Lake. Based on existing mapping, both of these wetlands would likely be impacted under any potential roadway widening alternative.

**Wetlands 9, 10a, and 10b.** These sites are located on both sides of US 287 just north of Wetlands 8a and 8b. Wetlands 9 and 10b are located on the east side of US 287 within the



Pelican Marsh Natural area. Wetland 10a is located on the west side of US 287. At least a portion of all of these wetlands would likely be impacted under any potential roadway widening alternative. A sidewalk currently exists to the west of Wetland 10a that could potentially be used instead of sidewalk in the US 287 cross-section to further reduce impacts.

**Wetland 11.** This site is located on the west side of US 287 south of Skyway Drive. Only a small sliver of the wetland would be potentially impacted by roadway widening alternatives. Furthermore, there are numerous existing businesses on the east side of US 297.

**Wetlands 12, 13, and 14.** These wetlands are located primarily on the west side of US 287, within the Redtail Grove Natural Area. Wetland 13 is along Fossil Creek and is on both sides of US 287. All of these wetlands would likely be impacted under any potential roadway widening alternative.

**Wetland 15.** This small wetland site is associated with a roadway drainage ditch north of Fairway Lane. The site is on the east side of US 287, in between US 287 and a frontage road. Based on existing mapping, widening alternatives may have some impact to the wetland.

**Wetland 16.** This site is associated with Mail Creek Ditch just south of the US 287 and Harmony Road intersection. This intersection would need to be expanded to provide additional turn lanes. Roadway widening in this area is not anticipated to impact this wetland.

#### **4.7.2 Publicly-Owned Lands**

There are four publicly-owned open-space/natural area properties adjacent to the existing US 287 right-of-way, including Long View Farm Open Space, Manor Ridge Open Space, Pelican Marsh Natural Area, and Redtail Grove Natural Area. Avoidance, minimization, and potential mitigation were considered when developing roadway widening alternatives. Potential impacts to these properties varied depending on the type and use of the property and were considered in the development of roadway widening alternatives.



Based on the location and potential impacts to these properties the following general observation can be made in regard to alternatives development and screening regarding publicly-owned lands:

Based on the location and status of publicly owned lands and their relationship to other environmental resources or corridor constraints, alignment shifts are not required, or appropriate, to avoid publicly owned lands. However, future actions on these publicly owned lands could result in potential impacts if those actions are incompatible with the findings of this EOS.

It is possible that future physical changes in, or interpretations of, the publicly owned lands could result in potential impacts. These potential impacts could possibly be mitigated further, or even eliminated, through future design and construction activities. These activities could include reducing the width of, or eliminating, the parkway between the travel lanes and the sidewalk, or by incorporating retaining walls to reduce fill and cut slope width. More specific information on these publicly owned lands is described below.

**Long View Farm Open Space.** The management objectives for this property are to 1) preserve a Loveland/Fort Collins separator, 2) protect scenic vistas, and 3) retain rural agricultural use. There is no public access and no trails are sited or planned. This property would not be considered protected parkland as covered under Section 4(f) (preservation of publicly owned parklands, waterfowl and wildlife refuges, and all historic areas).

**Manor Ridge Open Space.** There is no management plan for this property. The property was purchased as a buffer between US 287 and an adjacent subdivision. There is no public access and no trails sited or planned. This property would not be considered a Section 4(f) resource.

**Pelican Marsh Natural Area.** The management objectives for this property are to 1) protect scenic values, 2) protect and enhance habitat for wetland birds, 3) protect and maintain habitat for prairie dogs and burrowing owls on a portion of the site, 4) protect coyote and fox dens, 5) establish potential trail routes, and 6) help visitors understand natural values. The property is



divided into a western portion adjacent to US 287 that is occupied by Robert Benson Lake, and an eastern portion approximately ½ to 1 mile east of US 287 adjacent to Carpenter Road that forms the core wildlife area. There is currently no public access or trails for either portion, although this will likely change in the near future with the addition of planned trails and limited public access. Locations where trails and access are planned are within the core wildlife area.

The portion of the property adjacent to US 287 was surveyed for suitable wildlife habitat and determined to have no habitat important to management objectives. There are no trails or access planned in this portion of the property. This property would likely be considered a Section 4(f) resource for its wildlife status, but potential impacts caused by highway widening could be considered *de minimis* because there is likely to be no adverse effect to the area's activities, features, or attributes. This potential *de minimis* finding would need concurrence by the official with jurisdiction over this Natural Area. Potential impacts to this property could also be addressed under a Programmatic Section 4(f) for the same reasoning.

**Redtail Grove Natural Area.** The management objectives for this property are to 1) protect scenic values, 2) protect and re-establish native shortgrass and mixed grass prairie, 3) protect nesting and feeding habitat for red-tailed hawks and other raptors, 4) protect fossil bed areas and native plant communities, 5) protect normal changing characteristics of Fossil Creek and its tributary, 6) establish a potential route for a paved Fossil Creek trail and the Mason Street connector trail, and 7) teach future trail users about red-tailed hawks.

There is no currently no public access or trails, although this condition will change in the near future with the addition of planned trails and limited public access. The existing management plan depicts two future trails immediately adjacent to US 287, as well as, a pedestrian underpass under US 287 to connect to a future expansion of the Fossil Creek trail (currently under construction). The recreational trails portion of this property would likely be considered a Section 4(f) resource, once constructed. With this in mind, ongoing coordination is recommended with the Fort Collins Natural Resources Department regarding placement of the future trails so as to prevent or minimize future impacts.





### 4.7.3 Historic Properties.

There was one state-registered historic property (Deines Barn) and 2 structures and one ditch determined to be field eligible for the National Register of Historic Places (NRHP) within the study corridor. All field determinations, although likely appropriate, would be subject to concurrence by the State Historic Preservation Officer (SHPO). Avoidance, minimization, and potential mitigation were considered when developing roadway widening alternatives. Potential impacts to these properties varied depending on the status of the property as described below.

Based on the location and potential impacts to these properties the following general observation can be made in regard to alternatives development and screening regarding historic properties:

Based on the location and status of historic properties and their relationship to other environmental resources or corridor constraints, alignment shifts are not required, or appropriate, to avoid historic properties.

In some areas, potential impacts to historic properties are possible. These potential impacts could possibly be mitigated further, or even eliminated, through future design and construction activities. These activities could include reducing the width of, or eliminating, the parkway between the travel lanes and the sidewalk, or by incorporating retaining walls to reduce fill and cut slope width. More specific information on these historic properties is described below.

**Deines Barn.** This property is located more than 400 feet west of the existing US 287 right-of-way and would not be impacted by any roadway widening alternative.

**4216 N. Garfield.** The structure at 4216 N. Garfield (Western Welding) is located approximately 20 feet east of the existing US 287 right-of-way in an area that is undergoing urbanization with retail and commercial development. The structure was field identified because of its unique eyebrow dormers. Roadway widening alternatives in this area would bring the total right-of-way needed close to, but not touching, the structure.



Under Section 106 of the National Historic Preservation Act, as amended, impacts would likely be considered a *no adverse affect* because placement of the sidewalk would not likely impair the historical significance of the important architectural elements. Therefore, potential impacts to this property would likely qualify as *de minimis* under Section 4(f) pending concurrence from the SHPO. Furthermore, roadway improvements along US 287 are not currently anticipated outside of ongoing redevelopment proposals. If this property were redeveloped consistent with land use along the US 287 corridor, the historic structure would likely be removed.

**6400 N. Garfield.** The structure at 6400 N. Garfield is located approximately 150 feet east of the existing US 287 right-of-way and would not be impacted by any roadway widening alternative.

**Louden Ditch.** This ditch is located in the immediate proximity of US 287, from just south of 57<sup>th</sup> Street north to 65<sup>th</sup> Street. South and just north of 57<sup>th</sup> Street, the ditch is located immediately adjacent to US 287 on the west side. The ditch crosses under US 287 north of 57<sup>th</sup> Street, and then parallels the eastern side of US 287 north to 65<sup>th</sup> Street. This section of the Louden Ditch has been previously relocated and parts lined with concrete during the original construction of US 287. The ditch and much of its surrounding have lost its historical context due to encroaching urbanization. Under Section 106 of the National Historic Preservation Act, as amended, this section of the ditch would likely be considered eligible, but non-contributing, and therefore not likely considered a Section 4(f) resource. Because the ditch is located on both sides of US 287 with a crossing in between, all roadway widening alternatives would likely impact the ditch in some manner.

## 4.8 Physical Considerations

---

The Purpose and Need of the study is to preserve right-of-way in the US 287 study area that will ultimately allow the recommended build alternative to be constructed. The dimensions of proposed future widening in the corridor are described in detail in Section 6.0.

It is anticipated that many properties along the corridor will be developed or redeveloped in the coming years in advance of a comprehensive widening project sponsored by CDOT and the jurisdictions. Therefore, when a development project occurs, the local jurisdictions have the



ability to define building setbacks and right-of-way dedications that would allow for future roadway improvements. Jurisdictions have been doing this in anticipation of future US 287 widening, although without a comprehensive vision of what might be required in the corridor.

#### 4.9 Access Control Considerations

---

The US 287 EOS alternatives development process identified a need for six through lanes but did not specifically address access needs along US 287. Directly associated with the US 287 EOS process is an Access Control Plan (ACP) process. The ACP is a legal document that defines future access by type and location along US 287. The ACP process identified existing access points, roadway classification, future land use, mobility needs, and safety considerations in developing proposed access.

The City of Fort Collins, CDOT, and Larimer County previously completed an ACP document that covers the northern half of the corridor in February 2002 (*South College Avenue (US 287) Access Control Plan Update Report* by Felsburg Holt & Ullevig). This ACP for the section from Carpenter Road north past Harmony Road was approved by the CDOT Transportation Commission. The US 287 EOS does not change any of the accesses in that ACP.

CDOT, the City of Loveland, and Larimer County are preparing an ACP concurrently with the US 287 EOS for the section of US 287 south of Carpenter Road to 29<sup>th</sup> Street. Public and agency involvement activities were conducted throughout the ACP process in coordination with the US 287 EOS process to provide awareness and input opportunities. The results of the ACP support and are consistent with the US 287 EOS in terms of documenting future access needs with the recommended alternative.



## 5.0 PUBLIC AND AGENCY INVOLVEMENT

---

This chapter describes the integrated program of agency and public coordination and involvement activities conducted during the US 287 EOS process. These activities were specifically planned and conducted to accommodate the intent of the EOS corridor planning approach and to provide a commensurate level of public awareness and participation. The activities were open, inclusive, and ongoing throughout the EOS. The objectives of the agency and public involvement program included:

- Conduct outreach to all segments of the community.
- Provide opportunities for timely agency and public review and comment.
- Educate agencies and the public about the project, thereby enabling them to make knowledgeable and thoughtful comments.
- Provide CDOT, the Cities of Loveland and Fort Collins, Larimer County, and NFRMPO with well-defined and clearly stated agency and public process input to US 287 EOS decision-making.

The activities of the agency and public involvement program included agency and public scoping meetings, open houses, agency briefings, mailed announcements to the project mail list, door-to-door delivery of targeted project materials, a project link on the CDOT Web site links to the Cities', County and NFRMPO Web sites, a project newsletter, and an extensive media information program utilizing a variety of local print and electronic media resources.

### 5.1 Agency Involvement

---

Agency coordination provided for timely flow of project information between CDOT, the Cities of Loveland and Fort Collins, Larimer County, and NFRMPO. This group collectively formed the Project Review Team (PRT), whose representatives conducted project scoping, regular meetings and briefings, and review of project information and recommendations. The PRT also served to take information back to the respective agencies for dissemination and feedback from the appropriate department. The PRT met 10 times throughout the process.



## 5.2 Public Involvement

---

Public involvement activities were conducted throughout the US 287 EOS to provide widespread awareness of the project and opportunities for timely public input to decision-making. Activities included public outreach, traditional public meetings, and extensive use of the local media. Participants included concerned and interested citizens, property owners, business owners and tenants, special user groups, and the general public. Because potential impacts to minority and low-income populations would not likely be disproportionate in the study area, no special efforts for contact or participation were conducted.

### 5.2.1 Project Mail List

A mail list was developed and maintained for the mailing of the project newsletter and announcements of project public involvement activities. The mail list contains approximately 1,900 entries.

The mail list was derived from the Larimer County GIS listing of property owners and tenants in a defined Area of Direct Effect (ADE) paralleling US 287 in the study area. In addition to the ADE entries, it included all involved agencies (CDOT, FHWA, Cities, County, and NFRMPO), local media, attendees signing in at the open houses, local groups and organizations in the area, and other individuals variously contacting the project team (via e-mail, fax, calls, letters).

### 5.2.2 Public Meeting

Three public meetings were conducted during the US 287 EOS and ACP development. Two of the meetings were conducted as open houses; the third as a workshop. All were conducted to provide timely project information to the public and to obtain input to project decision-making.

Announcements of the public meetings were included in invitation post cards mailed to each entry in the project mail list (approximately 2,400 entries); door-to-door delivery of invitations to each business in the corridor (approximately 80 businesses); news releases, display ads, and Public Service Announcements (PSAs) for print and electronic media serving the area; and



postings on the CDOT Web site [www.dot.state.co.us/US287/](http://www.dot.state.co.us/US287/) with links to the cities, county, and NFRMPO Web sites.

All of the public meetings were held between 4:30 pm and 6:30 pm at Foothills Gateway, Inc. 301 W. Skyway Drive, located in the US 287 EOS study area.

All public meeting graphics were also posted on the CDOT Web site immediately before each meeting. After the open houses, news releases summarizing the discussions and issues raised were prepared and distributed to the local media and posted on the Web site. After the workshop, a meeting summary was prepared and posted on the Web site.

**Open House #1 (April 26, 2005).** This public scoping meeting was held to introduce the US 287 EOS and to provide the public with an opportunity to identify specific local issues to be addressed in the study. Sixty people attended this open house.

During the open house, attendees were specifically informed that the EOS would result in strategic recommendations for long-term improvements and ACP in the corridor and not a specific construction project. Attendees viewed and commented on the following information:

- Study description and goals.
- Purpose and Need of the study.
- Traffic and environmental conditions.
- Relationship to other regional corridor studies.
- How to get involved in the study.
- Study schedule.

Three primary issues were identified during the open house that attendees felt should be addressed in the study: concern about widening US 287, traffic signal timing along US 287, and safety concerns of a bike lane located alongside the highway.



Concerns about widening US 287 included recommending other north-south corridors because of the existing congestion on US 287, impacts to business access, which side of the right-of-way would the widening occur, spill over traffic onto local streets, and potential increases in noise on adjacent properties. With these concerns, however, some attendees did support widening US 287 to three lanes in each direction and improving it to a freeway.

Comments about traffic signal improvements included better signal timing to maintain traffic flow and additional left-turn arrows at major intersections, business entries, and access to local streets.

There was strong preference for a separate bike path located away from the highway that would accommodate both recreational and commuter bicyclists and pedestrians.

Other issues raised included relationship of the US 287 EOS to the recently completed Fort Collins Access Control Management Plan, coordination with other transportation projects in the area, desire to maintain open space in the corridor, and increased use of transit to accommodate some of the travel demand.

**Open House #2 (July 26, 2005).** This open house was held to provide an opportunity for the public to comment on the recommended alternative for the US 287 study area. During the open house, attendees viewed and commented on the process for identifying the recommended alternative, including the eight build alternatives initially identified (plus the No-action Alternative) and the evaluation of their advantages and disadvantages. Sixty-three people attended this open house.

Attendees expressed both support for and concerns about the recommended alternative. Those in support indicated preference for focusing improvements along the existing major north-south US 287 corridor, whereas others indicated preference for “spreading” improvements to other existing or proposed north-south corridors.

Other discussions at the open house focused on concerns about impacts to adjacent properties from roadway widening, costs and financing of the recommended improvements, and the timing



of the improvements. Attendees also expressed their desire for improving safety, reducing travel speeds, intersection improvements, access control, bicycle and pedestrian trails, and traffic signal improvements.

**Workshop #1 (October 12, 2005).** The first workshop for the Access Control Plan (ACP) was held in Loveland at the Pulliam Building in downtown Loveland. The purpose of the workshop was to introduce the draft ACP and obtain comments from attending property and business owners and tenants.

Twenty people attended the workshop. Of those attending, the number of business owners/tenants and residents was approximately equal. Although focused on access control in the Loveland portion of US 287 (south of Carpenter Road to 29th Street), ¼ of the attendees indicated a Fort Collins mail address.

Most of the attendees' questions and comments were answered and discussed at the table with an enlarged map of the draft Access Control Plan recommendations. As such, only two comment forms were filled out at the meeting. In addition, project staff recorded comments from attendees on 5 x 8 cards.

Project staff from CDOT, City of Loveland, and the North Front Range MPO were available throughout the evening to answer questions, receive comments, and address concerns regarding the project.

**Workshop (January 31, 2006).** This workshop was held to provide an additional opportunity for local property owners and tenants to view and comment on the recommended alternative for long-term modifications to US 287 and the related ACP recommendations for US 287 south of Carpenter Road in Loveland. Sixty-nine people attended this workshop. Mailings inviting attendees to the workshop included maps depicting proposed property access.

Attendees expressed ongoing support for the recommended EOS alternative – restating the need for improvements, asking clarification questions about the improvements, and wondering what the time frame might be for implementing the improvements.

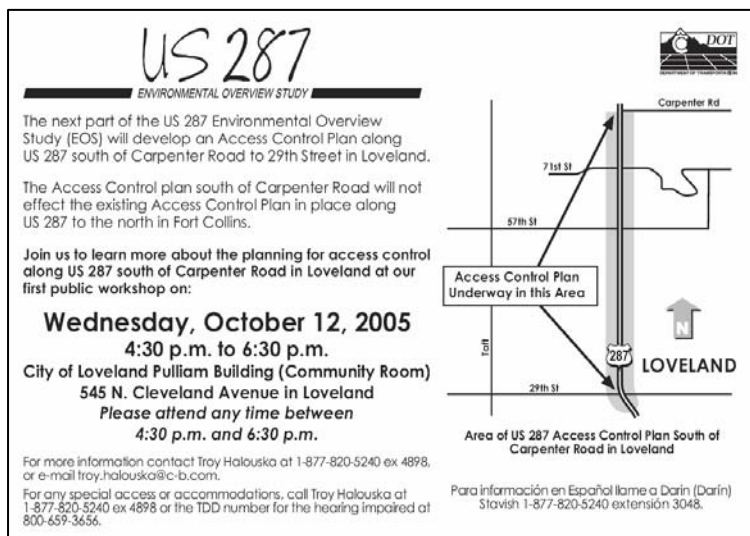




Discussion and comment on the ACP focused on short and long-term access impacts to specific properties, possible timing of implementation, consistency with existing access agreements, and visibility at some traffic signal locations. Project staff provided a lot of one-on-one question answering and clarification of access information to attendees.

### 5.2.3 Postcard Announcements

Postcards announcing the US 287 EOS public meetings were mailed to all entries on the mail list for receipt ten-days in advance of the open houses (example at right). In addition to announcing the open houses, the postcards also indicated the purpose of the open house, the types of information to be available for public review and comment, a map of the US 287 EOS study area, including location of the open house, and directions on obtaining special access or other accommodations (including language interpretation) to attend. The postcard announcements were most often cited as the primary means by which people learned about the open houses.



The postcards were also individually distributed by hand during business hours to each business along US 287 in the study area by the project team approximately one week in advance of the open houses to encourage business owners and tenants to attend. The high number of businesspeople attendees attests to the success of this door-to-door distribution.

### 5.2.4 Newsletter

One project newsletter was published during the US 287 EOS to inform the public about the decision of CDOT, the Cities of Loveland and Fort Collins, Larimer County, and the NFRMPO



regarding the recommended alternative. The newsletter was mailed in mid-September 2005 to all of the entries on the mail list (see **Figure 5-1**).

The newsletter included descriptive text, map, and typical cross-sections of the recommended alternative, descriptions of its environmental effects and travel benefits, a description of the overall process that led to the identification of the recommended alternative, and its intended use by the agencies involved in making long-term strategic transportation decisions in the US 287 study area. The newsletter also included an introduction to the future access control planning process for the portion of the corridor located south of Carpenter Road.

### 5.3 Public Information

---

Public information activities were planned and conducted to ensure there was widespread awareness of the US 287 EOS and planned public involvement activities. Information provided explained the process of identifying and evaluating alternatives, the selection of the recommended alternative, and the schedule of the public open houses providing opportunities for the public to participate in the EOS process.

#### 5.3.1 Media Information

Media information about the US 287 EOS was regularly provided to the following regional and local print media (newspapers) and electronic media (television and radio) serving the area:

- *Loveland Daily Reporter-Herald*
- *Fort Collins Coloradoan*
- *Fossil Creek Current*
- *Rocky Mountain News*
- *Denver Post*



# US 287

ENVIRONMENTAL OVERVIEW STUDY



# US 287

ENVIRONMENTAL OVERVIEW STUDY

## Recommended Alternative for US 287 EOS Selected

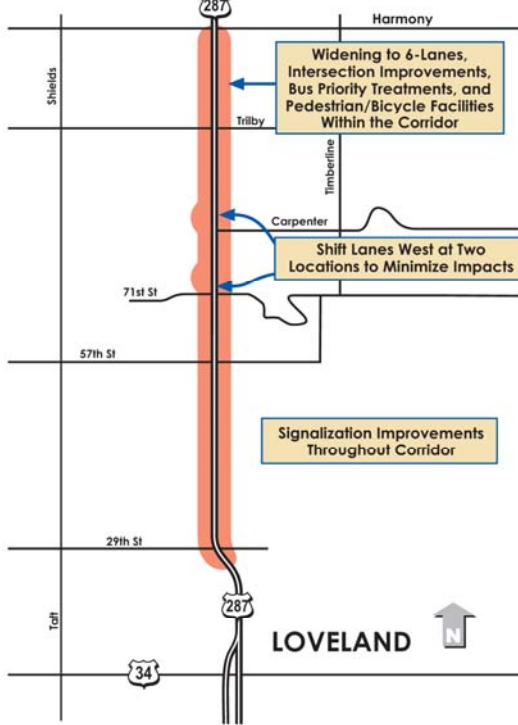
The Colorado Department of Transportation (CDOT), with the cities of Fort Collins and Loveland, Larimer County, and the North Front Range Metropolitan Planning Organization, has recommended an alternative that identifies right-of-way footprints for future US 287 corridor improvements.

The recommended right-of-way along US 287 between Harmony Road in Fort Collins and 29th Street in Loveland will ensure adequate area for the following future improvements: (see map to right):

- Widening the roadway to 6-lanes to accommodate future travel demand and reduce congestion.
- Intersection improvements to accommodate peak-hour demand.
- Priority for future bus transit.
- Safety improvements including access control south of Carpenter Road to 29th Street.
- Pedestrian and bicycle facilities connecting Fort Collins and Loveland.
- Traffic signal timing improvements.

*Continued on next page*

## FORT COLLINS



US 287 Improvements Included in the Recommended Alternative

## What is the US 287 EOS

The US 287 Environmental Overview Study (EOS) identifies future transportation needs in the US 287 corridor and recommends possible long-term transportation improvements that address these needs.

The improvements are strategic recommendations identifying future right-of-way requirements, access control, safety, and multi-modal opportunities; and are not specific construction projects.

The study considers potential economic and environmental effects and public acceptance.

The EOS was prepared in coordination with other transportation planning in the region to ensure that the recommended improvements address regional transportation needs in a comprehensive manner.

### Questions? Need Additional Information?

For more information about the US 287 EOS or to schedule a briefing for your organization, call Troy Halouska at 1-877-820-5240 ex 4898, or email [troy.halouska@c-b.com](mailto:troy.halouska@c-b.com)

US 287 EOS information is also posted on the CDOT web site at [www.dot.state.co.us/US287/](http://www.dot.state.co.us/US287/)

Figure 5-1: Partial Section of the Project Newsletter





## Electronic Media

The information provided included news releases (all media) and display ads (print media only). News releases to announce the upcoming open houses were sent for publication/broadcast two weeks prior to the event. In addition, quarter page newspaper display ads were published two days prior to each public meeting. The display ads were similar in design and information conveyed as in the announcement post cards.

News releases summarizing the highlights of the public meetings were prepared and distributed to the media for their use within ten days prior to or following the public meetings (example at right). These provided specific information about the issues and concerns raised and summaries of the types of comments received. The follow-up releases also described the next steps in the EOS process and their schedule.

### 5.3.2 Web Site

All of the US 287 EOS public meeting materials were posted on CDOT's Web site ([www.dot.state.co.us/US287/](http://www.dot.state.co.us/US287/)) at the project link immediately after the open houses to facilitate public access to the most current project information. In addition, the announcement postcards and follow-up news releases were also posted immediately when mailed and when distributed to the local media, respectively. In addition, the cities, the county, and the NFRMPO all had links to the CDOT Web site project link as well.

FOR IMMEDIATE RELEASE

#### Workshop Scheduled for US 287 Access Control Planning in Loveland

**Larimer County** – The Colorado Department of Transportation (CDOT), the cities of Loveland and Fort Collins, Larimer County, and the North Front Range Metropolitan Planning Organization have completed the alternatives portion of the US 287 Environmental Overview Study (EOS). The next part of the process will be to develop an Access Control Plan along US 287 south of Carpenter Road to 29<sup>th</sup> Street in Loveland. A public workshop to kick-off this access control planning process has been scheduled.

The workshop is scheduled for Wednesday, October 5, 2005 from 4:30 pm to 6:30 pm at the City of Loveland Pulliam Building Community Room, 545 N. Cleveland Avenue in Loveland. The workshop will be conducted in an open house format, so attendees can attend anytime during the two hours scheduled.

During the workshop, attendees will learn about the access control planning process, its schedule, and relationship to the recent US 287 EOS corridor recommendations. The workshop will also provide opportunities for attendees to schedule individual work sessions with project planners to discuss their own access issues and needs.

"It is extremely important for people to understand that this access control planning process along US 287 south of Carpenter Road in Loveland will not affect the existing Access Control Plan in place along US 287 to the north in Fort Collins," says CDOT Project Manager Carol Parr. "This will be a separate Access Control Plan developed specifically for the business area along US 287 south of Carpenter Road to 29<sup>th</sup> Street in Loveland," she adds.

-more -



## 6.0 RECOMMENDATIONS

---

The recommended alternative includes an alignment and typical sections for the US 287 study area. These two elements result in a recommended footprint for edge of pavement and right-of-way. Other recommendations include bus priority for BRT or other buses and signal improvements.

Coupled with the recommended alternative is an Access Control Plan (ACP) that was developed in close coordination with the US 287 EOS. The ACP is a legal document that defines where future access changes or modification can occur and what type of access can be developed. Combined together, the EOS and ACP provide guidance for future improvements within the US 287 study area. A memorandum of understanding (MOU) formalizes the findings of the EOS and how the affected agencies agree to implement the findings. Similarly, an intergovernmental agreement (IGA) formalizes the findings of the ACP and documents how agencies will address future access. This new ACP, along with the existing ACP for the segment north of Carpenter Road, will provide a complete Access Management Strategy for the full length of the project corridor.

### 6.1 Alignment

---

The recommended build alternative incorporates a six lane template of US 287 from 29th Street to Harmony Road. In developing the six lane build alternative, three options were considered for widening the roadway: widening to the west, widening to the east, and widening equally on both sides. For most of the corridor, development occurs relatively equally on both sides of the roadway and, in general, is relatively close to the roadway. Widening to one side or the other would result in relatively larger impacts than widening equally on each side. Additionally, widening equally on both sides is consistent with the right-of-way designations from previous projects along US 287 and would result in generally equal impacts to adjacent properties throughout the corridor. As a result, it was determined that the most appropriate method to accomplish the six-lane build alternative would be to widen equally on each side of the existing roadway, where possible.



There are, however, two locations where widening equally on both sides would have resulted in greater impacts. At these two locations, a horizontal alignment shift to the west is proposed to avoid and minimize impacts. These locations and the resulting effects to the recommended alternative are described below:

- Just north of 71<sup>st</sup> Street, the Resthaven cemetery is located in the northeast quadrant of this intersection. Grave sites are located just outside of the existing right-of-way. Because of identified difficulties in acquiring cemetery property and relocating grave sites, it was determined that the alignment should shift away from this area. Land use on the west side of US 287 at this location is open space. Consequently, the existing right-of-way border of the cemetery would be held and would be the outside edge of a utility easement, and the US 287 cross section would begin at that point and widen to the west. This results in about a 40 foot shift of the US 287 centerline to the west. The transition for this shift will be designed to accommodate the posted speed (at the time of design) and the associated design speed. The concept for this shift is shown in **Figure 6-1**.
- The section between Carpenter Road and Triangle Drive is proposed to be widened and realigned by an adjacent developer. The dimensions and design criteria for this roadway improvement were negotiated and agreed to prior to the initiation of the US 287 EOS, so the dimensions do not exactly match the cross-section recommended as part of the EOS. This realignment of US 287 would result in about a 25 foot centerline shift to the west. The developer would be dedicating up to 50 feet of right-of-way for this work. This realignment would also avoid a direct impact to two homes along Victoria Drive, if combined with some modifications to the cross section to reduce the sidewalk and parkway widths. This realignment would be accomplished with straight taper designs. The concept for this shift is shown in **Figure 6-2**.

## 6.2 Typical Section

---

The proposed cross-section of a six-lane US 287 was developed to be consistent with, or meet the minimum, cross-sections of each jurisdiction. The basis for the cross sections is the *Larimer County Urban Area Street Standards* (2001), and CDOT Standards. Both Fort Collins and Loveland have slightly different variations that they have incorporated for widths of different elements of the cross-section. In addition, Fort Collins requested that a slightly larger sidewalk width be included (with a corresponding reduction in parkway width). CDOT has a minimum median section also incorporated in the cross-section.

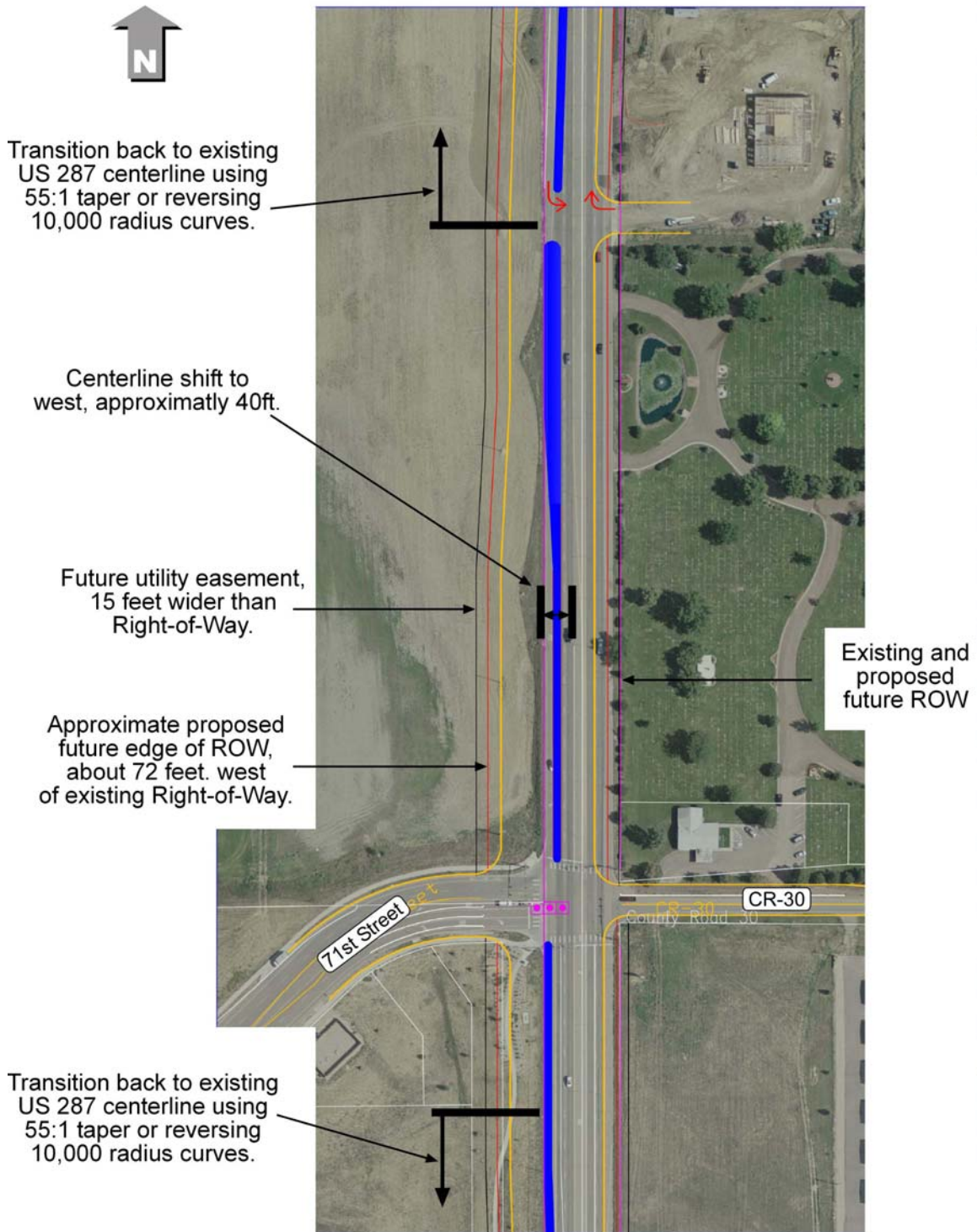
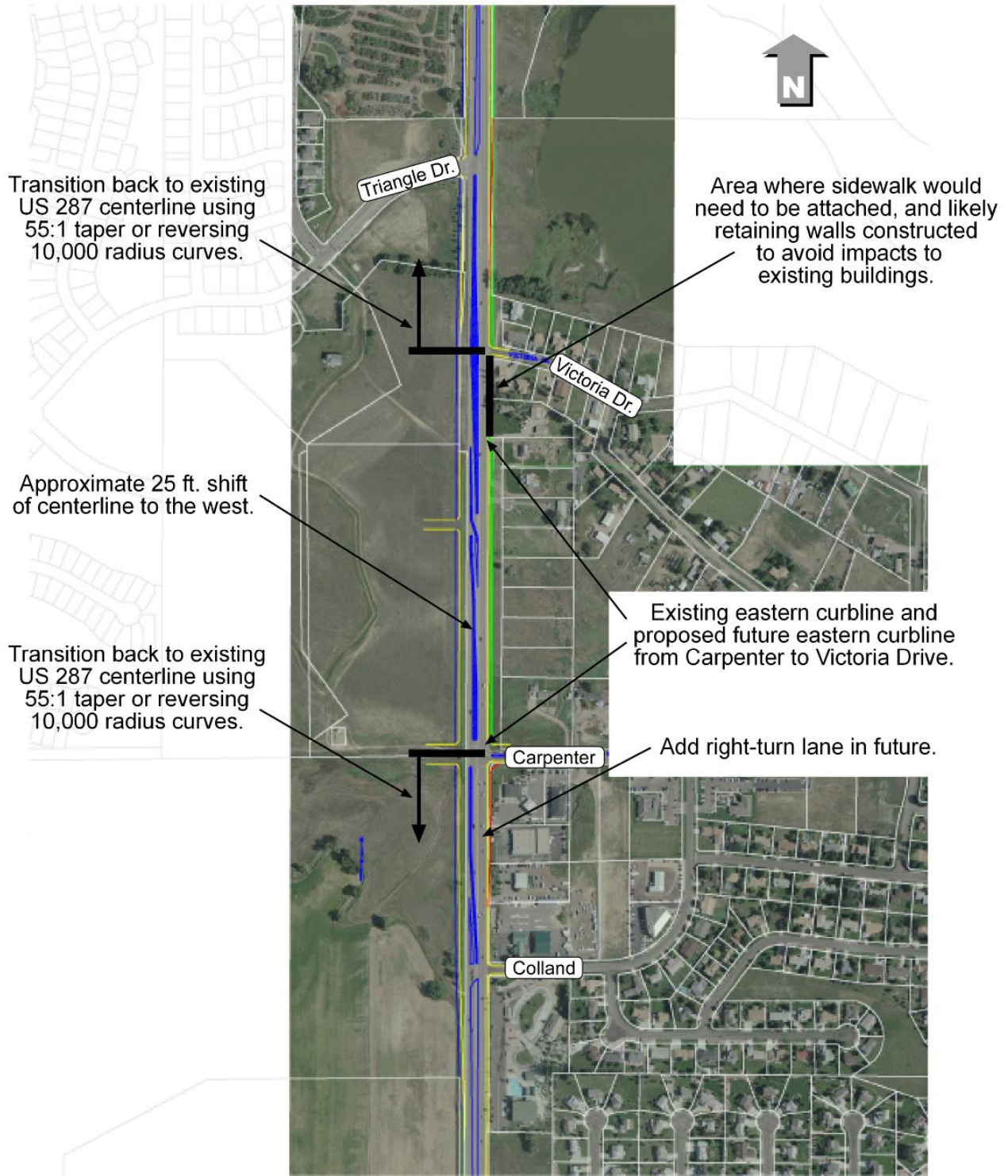


Figure 6-1: Alignment Shift at Cemetery



**Figure 6-2: Alignment Shift at Carpenter Road**





It was noted in the EOS process that the cross-sections for principal arterials used by both cities would equate to a 45 mph design/posted speed. However, as an intra-city corridor, the desire of CDOT and each jurisdiction is to accommodate the existing 55 mph speed limit on US 287 until such time that development and traffic require changes.

The limiting feature of the cross-section that makes the City cross sections criteria equate to 45 mph is the vertical curb in the median and its proximity to the driving lane. With input from the American Association of Highway and Transportation Officials (AASHTO) standards for offsets and shoulders, CDOT, and the Project Review Team, a cross-section that includes a curbed median two feet from the driving lane (shy distance) was selected for use on US 287. This curb is a mountable design (sloped face), not barrier design (vertical face). This two-foot offset and mountable curb are appropriate for the 55 mph posted speed.

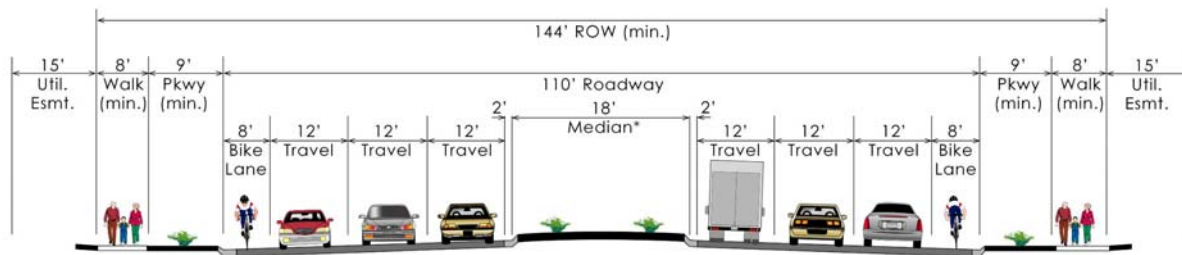
The limits determined for future speed zones were based on the location of existing and future potential signals. This resulted in the following assumptions for future speed limits and recommended cross-sections:

- **From 57th Street South** - This section currently has .5 mile signal spacing (or less) and a speed limit varying from 45 mph to 50 mph. It was determined that when the future cross-section with a raised median is implemented, 45 mph would be an appropriate design and posted speed.
- **North of 57th Street to Harmony Road** - The existing speed limit is 55 mph in this section until just south of Harmony Road. In order to maintain the current higher speed limit, the cross-section that includes the two-foot shy distance and mountable curb is recommended from 57th Street north to the transitions for the Harmony intersection.

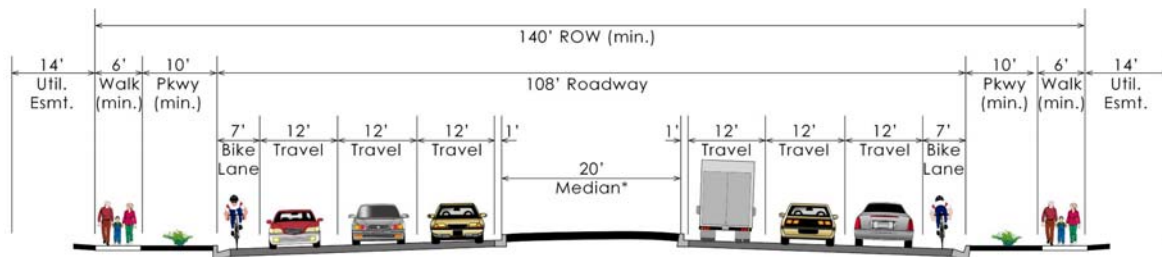
The cross-sections assumed for the two roadway sections listed above are shown in **Figure 6-3**. These cross-section dimensions apply to the US 287 mainline between intersections and can accommodate a standard intersection with single left-turn lanes and no additional right-turn lanes. The single left-turn lane is a 12-foot lane that is taken out of the median. This results in a six-foot raised median at the turn lane north of 57th Street and an eight-foot raised median at the turn lane south of 57th Street. The wider median will result in an undesirable offset of left turning lanes at intersection that will need to be addressed in final design to recognize potential



sight distance issues. Mitigation for the sight distance issues includes using protected-only left turn phasing or reducing the width of the median nose, if possible. There are many locations in the study area where additional median width would be required because of double-left turn lanes or separate right turn lane(s). The locations where a wider median is assumed to accommodate double left turns are described below:



**US 287 Cross-Section North of 57th Street - 55 mph**



**US 287 Cross-Section South of 57th Street - 45 mph**

**Figure 6-3: Cross Sections**

Double left turn lane locations:

- Carpenter Road, in the northbound, southbound, and westbound directions
- At 65th Street, northbound left.
- At 29th Street, northbound left.

In general, CDOT does not normally require separate right-turn lanes on six-lane facilities unless they are determined to be necessary for traffic capacity or other operational purposes. For the US 287 EOS, it was determined that the most desirable and conservative design would include a separate right-turn deceleration lane at every signalized intersection. Decisions could



be made in the future based on traffic data at the time of design as to whether certain turn lanes could be omitted or added.

Additionally, more detailed traffic analysis will be needed in the future at the time of intersection design to determine the length of right-and left-turn lanes.

The recommended alternative is presented in plan sheet format in the Appendix. These conceptual design plan sheets show the following elements:

- Alignment and widening (including two locations where alignment shifts to the west).
- Cross-section (including different cross-sections north and south of 57th Street).
- Locations where a wider median is recommended (at intersections).
- Separate right-turn lanes.
- Lane locations, sidewalk locations, and right-of-way locations.

### **6.3 Other Recommended Improvements**

---

Not shown on the recommended alternative plan sheets is bus signal priority for Bus Rapid Transit (BRT) or other buses and signal improvements.

#### **6.3.1 Bus Signal Priority**

Providing modal alternatives and interrelationships was identified in the project Purpose and Need in terms of potential improvements within the US 287 study area. These alternatives included transit, pedestrian, and bicycle travel. Pedestrian and bicycle travel are incorporated into the recommended cross-section directly. Transit is incorporated by accommodating existing and future bus transit. Recognizing that transit use is influenced by travel time, the recommended alternative includes the use of bus signal priority when, and if, this technology is needed to improve bus travel time. Because the forecasted LOS along US 287 with the recommended improvements is acceptable with relatively little delay, no specific bus priority improvements have been identified. However, the recommended cross-section can accommodate bus-priority at intersections by providing striping of the right-turn deceleration



lane as a bus priority lane and providing initial signal time to the bus movement. If land use patterns, or traffic growth occurs differently than forecasted and results in congestion at one of the intersections, bus signal priority can be accommodated within the recommended cross-section.

### **6.3.2 Signal Improvements/ITS**

Signal improvements do not affect the typical section or alignment of the recommended improvements. However, signal improvements are included in the recommended alternative. Specifically, the recommendation includes future coordination between the City of Fort Collins and the City of Loveland for all existing and future traffic signals along the corridor. Good signal coordination reduces overall travel delay and better serves regional travel, as typical on US 287. This improvement is not dependent up the widening of US 287 to six lanes but may be better served as new signals are added to the roadway. For this recommendation, future new signals or signal improvements should accommodate signal communication and coordination with a master controller. No other specific intelligent transportation system (ITS) improvements are recommended but may be found to be appropriate during future studies or design efforts. The recommendations in this EOS should be compatible with most forms of ITS as may be considered for this corridor in the future.



## 7.0 NEXT STEPS

---

The next steps include potential implementation approaches, additional NEPA planning if federal or CDOT funds are used or if a federal permit is needed, and relationship to the companion ACPs.

### 7.1 Implementation Approach

---

The US 287 EOS is intended to provide 2030 planning horizon guidance on the best set of transportation improvements to address the needs of the US 287 study area between Harmony Road in Fort Collins and 29th Street in Loveland. The EOS can be used as a tool for planning, right-of-way acquisition, design, approval, and construction purposes by affected agencies. These agencies include, but are not limited to, CDOT, Larimer County, the Cities of Loveland and Fort Collins, and NFRMPO.

The premise of the EOS is that ongoing growth and development in the Loveland and Fort Collins area may result in local actions, approvals, or improvements that directly affect US 287. Determining the long-range needs of US 287 provides a framework and template for these actions, approvals, or improvements to occur.

There are two companion documents for the corridor that document the approved future access configurations along US 287. These include the *US 287/South College Avenue Access Control Plan, north of Carpenter Road*, and *US 287 Access Control Plan, Carpenter Road to 29<sup>th</sup> Street*. Whereas, the EOS provides guidance and a template for the number of lanes, the alignment, and the right-of-way footprint for US 287, the ACPs provide the approved access configurations. The EOS and ACPs together can be used to guide future transportation improvements.

A memorandum of understanding (MOU), developed as part of the EOS process, formalizes the findings of the EOS and how the affected agencies agree to implement the findings. Similarly, an intergovernmental agreement (IGA), developed as part of the ACP process, formalizes the findings of the ACP and documents how agencies will address future access.



The schedule of improvements along US 287 has not been determined as funds have not been dedicated or programmed for this purpose. However, there are several ways that improvements could occur in the future:

**Private Development.** Developers may request approval from local agencies or CDOT to construct business and/or residential property that directly affects US 287. This approval may be in the form of zoning, plats, infrastructure, conformity, or access. Depending upon the characteristics of the proposed development, improvements may be required on US 287 relating to access or capacity for future right-of-way needs. The US 287 EOS provides the template for those improvements. Private developers may also include individual landowners who desire to make major improvements, to their property, such as zoning or land use changes. Private developer improvements are typically localized and immediately adjacent to the proposed development. The timing of these improvements is dependent upon market forces and the resulting interest in developers to pursue these projects.

**Local Agency.** Local agencies, including the Cities of Loveland and Fort Collins, or Larimer County, may program improvements along US 287 within their respective jurisdiction, to address safety, capacity, or other mobility needs. Although no projects are currently programmed, future projects could result from the long-range or NFR Transportation Improvement Plan (TIP) planning processes or as a result of local agency priorities. These types of improvements may be localized, such as an intersection improvement, or more corridor specific, such as a section of roadway being improved. Local agencies may also obtain right-of-way for future transportation needs. The US 287 EOS provides the template for these improvements. The timing of these improvements is dependent upon general traffic growth and travel characteristics and upon citywide or countywide transportation priorities. These types of improvements typically take longer to plan and program than private developer projects.

**CDOT (State Funds).** CDOT may program improvements along US 287 as a state highway. If the funds programmed for the improvements are state funds and no other federal actions are required for the improvements, CDOT could design and construct the improvements using guidance from the US 287 EOS and CDOT's Environmental Stewardship Guide. The types of improvements that would more likely be constructed using only state funds are typically safety



projects, such as intersection improvements, or minor geometric improvements. Most capacity projects along state highways are constructed using federal funds, discussed in the next paragraph. Although no projects are currently programmed, future projects could result from the long-range Statewide Transportation Improvement Plan (STIP), or be developed in the statewide transportation improvement program. These types of projects typically take longer to plan and program than private developer projects.

**CDOT (Federal Funds).** If the long-range or Statewide Transportation Improvement Plan (STIP) planning process identifies the need for improvements along US 287, the funds programmed to address these needs would most likely include federal funds, based on existing and projected funding sources. The types of improvements programmed could range from minor safety projects, such as turn lanes, to major widening along the entire corridor. If federal funds are used, a NEPA environmental approval document will be required. The National Environmental Policy Act of 1969 applies to all projects using federal funds or requiring federal action. The US 287 EOS is not a NEPA document as no federal funding has been identified for the corridor. However, the EOS was developed following NEPA principles such that there is currently a low risk that the results of a NEPA approval process and document would be materially different from the results of the EOS. Before any NEPA process would be initiated, a review of the existing and proposed environment along US 287, a review of current environmental regulations and guidance, a review of transportation needs and possible alternatives, etc. would be conducted and compared with the information contained in this EOS. If there are no substantially changed conditions the US 287 EOS could be used as a basis for developing the NEPA process.

In summary, given the existing lack of programmed improvements within the US 287 study area, a NEPA approval document is not applicable. However, given the existing and future needs along the corridor, and the ongoing development pressures, the US 287 EOS provides the necessary long-term guidance for ongoing transportation and land use improvements. The US 287 EOS provides a template for number of lanes, alignment, and right-of-way needs for the 2030 planning horizon. The companion documents, *US 287 Access Control Plan, Carpenter Road to 29<sup>th</sup> Street* and *US 287/South College Avenue Access Control Plan*, provide approved access configurations along US 287 as development or major roadway improvements occur.



## 7.2 Additional NEPA Planning

---

Should federal or CDOT funding be used or a federal permit be needed to construct any or all aspects of the recommended alternative in the US 287 EOS, additional environmental evaluations would be necessary to meet NEPA requirements or construction permitting. The following summarizes additional considerations based on the environmental resources reviewed in Section 3.4.

### 7.2.1 Noise

A noise model (TNM2.5) was generated to schematically represent the traffic and geographic conditions present along the corridor between 29<sup>th</sup> Street and Harmony Road. The model utilized traffic information for peak average morning and evening hours in 2030 traffic for a six lane configuration centered along the existing alignment (see Section 3.1 for traffic information). Traffic composition was estimated at 3 percent trucks, based on CDOT traffic tables for this segment of US 287. Noise impact contours of 66 decibels and 71 decibels were generated to represent the distance away from the roadway that noise impacts to residences and businesses, respectively, would likely occur. The Contours are available for both existing and year 2030 conditions as shown in the mapping contained in the Appendix. The contours are intended to assist engineers and environmental planners to avoid and/or minimize noise impacts in future roadway design. Additionally, this information may help to facilitate decisions with local agency planning in relation to future development type and new construction setbacks from the roadway.

Planning level noise predictions generated from the noise model were developed for both the existing conditions and the year 2030 conditions with the six lane highway configuration. These are represented by a calculated noise impact distance tabulated in **Tables 7-1 and 7-2** and schematically shown on the plan sheets in the Appendix. The noise impact distance is calculated from the edge of pavement, in this case from the edge of outer roadside curb on the proposed six lane highway. Sidewalks and adjacent parking pavement could contribute to measurable increases in predicted noise levels. These hard surface elements were not included in this EOS and would need to be addressed in detailed NEPA analyses. For the





segment of US 287 between 29<sup>th</sup> Street and 57<sup>th</sup> Street, the impact distances for Category B (primarily residences) and C (primarily businesses) are closer than the 57<sup>th</sup> to Harmony Road segment primarily due to the higher average peak traffic volumes and lower posted speed south of 57<sup>th</sup> Street.

**Table 7-1:  
Noise Impact Distances for 2005 Existing Condition**

Road Segment	Category B 66 dBA Distance (ft)	Category C 71 dBA Distance (ft)	Average Peak Total Traffic Volumes (vehicles per hour)	Posted Speed (mph)
29 <sup>th</sup> Street to Orchard Road	80	20	2511	40
Orchard Road to 57 <sup>th</sup> Street	90	25	2960	45
57 <sup>th</sup> Street to Harmony Road	150	50	2758	55

**Table 7-2:  
Noise Impact Distances for 2030 Six-Lane Alternative**

Road Segment	Category B 66 dBA Distance (ft)	Category C 71 dBA Distance (ft)	Average Peak Total Traffic Volumes (vehicles per hour)	Posted Speed (mph)
29 <sup>th</sup> Street to Orchard Road	100	25	3252	45
Orchard Road to 57 <sup>th</sup> Street	130	25	3517	45
57 <sup>th</sup> Street to Harmony Road	240	80	3995	55

Recommendations are:

1. These impact distances should be provided to the local jurisdictions for their planners to use in future development planning.
2. In future NEPA studies:
  - Since existing land use will have changed, existing noise levels will need to be re-measured.



- Calculations of future noise levels will need to be made using TNM or some similar noise model.
- Consideration will need to be made of possible noise abatement, if determined to be needed.

### 7.2.2 Air Quality

Future NEPA analysis would require regional and project level air quality analysis for carbon monoxide, ozone and possibly particulates. This analysis could include regional analysis of vehicle miles or vehicle hours of travel, use of accepted hot-spot models to predict future concentrations of carbon monoxide or particulates, estimation of mobile source air toxics, etc. This may be of particular concern at intersections which will operate at LOS D or lower, such as at Harmony Road. CDOT and the Air Pollution Control Division of the Colorado Department of Public Health and Environment will be involved in making the determination of air quality analysis to be done, as well as the NFRMPO.

### 7.2.3 Water Resources

Water resources would not have a substantial influence on the final placement of potential roadway improvements for US 287. Water resources would have an effect on project design, and stormwater discharge requirements would need to be considered for any future construction project because of the proximity of several waterbodies.

Current floodplain mapping will need to be collected and impacts analyzed.

CDOT has developed a statewide New Development and Redevelopment Program to reduce the discharge of pollutants from areas of new highway development and significant redevelopment after construction is complete and to comply with Part I.B.1 (b) of the CDOT MS4 Permit Number COS-000005. The program consists of a number of elements that have been developed and written by CDOT to be flexible so that the program is applicable across a wide variety of site conditions that exist in Colorado.

The criteria developed for each of these permits would need to be reviewed prior to final design and construction. Because these permits may overlap geographically and in content, close



coordination between the four agencies holding MS4 permits would be required to identify and implement the most appropriate elements of the permits.

#### **7.2.4 Wetlands**

It is a requirement of the Clean Water Act (CWA) that impact to wetlands must be avoided if practicable and minimized if it is not possible to avoid impact. Therefore, the location of wetlands would have influence on the final placement and configuration of potential roadway improvements since small bands of wetlands are present within the US 287 EOS study area. Sixteen wetland sites are located in or adjacent to the study corridor; most sites are associated with a stream or irrigation ditch. Wetland types in the study area include scrub-shrub, emergent, and aquatic bed. Ten wetlands appear to be jurisdictional.

Should federal or CDOT funding be used for the project or if a Section 404 permit is required, the wetland areas (or any new ones) would require delineation to U.S. Army Corps of Engineers (Corps) standards and determination of jurisdictional status. The relative impacts of the design alternatives, if any, would need to be calculated by acre. After the Corps concurs on the extent of the project's impact, negotiations would also be needed to determine effective avoidance, minimization or mitigation strategies. Avoidance measures could result in minor roadway alignment adjustments or design modifications such as retaining walls. Typical mitigation strategies could include creating a new drainage design, as well as replacing the wetlands in kind in another suitable location.

#### **7.2.5 Stormwater Runoff**

Under Section 402 of the CWA, a National Pollutant Discharge Elimination System (NPDES) permit is required for point discharge into Waters of the United States. Section 402 also requires that NPDES permits be issued for various categories of stormwater discharges. CDPHE is delegated by the EPA to issue 402 permits under the Colorado Discharge Permit System (CDPS) program. A construction stormwater permit is required if one or more acre of land disturbance is anticipated on a construction project, or if the project is part of a larger plan.



Three agencies hold Municipal Separate Storm Sewer (MS4) permits in the study area: Larimer County, City of Fort Collins and City of Loveland. There are six “minimum” measures that each standard MS4 program is required to address: public education, public involvement, illicit discharge detection and elimination, construction site stormwater runoff control, post-construction management of new development, and municipal operations.

### **7.2.6 Wildlife and Threatened and Endangered Species**

Wildlife and threatened and endangered (T&E) species would likely not have substantial influence on the final placement and configuration of potential roadway improvements in the US 287 study area because of the current lack of suitable habitat adjacent to the right-of-way. Furthermore, there are no state or federal T&E species identified in the study corridor. However, these findings (including current correspondence with the US Fish and Wildlife service regarding species of concern) should be verified during a subsequent NEPA process. Construction permitting would likely need to address the Migratory Bird Treaty Act, which prohibits actions that negatively impact migratory birds.

### **7.2.7 Environmental Justice**

Several areas with minority and low-income populations were identified in the US 287 study area. Should federal or CDOT funding be used for the project, additional public participation is recommended that invites or encourages minority and low-income populations. Additional outreach to all residents adjacent to the corridor with Spanish translation services available should also be considered. Outreach to all businesses is needed as well, to determine if any are minority owned or have large concentrations of low income or minority employees.

If low income or minority populations are found to be negatively impacted, additional analysis would be needed in compliance with the 2005 CDOT Environmental Justice Handbook.

### **7.2.8 Publicly-Owned Lands**

Publicly-owned properties may have some influence on the final placement and configuration of potential roadway improvements in the US 287 study area. While public lands along the existing right-of-way may not be considered Section 4(f) lands currently because of the lack of



public use and facilities, future trail expansion and public facilities at Redtail Grove and Long View Farm could change this status. In addition, designation of Redtail Gove Natural Area as a wildlife habitat area may qualify for protection under Section 4(f). Both Larimer County and Fort Collins have a process for granting easements or rights-of-way for a variety of purposes on these properties, including streets and utilities. Early coordination with Larimer County regarding Long View Farm, and coordination with Fort Collins regarding Manor Ridge Open Space, Robert Benson Lake, and Redtail Grove Natural Area is recommended. Early coordination would also help with future trail planning to avoid later impacts from US 287 expanded right-of-way.

Should Federal or CDOT funding be used for the project, additional analysis regarding which properties are protected, avoidance of impacts, and impacts to the property will be necessary. Section 4(f) applies to significant publicly owned public parks and recreational areas that are open to the public, and to significant publicly owned wildlife and waterfowl refuges, irrespective of whether these areas are open to the public or not, since the "major purpose" of a refuge may make it necessary for the resource manager to limit public access. When private institutions, organizations or individuals own parks, recreational areas, or wildlife and waterfowl refuges, Section 4(f) does not apply to these properties, even if such areas are open to the public. If a governmental body has a permanent proprietary interest in the land (such as fee ownership or easement), it is considered "publicly owned" and, thus, Section 4(f) may be applicable.

### **7.2.9 Archaeology and Paleontology**

Known archaeological and paleontological resources are not likely to have a substantial influence on the placement and configuration of potential roadway improvements for US 287. There may, however, be archaeological resources that have not been previously identified that could affect final roadway location or design. Future NEPA processes would need to include involvement with the State Historic Preservation Officer (SHPO) in determination of eligibility and effect, in full compliance with Section 106 of the National Historic Preservation Act. If construction of potential roadway improvements included excavations near the Playa in Long View Farm or in the flanks and bottom of Fossil Creek, an archeologist or paleontologist should be present to mitigate any resources exposed.



### 7.2.10 Historic Properties

There is only one existing property that has official historic recognition in the corridor, the Deines barn and silos which is listed on the State Register of Historic Places. Other potential properties identified include two buildings and one ditch (Louden) that may be eligible for the NRHP. Although the BNSF Railroad was identified as potentially eligible, it would not be impacted by potential improvements since it is located .25 mile or more from the US 287 right-of-way.

Should federal or CDOT funding be used for the project, additional historic research and agency consultation would need to be completed. Impacts to historic properties are assessed by FHWA Federal Highway Administration and CDOT to evaluate potential Section 106 and Section 4(f) requirements for a project. Section 106 (historical) reviews are required by the National Historic Preservation Act, and Section 4(f) considers any land from an historic site of national significance. Therefore, additional historic research and consultation would be required for the two structures and one ditch to determine their official historic significance and status. Depending on the timing of subsequent NEPA analysis, additional historic properties may need to be examined as well. The State Historic Preservation Officer must be consulted to concur with an eligibility determination for any potential properties. If any properties are determined to be eligible, the next step would be an effects determination. Roadway improvements would need to avoid or minimize impacts to these historic properties if such avoidance is prudent and feasible.

### 7.2.11 Hazardous Materials

Hazardous materials should not have any influence on the final placement and configuration of potential roadway improvements for US 287. At the time of the Phase I Environmental Site Assessment (ESA), no recognized environmental conditions were identified within the US 287 study area, and the risk of encountering environmental contamination is low. Furthermore, additional, more detailed environmental investigations do not appear warranted at this time. However, the Phase I ESA should be updated when a subsequent NEPA process is initiated.



### 7.2.12 Additional Resources

The following additional NEPA resource considerations should be developed for potential roadway improvements should federal or CDOT funding be used:

- Land Use Impacts
- Farmland Impacts
- Social Impacts
- Relocation Impacts
- Joint Development
- Considerations Relating to Pedestrians and Cyclists
- Permits
- Visual Impacts
- Energy
- Relationship of Local Short-Term uses versus Long-Term Productivity.
- Irreversible and Irretrievable Commitment of Resources.

### 7.3 Access Control Plan

---

The section of US 287 north of and including Carpenter Road has an ACP that was accepted by Fort Collins and CDOT in 2002. This is basically the Fort Collins section and also includes some unincorporated parts of Larimer County. The US 287 EOS did not result in any changes to the previously approved ACP.

Concurrent with this EOS process, CDOT, Loveland, and Larimer County developed an ACP for the section of US 287 between Carpenter Road and 29th Street, basically the Loveland section, which also includes some unincorporated parts of Larimer County. This ACP is a legal document and is therefore completed and approved in a separate documentation and approval process.

J:\\_Transportation\071860\manage\report\Draft US287 EOS Report.doc



## REFERENCES

---

- Colorado Department of Transportation (CDOT). 2005. Environmental Stewardship Guide. Volume 2. May. <http://www.dot.state.co.us/environmental/StandardsForms/ESGuide5-12-05PrePress.pdf>
- U.S. Environmental Protection Agency (EPA). 2002. Assessment Data for State of Colorado Year 2002. [http://oaspub.epa.gov/waters/w305b\\_report\\_v2.state#assessed\\_waters](http://oaspub.epa.gov/waters/w305b_report_v2.state#assessed_waters)
- Federal Highway Administration (FHWA). 1993. Transportation Decision Making: The Development of Logical Project Termini. <http://environment.fhwa.dot.gov/projdev/tdmtermini.htm>
- City of Fort Collins (Fort Collins). 2004. Land Conservation and Stewardship Master Plan. July 9. <http://www.ci.fort-collins.co.us/naturalareas/pdf/napp-update.pdf>
- Fort Collins. 2005. Fossil Creek Natural Areas Management Plan. April. <http://www.ci.fort-collins.co.us/naturalareas/pdf/fc-plan.pdf>
- Larimer County. 2005. Resource Management Plan for Long View Farm (undated, viewed October 2005). [http://www.co.larimer.co.us/parks/openlands/longview\\_plan.pdf](http://www.co.larimer.co.us/parks/openlands/longview_plan.pdf)
- North Front Range Metropolitan Planning Organization (NFRMPO). 2004. Regional Transportation Plan. <http://www.nfrmpo.org/planning/rtp.asp>
- Colorado Department of Transportation, 2002.
- South college Avenue (US 287) Access Control Plan Update Report Carpenter Road to Swallow Road. <http://fcgov.com/transportationplanning/pdf/scollegel.pdf>
- Colorado department of Transportation, 2006. US 287 Access Control Plan, 29th Street (Loveland) to Carpenter Road (Larimer County).





# US 287

ENVIRONMENTAL OVERVIEW STUDY

---

## APPENDIX

---

### RECOMMENDED ALTERNATIVE CONCEPT PLAN SHEETS

(under separate cover)