



**AGENDA - TRANSPORTATION ADVISORY BOARD**  
**MONDAY, December 9, 2019, 6:00 – 8:00 P.M.**  
**LONGMONT CITY COUNCIL CHAMBERS**  
**350 KIMBARK STREET, LONGMONT, CO 80501**



---

TAB members - please contact Tyler Stamey at (303) 651-8737 or [Tyler.Stamey@longmontcolorado.gov](mailto:Tyler.Stamey@longmontcolorado.gov) if you cannot attend this meeting.

**CALL TO ORDER**

**ROLL CALL**

**APPROVE MINUTES OF PRECEDING MEETING – October 2019 Meeting Minutes \***

**COMMUNICATIONS FROM STAFF**

**PUBLIC INVITED TO BE HEARD**

**ACTION ITEMS**

- 2019 Annual Report (Tyler Stamey) \*
- Continuation of Ride Free Longmont Bus Service recommendation (Phil Greenwald)

**INFORMATION ITEMS**

- 2020 Proposed TAB Work Plan, (Tyler Stamey)\*
- Coffman St Corridor, (Phil Greenwald)\*
- SH 66 Planning & Environmental Linkages Study and SH 66 Access Control Plan, (Phil Greenwald & Tyler Stamey)\*

**COMMENTS FROM BOARD MEMBERS**

**COMMENTS FROM CITY COUNCIL LIAISON**

**INFO ON UPCOMING TRANSPORTATION RELATED MEETINGS**

**ITEMS FOR UPCOMING AGENDAS (Next scheduled meeting is January 13, 2020)**

- 2020 Work Plan

**ADJOURN TAB Meeting**

\*Attachments

---

**IF YOU NEED SPECIAL ASSISTANCE TO ATTEND THIS MEETING, PLEASE CONTACT JANE MADRID AT (303) 651-8309 PRIOR TO THE MEETING TO MAKE ARRANGEMENTS**

**ACTION MINUTES  
TRANSPORTATION ADVISORY BOARD  
October 14, 2019**

**1. CALL TO ORDER**

Vice Chairman Neal Lurie called the October 14, 2019, meeting of the Transportation Advisory Board to order at 6:00p.m., in the City Council Chambers located at 350 Kimbark Street.

**2. ROLL CALL**

Board members present were Sandra Stewart, Courtney Michelle, Neal Lurie, Gary Graca, David Droege, and Jacques Livingston. Board Member Melanie Burgess was absent.

City staff present were Tyler Stamey, Caroline Michael, Jim Angstadt, and Recording Secretary, Jane Madrid. Council Liaison Joan Peck was also present.

**3. APPROVE MINUTES OF PRECEDING MEETING**

**BOARD MEMBER LIVINGSTON MOVED TO APPROVE THE SEPTEMBER 16, 2019, MEETING MINUTES AS WRITTEN. BOARD MEMBER GRACA SECONDED THE MOTION. MOTION PASSES 5-0 WITH VICE CHAIRMAN LURIE ABSTAINING.**

**4. COMMUNICATIONS FROM STAFF**

Mr. Stamey advised the board that staff is working on an application to get federal funds for the quiet zones project. The City is looking for a \$4M match.

The November meeting will be cancelled, there are no action items on the agenda and the meeting falls on the Veterans Day holiday.

Council Member Peck suggested that the board send in a letter of endorsement for the application for the grant funds.

Board Member Livingston asked about a time limit on spending the money and if there are any outcomes that the city is obligated to. Mr. Stamey believes it is five years to spend money and the city will need to track the goals.

**BOARD MEMBER LIVINGSTON MOVED TO SUPPORT THE SUBMITTAL OF A LETTER OF ENDORSEMENT FROM THE TRANSPORTATION ADVISORY BOARD FOR GRANT FUNDING FOR THE QUIET ZONES PROJECT. BOARD MEMBER MICHELLE SECONDED THE MOTION. MOTION PASSES UNANIMOUSLY.**

**5. PUBLIC INVITED TO BE HEARD**

Scott Conlin, 1014 5<sup>th</sup> Ave. Mr. Conlin spoke about two recent vehicle accidents at Gay Street and said there are no stop bars or signage. The bigger issue is the inconsistency in cross traffic and who stops. He said in the crash report the new heat map shows several intersections on Gay

## Transportation Advisory Board

October 14, 2019

Page 2

Street with problems and thinks instead of a table with individual intersections, staff should look at a bigger area.

### 6. ACTION ITEMS

No Action Items.

### 7. INFORMATION ITEMS

- **2014-2018 Crash Report\*, Caroline Michael, Tyler Stamey**

Annual report with 5 years of crash data. Staff uses the report to try to find patterns and as a benchmarking tool.

Caroline Michael reviewed the report with the board.

- Upward trend in crashes since 2012.
- Large dip in numbers attributed to the recession and less people on the road during that time.
- Crashes with injuries dropped in 2018.
- 60% at intersections/40% at non-intersections (includes commercial driveways).
- 34% of all crashes at class 1A intersections (signalized 25,000+ vehicles).
- PM peak has the highest percentage of crashes, with most happening on Fridays.
- The month of December has the highest number of crashes.
- Sixth year in a row for increase in DUI crashes, 66% of those are 39 and under age group.
- Alcohol is the predominant DUI, but marijuana and Rx are increasing. Large number of these are males.
- Bicycle, motorcycle, and pedestrian crashes up over the last few years.
- Younger population involved in more of the vulnerable road crashes and are most often men.
- Longmont sits in the middle of crash rates as compared with other Colorado cities.
- Crashes involved younger drivers and older drivers has evened out over the years.
- Number one high crash intersection is Hwy 119 and Main Street.

Board Member Droege asked what happened in 2013 when crashes started going up. Mr. Stamey feels the data reflects the recession and the time when the rates started going back up at the end of the recession. It was an upward trend both statewide and nationally.

Council Member Peck asked if numbers are vehicle crashes only. Mr. Stamey said this is all crashes. Council Member Peck asked if there is any data on more people biking to work since 2014. Mr. Stamey said there is no good way to track bicycle trips at this time, but it seems like there are more bicycles on the road now.

Board Member Stewart asked if red light crashes are tracked. Mr. Stamey said yes.

Board Member Stewart asked for more information about the injury types listed in the report. Ms. Michael explained the differences in the types of injury accidents.

## Transportation Advisory Board

October 14, 2019

Page 3

Board Member Livingston asked if we are seeing more DUI's and following the same percentage growth that is seen statewide. Mr. Stamey said we are following the state trends in seeing more DUI's.

Board Member Droege said it would be helpful to look at injury crashes. Mr. Stamey said that data source is harder to get, the fatal crash data is more readily available.

Council Member Peck commented that it would be interesting to compare cities of similar populations to see what their public transportation looks like.

Board Member Livingston would like to see accomplishments with everything done that involved the multimodal system.

Officer Jessen commented that it is hard to prove distracted driving unless the party admits to it. Legislation has not made a big difference in issuing tickets because there must be another moving violation associated with the distracted driving offense.

Mr. Stamey said safety is looked at in all projects. If an intersection does not meet traffic signal warrants, other safety measures can be put in place.

Board Member Droege asked if there is a log or index that keeps track of changes to intersections. Mr. Stamey said this report would be the best resource for that information. He feels this report could also show changes to intersections that could be attributed to new data in the report.

Mr. Stamey commented that the signal at Alpine and Mtn View is in the proposed budget for 2020, but construction will probably not happen until the end of the school year.

Next steps:

- Continue with engineering analysis. Solutions take time to program into the budget.
- Making it safer for pedestrians by turning on walk signals before the light turns green for vehicles.
- Adding stop bars where needed.
- Education on safety.
- Safe routes to school.

Betty Perrill spoke about her concerns with the Mountain View and Alpine intersection. Feels there is a big problem with speeding and wonders what is going to happen. Mr. Stamey said improvements have been made along Mountain View Ave to improve safety.

Board Member Graca commented that he is a six year resident of the city and is impressed with what the City has done to improve safety and maintenance on the roads. He is curious about what happens with the data at a higher level. Mr. Stamey is not sure a lot is going on at the next level, but it might be a good time to start that discussion.

- **Traffic Safety, Colin Jessen – Longmont Police Department**

Officer Jessen shared the city's Traffic Safety presentation with the board.

- **Neighborhood Traffic Mitigation\*, Caroline Michael, Tyler Stamey**
  - Current version adopted November 2016
  - Two part program - Citizen or City initiated projects
  - Application process for requests
  - Ranking system to determine what projects will take priority
  - Collaborative process with neighborhoods when changes are being proposed

Vice Chairperson Lurie asked if there is a backlog of streets being worked on. Mr. Stamey said there is a queue for collector streets the city wants to work on, but ballpark is three to four per year through the program. The cost of the program is roughly \$75,000 per year.

Board Member Livingston asked if the citizen-initiated program is backlogged. Ms. Michael states applications are rare, phone calls are more common.

Board Member Droege asked about the ability to enlist citizen volunteer patrol. Mr. Stamey said in the past the city would loan out a radar gun, but it was not returned and it was not replaced. If the program is updated it might look different. Board Member Droege wonders if a citizen patrol vehicle with lights and badge could be placed on a street. Mr. Stamey will need to review the role of that group. Officer Jessen will get Tyler in contact with the coordinator of the program.

Council Member Peck thanked staff for the information. She asked how to get the information out to the high impact age groups. Mr. Stamey states the city is working on restarting the traffic safety class, as well as discussing strategies and partnering with the schools.

## **8. COMMENTS FROM BOARD MEMBERS**

Board Member Stewart thanked staff for the information. She mentioned a bicycle friendly driver course coming up in Longmont on December 11. She also appreciates the information about the neighborhood traffic mitigation program.

Board Member Michelle thanked staff for the reports. She asked about posting the meetings in the paper.

Board Member Droege enjoyed the report. He commented that a heat map of cross correlations is something to look into.

Board Member Livingston said it is good to see Mountain View and Alpine in the data. He thanked staff for the information and said we should feel lucky we have this type of data.

Vice Chairman Lurie asked about the timing of road diet on Sunset between Nelson and 119. Mr. Stamey said it is being looked at as a 2020 project.

Board Member Stewart asked about ride free Longmont and RTD in Longmont. Council Member Peck stated that RTD upped the percentage they are asking the city to pay. The City Manager asked for something better and it is now with the finance department. She expects something to come out in January.

**9. COMMENTS FROM CITY COUNCIL LIAISON**

Council Member Peck thanked staff for their dedication to the city and the thorough report.

**10. INFO ON UPCOMING TRANSPORTATION RELATED MEETINGS**

Nothing at this time.

**11. ITEMS FOR UPCOMING AGENDAS (Next scheduled meeting is November 11, 2019)**

- State Highway 66 Planning and Environmental Linkage (PEL) Study

**A MOTION TO ADJOURN WAS MADE BY BOARD MEMBER STEWART. BOARD MEMBER DROEGE SECONDED THE MOTION. NO ONE WAS OPPOSED. THE MEETING WAS ADJOURNED AT 7:59 P.M.**

Respectfully Submitted,

TAB Chairperson/Vice Chairperson  
/jm

# TRANSPORTATION ADVISORY BOARD COMMUNICATION

---



**Meeting Date:** December 9, 2019

**Subject:** 2019 TAB Annual Report

**Type of Item:** Action Item                      **Time for Presentation:** 10 minutes

**Presented By:** Tyler Stamey, Transportation Engineering Administrator

**Suggested Action:** Approval of 2019 TAB Annual Report

---

The Transportation Advisory Board (TAB) was established in the 1970's and codified in 1986. Chapter 2.90 of the City Code establishes the powers and duties of the Board, which include the duties to make recommendations to City Council as well as to the Planning and Zoning Commission relating to matters concerning the future transportation system and changes to the existing system. Additionally, the Board has the duty to make recommendations on transportation-related projects, the 5-year CIP (transportation related), City street standards, annual highway requests, the annual TSM Program, as well as other transportation related items.

In 2019, the TAB held ten regular meetings (including December 19, 2019).

The following annual work activities were brought to the Board in 2019:

- **2019 Capital Improvement Program (CIP)** – Staff presentation and discussion of current transportation projects
- **Work Plan and Annual Report** – Review and approval for submission to Council
- **Annual Board Elections** of new Chair and Vice-Chair
- **Enhanced Multi Use Corridors (EMUCs)** – Staff presented updates on the implementation of EMUC's.
- **Bike Lane Trial Project** – staff presented information on the bike lane trial project conducted in the south part of Longmont.
- **SH 119 Bus Rapid Transit (BRT)** – Staff presented information and updates on this RTD study
- **RTD Update** – RTD staff updated the Board on the current and planned transit activities in Longmont and regionally.
- **Neighborhood Traffic Mitigation Program** – Staff presented information about the program.
- **Vision Zero** – Staff shared information on Vision Zero with the board and ultimately partnered with CDOT sharing a goal to move toward zero deaths on our roadways.
- **Ballot Issues** – Staff presented information on transportation ballot issues on the November general election ballot.
- **Design Standards** – staff presented an update on the status of new City Design Standards and Construction Specifications.

The following major work items were brought to the Board in 2019:

- **Quiet Zones** – Staff presented information about Quiet Zones and grant opportunities to the Board. The Board provided input on phasing for implementing Quiet Zones.
- **Proposed 2020 - 2024 CIP** – Staff presentation, Board review and recommendations to Council. Staff also asked the Board for input into the 2020 budget
- **2014-2018 High Crash Location Summary** – City staff presentation and discussion with Board
- **Main St Corridor Study** – staff presentation and discussion with Board.
- **Southwest Longmont Operations Study** – Staff presented information on this study and asked the Board to recommend approval of the study to Council.

Staff is requesting that the Board review, discuss, and approve the 2019 Annual Report.

#### **ATTACHMENT**

- 2019 TAB Work Plan

## 2019 Proposed TAB Work Plan & Schedule

Updated 20 July 2019

Work Plan Items	Timeframe / Quarter	Comments
<b>1. Regional (RTD, DRCOG, CDOT, County, Other Agencies &amp; Jurisdictions)</b>		
Boulder County	ongoing	Monitor Countywide Transportation Sales Tax
CDOT	ongoing	Monitor progress of various regional studies involving state highways, regional bike & transit activities
	2019	SH 66 Planning & Environmental Linkage (PEL) Study
DRCOG	ongoing	Regional Transportation Plan updates
	every 4th year (2019)	Transportation Improvement Program (TIP) updates/amendments
North Front Range (FLEX Bus/Transfort)	ongoing	Continue to improve transit service between Longmont and North Front Range communities
RTD Transit	ongoing	FasTracks planning activities; continue to monitor & pursue rail service to Longmont
	ongoing	1st & Main Transit Station/TOD planning & construction with \$17M FasTracks dollars
	2019	SH 119 BRT Study, Boulder to Longmont (RTD)
	2019	US 287 BRT Study (RTD)
	ongoing	Review local and regional service improvements, including impacts of free local fares & route improvements through ridership data
	ongoing	Evaluate system & potential improvements for Local, Regional, & Call n Ride service; review ridership data on regular basis, pursue Longmont to Airport service
<b>2. Envision Longmont and Transportation Resources Implementation Plan (Supplement)</b>		
North Main Corridor Study	2019	Focused Land Use and Transportation study of North Main Street corridor
Enhanced Multi-use Corridor Plan	2019	Projects implemented in 2019
Nelson Road / Hover Street / Ken Pratt Boulevard Area Study	2019	Evaluate Transportation Needs in this Sub-Area
Comp Plan / Land Use Amendments	ongoing	Review requests - transportation related impacts
<b>3. Capital Improvement Program (CIP)</b>		
Candidate Projects for 2020-2024 Capital Improvement Program (CIP)	2nd Q	Annual review of proposed 5 Year CIP, provide recommendations to Council
Current 2019 CIP projects	2nd Q	Annual Review of CIP projects (roadway, bicycle, pedestrian, Transportation System Management (TSM), Street Rehabilitation, other)
Pike Rd improvements	1st Q	Public process January/February 2019
Projects and Studies	as needed	Review as needed
Bicycle and Pedestrian	as needed	Review issues & potential improvements as needed
<b>4. Other</b>		
TAB Work Plan & Annual Report	1st Q & 3rd Q	Work Plan for new year, previous year Annual Report
2020 Budget	1st Q	TAB input for 2020 budget items, budget vs actual for previous years
Bicycle Code	ongoing	Review of current bicycle code & traffic laws
Street Fund Sales Tax	ongoing	Explore making street fund sales tax permanent
Crash Report	3rd Q	Discuss Crash Report and safety issues
Quiet Zones	as needed	public process, priorotization & design, funding discussion
Traffic Safety Fund	2nd Q	Annual program review
Annual Meeting	3rd Q	Elect officers after Council appoints members
City Design Standards	as needed	Review when updated by City staff
Overall City Wide Bike/Ped Plan	as needed	
St Vrain Greenway Updates	as needed	Closure/detour updates as project progresses
EV Infrastructure	as needed	
Operating Budget - Local Bus Fare Buyout	as needed	

# TRANSPORTATION ADVISORY BOARD

---



**Meeting Date:** December 9, 2019

**Subject:** Ride Free Longmont

**Type of Item:** Action                      **Time for Presentation:** 10 minutes

**Presented By:** Phil Greenwald, Transportation Planning Manager; 303-651-8335

**Suggested Action:** Recommend approval to City Council

---

## **BACKGROUND**

The "Ride Free" program provides all riders of the local Regional Transportation District (RTD) bus system (the "300 series") to board and ride a one-way bus trip without payment.

This year, the City of Longmont and RTD are proposing the agreement and costs be set for this service for the next 2 years (2020 and 2021).

The proposed cost for this service in 2020 will be \$485,137 and \$487,265 in 2021. These costs do not include Access-a-Ride costs that are billed back to the City based on usage during the year at \$5 per trip originating in Longmont.

## **DISCUSSION**

The "Ride Free" program has been operating since July 2014 and provides a free one-way bus ride to any patron of the local Regional Transportation District (RTD) bus system. This system includes the 323, 324, 326, and 327 bus routes in the City. Riders may also request transfers on the local bus routes to regional bus routes serving Boulder and Denver.

Ridership on the local buses has increased by almost 300-percent on weekdays since the Ride Free program began in Summer 2014. The table below represents annual boardings per year on the 300-series buses in Longmont and the percent increase/decrease from the previous year.

<u>Year</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2013-18</u>
Boardings/yr	156,863	237,254	313,692	554,207	616,141	613,280	--
% +/-		+51%	+32%	+76%	+11%	<-1%	+291%

In the last year, the City of Longmont and RTD have come to an agreement on the operation and cost for the Ride Free Longmont service over the next 2 years (2020 and 2021). The proposed cost for this service in 2020 will be \$485,137 and \$487,265 in 2021. These costs do not include Access-a-Ride costs that are billed back to the City based on usage during the year at \$5 per trip originating in Longmont. In 2019, the City paid approximately \$32,000 for

trips on the Access-a-Ride. Ridership on the local buses has increased by 300-percent on weekdays since the Ride Free program began in Summer 2014.

**ACTION**

Staff is requesting that the Transportation Advisory Board recommend approval of the Ride Free Longmont agreement between Longmont and RTD for 2020 and 2021 to the City Council.

## TRANSPORTATION ADVISORY BOARD COMMUNICATION

---



**Meeting Date:** December 9, 2019

**Subject:** 2020 Draft Work Program

**Type of Item:** Information                      **Time for Presentation:** 20 minutes

**Presented By:** Tyler Stamey, Transportation Engineering Administrator  
Phil Greenwald, Transportation Planning Manager

**Suggested Action:** Information Only

---

Attached is the proposed 2020 TAB Work Program. The proposed 2020 Work Program includes several items that are brought to the TAB on a regular basis, as well as items we have heard requested from the board throughout the year. As always, this is not a hard and fast list; new topics are usually added during the year, and a few listed topics end up not being addressed during the year.

Staff is requesting that the Board review, discuss and provide comments on the 2020 Work Plan. Please provide any comments on the proposed work plan by January 6, 2020, so that updates can be incorporated in time for discussion during our January 13 meeting in which staff will be asking the board to take action on the work plan.

The following are attached:

- Proposed 2020 Work Plan

## 2020 Proposed TAB Work Plan & Schedule

Updated 4 Dec 2020

Work Plan Items	Timeframe / Quarter	Comments
<b>1. Regional (RTD, DRCOG, CDOT, County, Other Agencies &amp; Jurisdictions)</b>		
Boulder County	ongoing	Monitor Countywide Transportation Sales Tax
CDOT	ongoing	Monitor progress of various regional studies involving state highways, regional bike & transit activities
	2020	SH 52 Planning & Environmental Linkage (PEL) Study
DRCOG	ongoing	Regional Transportation Plan updates
	Ongoing	Transportation Improvement Program (TIP) updates/amendments, Project Status updates
North Front Range (FLEX Bus/Transfort)	ongoing	Continue to improve transit service between Longmont and North Front Range communities
RTD Transit	ongoing	FasTracks planning activities; continue to monitor & pursue rail service to Longmont
	ongoing	1st & Main Transit Station/TOD planning & construction with \$17M FasTracks dollars
	2020	SH 119 BRT Study, Boulder to Longmont (RTD)
	2020	US 287 BRT Study (RTD)
	ongoing	Review local and regional service improvements, including impacts of free local fares & route improvements through ridership data
	ongoing	Evaluate system & potential improvements for Local, Regional, & Call n Ride service; review ridership data on regular basis, pursue Longmont to Airport service
<b>2. Envision Longmont and Transportation Resources Implementation Plan (Supplement)</b>		
Enhanced Multi-use Corridor Plan	2020	Projects implemented in 2019 & planned for 2020
Nelson Road / Hover Street / Ken Pratt Boulevard Area Study	2019	Evaluate Transportation Needs in this Sub-Area
Comp Plan / Land Use Amendments	ongoing	Review requests - transportation related impacts
Roadway Plan Update	3rd Q	Discuss needed updates to roadway plan
<b>3. Capital Improvement Program (CIP)</b>		
Candidate Projects for 2021-2025 Capital Improvement Program (CIP)	2nd Q	Annual review of proposed 5 Year CIP, provide recommendations to Council
Bond Projects	1st Q	Discuss transportation projects with potential to bond
Current 2020 CIP projects	2nd Q	Annual Review of CIP projects (roadway, bicycle, pedestrian, Transportation System Management (TSM), Street Rehabilitation, other)
Coffman St	as needed	Bus lanes
Projects and Studies	as needed	Review as needed
Bicycle and Pedestrian	as needed	Review issues & potential improvements as needed
<b>4. Other</b>		
TAB Work Plan & Annual Report	1st Q & 3rd Q	Work Plan for new year, previous year Annual Report
2021 Budget	1st Q	TAB input for 2021 budget items
Bicycle Code	ongoing	Review of current bicycle code & traffic laws
Street Fund Sales Tax	ongoing	Explore making street fund sales tax permanent
Crash Report	3rd Q	Discuss Crash Report and safety issues
Quiet Zones	as needed	Design, construction, other issues
Traffic Safety Fund	2nd Q	Annual program review
Annual Meeting	3rd Q	Elect officers after Council appoints members
City Design Standards	as needed	Review when updated by City staff
Overall City Wide Bike/Ped Plan	as needed	
St Vrain Greenway Updates	as needed	Closure/detour updates as project progresses
EV Infrastructure	as needed	
Operating Budget - Local Bus Fare Buyout	as needed	

# TRANSPORTATION ADVISORY BOARD

---



**Meeting Date:** December 9th, 2019

**Subject:** Coffman Street Corridor Update

**Type of Item:** Information Item      **Time for Presentation:** 20 minutes

**Presented By:** Phil Greenwald, Transportation Planning Manager, 303-651-8335

**Suggested Action:** Information and comment.

---

## **BACKGROUND**

As part of the 2018 Enhanced Multiuse Corridor plan, a new vision for Coffman Street between 1<sup>st</sup> and 9<sup>th</sup> Avenues was launched. As a connection between the existing transit center at 8<sup>th</sup> and Coffman, and the new transit hub at 1<sup>st</sup> and Main, the Coffman Street Corridor offers a unique opportunity to provide a robust multi-modal corridor connecting through the historic Old Town of Longmont.

The purpose for this new multiuse/multimodal corridor has many facets:

- To move regional buses from a high volume, constricted corridor along Main Street to a separated bus lane (away from parked vehicles, people on bicycles and those using sidewalks) on the Coffman corridor.
- To create a separated bicycle facility, linking the Saint Vrain Greenway corridor to the central business district of downtown, as well as the new/current transit facilities.
- To provide wider, safer places for people to walk or wheelchair in the downtown and in support of transit use and convenience.
- To enhance the Coffman Street corridor providing a new opportunities for business and residents to access transportation services and connections to

An outreach meeting for stakeholders along this corridor is planned for 8:30am meeting at the Boulder County HUB (515 Coffman St.) on Tuesday, December 17<sup>th</sup>.

## **ATTACHMENTS**

Coffman Street Corridor One-Page Handout

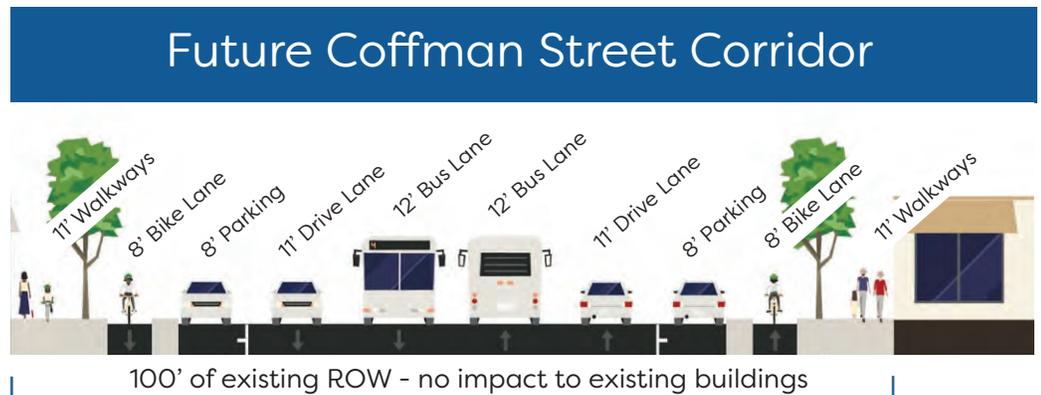
# City of Longmont Coffman Street Corridor Project



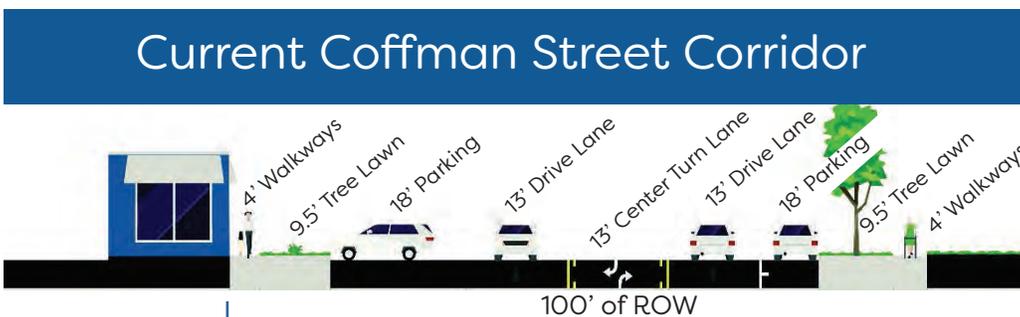
## Exciting new changes that will improve transportation are coming to Coffman Street

As part of the City's Envision Longmont Plan and the utilization of recently awarded grant funding, the City will begin construction on this Enhanced Multi-Use Corridor in 2023. The project will focus on Coffman Street between 1<sup>st</sup> and 9<sup>th</sup> Avenue and is expected to open to the public at the same time Bus Rapid Transit (BRT) starts between Longmont and Boulder.

The proposed Enhanced Multi-Use Corridor features wider sidewalks, separated bike lanes and dedicated bus lanes, allowing for safer travel options while reducing traffic congestion on Main Street. The proposed changes use the same 100' of existing Right of Way (ROW) and will have no impact to existing property or buildings.



The current corridor lacks a dedicated bike lane and sufficient walkways. Bus traffic causes safety issues and delays when traveling and stopping along Main Street.



## Funding + Timeline

- 2018: Enhanced Multi-Use Corridor Plan Completed
- 2019: \$6.9 M Design & Construction Grant Awarded
- 2020: Begin Final Design
- 2023: Start Construction Project

### New Coffman Street Corridor



### What exactly is an EMUC?

Enhanced Multi-Use Corridors (EMUC) are street corridors that provide safe, comfortable, low-stress bicycle and pedestrian facilities, much like multi-use trails, to provide connectivity within the City's trail system and multi-modal transportation network.



### Why was Coffman Street chosen for this project?

Coffman Street was identified as a priority area based on a number of different factors, including public feedback. Prior to implementing an EMUC, the City conducts parking utilization studies, traffic counts and analyzes intersection approach treatments. Public meetings were held in early 2019 to review draft concepts and gather community input on the full EMUC plan. Public meetings specific to Coffman Street are planned throughout the design and construction phases of the project.

### What do I need to do to prepare?

The short answer - stay engaged! As the project develops, the City will keep residents and businesses that are affected by the project up to date with information regarding design and construction concepts. Prior to construction, the team will accept and review public comment to ensure the project results in the best transportation experience for all, especially those living and working in the Coffman Street corridor.

### What if I have questions?

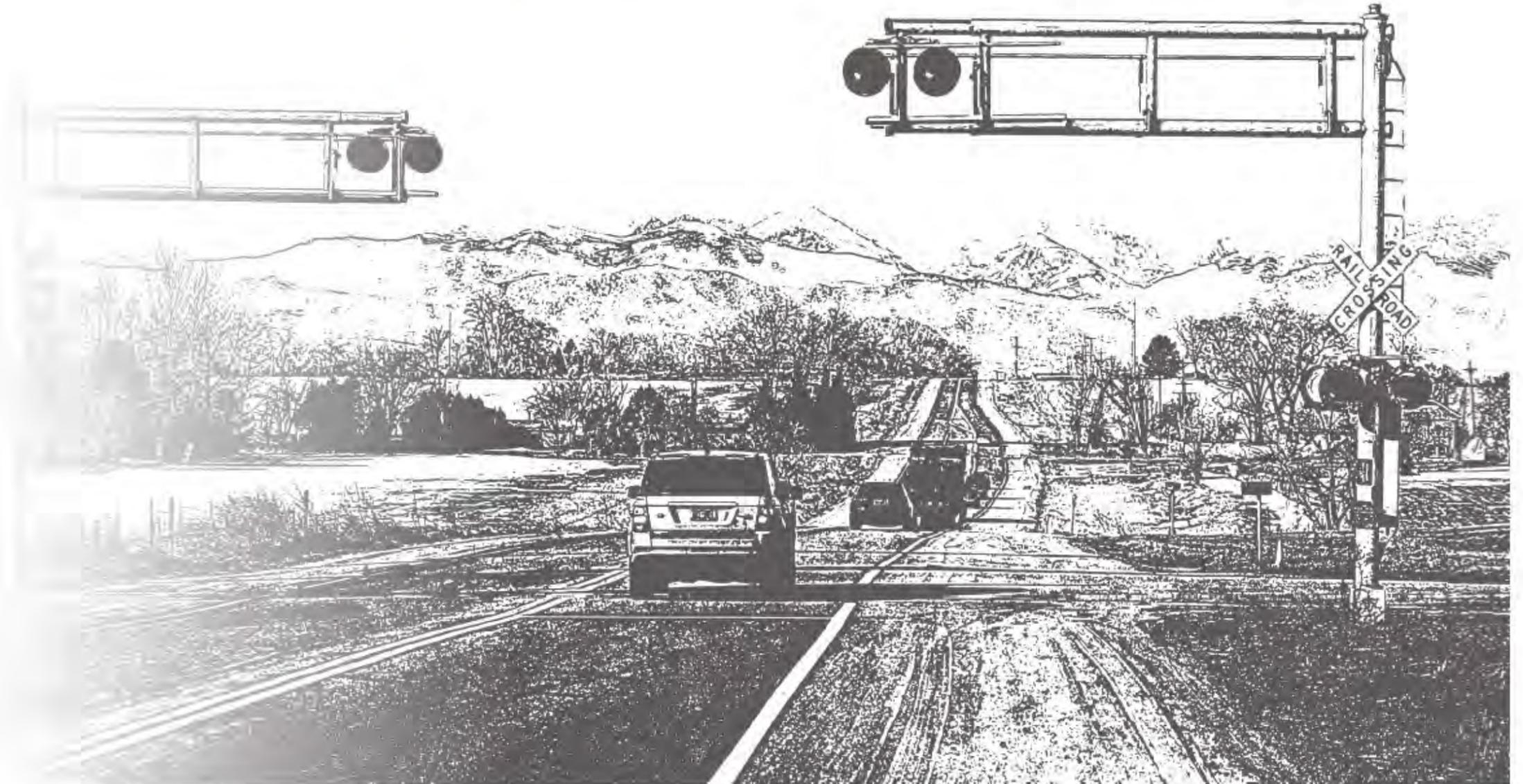
Additional information on this project can be found at [bit.ly/longmontemuc](https://bit.ly/longmontemuc). For more information, please contact Phil Greenwald, Transportation Planning Manager for the City of Longmont, at [phil.greenwald@longmontcolorado.gov](mailto:phil.greenwald@longmontcolorado.gov) or (303) 651-8335.

# SH 66

## Planning and Environmental Linkages Study | Report

DRAFT

October 2019



**COLORADO**

Department of Transportation

This page intentionally left blank.

# State Highway 66 Planning and Environmental Linkages Study Report

DRAFT

Prepared for:



Prepared by:

Felsburg Holt & Ullevig  
6300 South Syracuse Way, Suite 600  
Centennial, CO 80111  
303.721.1440

In partnership with:

Atkins, member of the SNC-Lavalin Group  
7604 Technology Way, Suite 400  
Denver, Colorado 80237

FHU Reference No. 115255-01  
October 2019

This page intentionally left blank.



## Table of Contents

<b>1. Introduction, Purpose, and Need</b> .....	<b>2</b>
What is a PEL study?.....	2
What is an ACP?.....	2
What is a purpose and need?.....	2
How is purpose and need different from goals and objectives?.....	2
<b>2. Alternatives Development and Screening and ACP Development</b> .....	<b>4</b>
How were alternatives developed?.....	4
How were the alternatives screened? .....	4
How did this PEL incorporate bicycle, pedestrian, and transit facility considerations?.....	12
What is a No Action Alternative? .....	14
<b>3. PEL Recommendations, Right of Way Preservation, and Prioritization of Improvements</b> .....	<b>22</b>
Section 1: McConnell Drive to 87th Street .....	24
Section 2: 87th Street to County Line Road .....	26
Section 3: County Line Road to 3rd Street (WCR 7) .....	28
Section 4: 3rd Street (WCR 7) to Weld County Road 11.....	30
Section 5: Weld County Road 11 to Weld County Road 19.....	32
<b>4. Affected Environment, Environmental Consequences, and Mitigation Strategies</b> .....	<b>34</b>
How is PEL environmental documentation used?.....	34
How were environmental impacts analyzed in this PEL Study? .....	34
How are cumulative impacts included in PELs? .....	35
<b>5. Risk and Resiliency</b> .....	<b>38</b>
What is resiliency?.....	38
What are physical threats? .....	38
What are operational threats?.....	41
<b>6. Agency Coordination and Public Involvement</b> .....	<b>44</b>
How was agency coordination and public outreach managed during the PEL process? .....	44
How were individuals and members of the public engaged during the PEL process? .....	45
<b>7. Additional Next Steps</b> .....	<b>46</b>
How is CDOT thinking about transportation technology for SH 66?.....	46
<b>8. References</b> .....	<b>47</b>

## Appendices

Appendix A.	FHWA Acceptance Letter
Appendix B.	FHWA PEL Questionnaire
Appendix C.	Corridor Conditions Report
Appendix D.	Purpose and Need Overview
Appendix E.	Alternative Development and Screening Documentation
Appendix F.	Agency Coordination Summary
Appendix G.	Public Involvement Summary
Appendix H.	Access Control Plan Documentation
Appendix I.	Right of Way Preservation Recommendations
Appendix J.	Utilities Documentation
Appendix K.	Physical Threats Risk and Resiliency Assessment

## List of Figures

Figure 1.	Study Corridor Location .....	2
Figure 2.	PEL Study Area .....	3
Figure 3.	Alternatives Evaluation Process .....	4
Figure 4.	Alternative Development and Screening Process .....	5
Figure 5.	SH 66 PEL Corridor Sections.....	6
Figure 6.	Operational Classifications Overview.....	6
Figure 7.	Existing Conditions and Level 2 Screening Recommendations .....	7
Figure 8.	Existing Conditions and Level 2 Screening Corridor Visualizations ..	8
Figure 9.	Reversible Lane Concept Between SH 66/Hover and SH 66/US 287 – Not Carried Forward .....	10
Figure 10.	Hybrid Option Concept of a Split Intersection/Diamond Interchange at SH 66/WCR 9.5 – PEL Proposed Option.....	10
Figure 11.	Access Road with Advisory Shoulders Cross Section .....	12
Figure 12.	Level 3 Screening Bicycle, Pedestrian, and Transit Recommendations.....	13
Figure 13.	Level 3 Screening Roadway Maps.....	15
Figure 14.	ROW Preservation Footprint Overview .....	22
Figure 15.	Physical Threat Examples .....	38
Figure 16.	SH 66 PEL Risk & Resiliency Physical Assessment Process .....	39
Figure 17.	SH 66 Assets and Physical Threats Overview .....	40
Figure 18.	Operational Threat Factors .....	41
Figure 19.	Technology Examples for SH 66 .....	46

## List of Tables

Table 1.	2040 No Action Fiscally-Constrained Projects Impacting SH 66 .....	14
Table 2.	Potential Environmental Impacts.....	36

## List of Abbreviations and Acronyms

ACP	Access Control Plan
ARWAS	access road with advisory shoulders
AST	above ground storage tank
BRT	bus rapid transit
CAP-X	Capacity Analysis for Planning of Junctions
CatEx	Categorical Exclusion
CDOT	Colorado Department of Transportation
CDPHE	Colorado Department of Public Health and Environment
CFR	Code of Federal Regulations
CPW	Colorado Parks and Wildlife
CV/AV	connected vehicle and automated vehicle
DRCOG	Denver Regional Council of Governments
EA	Environmental Assessment
EC	Executive Committee
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FHU	Felsburg Holt & Ullevig
FHWA	Federal Highway Administration
IGA	intergovernmental agreement
LOS	level of service
LUST	leaking underground storage tank
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
PEL	Planning and Environmental Linkages
RIRO	right in/right out
ROW	right of way
RTD	Regional Transportation District
SEMS	Superfund Enterprise Management System
SH 66	State Highway 66
SHPO	State Historic Preservation Office
SPUI	single point urban interchange
TAC	Technical Advisory Committee
TAZ	traffic analysis zone
T&E	threatened and endangered
TIP	Transportation Improvement Program
USACE	US Army Corps of Engineers
USFWS	US Fish and Wildlife Service
UST	underground storage tank
WCR	Weld County Road



## Instructions for Reviewing This PEL Report

This Planning and Environmental Linkages (PEL) Report was completed with the goal of highlighting key information in a concise and useful manner. As such, this report follows a planning document format. Each section includes key background and findings from the State Highway 66 (SH 66) PEL process. The appendices include detailed content for further examination. Some graphical icons are included to show a preview of the respective appendix.

## Study Report Summary and PEL Questionnaire Highlights

Federal Highway Administration (FHWA) developed a PEL questionnaire, which is intended to summarize the planning process and ease the transition from this planning study to National Environmental Policy Act (NEPA) analysis. This questionnaire is consistent with 23 Code of Federal Regulations (CFR) 450 (planning regulations) and other FHWA policy on the PEL process. The Colorado Department of Transportation (CDOT) has incorporated key components of the PEL questionnaire as an introductory summary of the SH 66 PEL. The complete questionnaire is available in **Appendix B**.

### SH 66 PEL Background

- ▶ What is the name of the PEL document and other identifying project information?
  - SH 66 Planning and Environmental Linkages Study Report
  - CDOT Project No: STA 0661-014
  - CDOT Project Code: 21003
- ▶ Who is the lead agency for the study?
  - CDOT
- ▶ Who was the sponsor of the PEL study?
  - CDOT, with funding support from Denver Regional Council of Governments (DRCOG)
- ▶ Provide a description of the existing transportation corridor (**Chapter 1**):
  - **Project limits** – McConnell Drive in Lyons to Weld County Road (WCR) 19
  - **Length of study corridor** – 20 miles
  - **Modes** – Includes vehicular, bicycle, pedestrian, bus transit, and freight rail facilities
  - **# Lanes** – Generally two lanes (undeveloped areas); four to five lanes near Interstate 25 (I-25), United States Highway 287 (US 287), and United States Highway 36 (US 36)
  - **Shoulders** – Widths vary widely; depending on classification, between 4 to 12 feet.
  - **Access control** – Not currently a limited access highway. Includes many uncontrolled accesses. An Access Control Plan (ACP) has been developed in parallel with this PEL study.
  - **Surrounding environment** – Includes a mix of suburban development and open space in Boulder County (western limits) and a mix of suburban development and agricultural uses in Weld County (eastern limits).

### SH 66 PEL Process Overview

- ▶ Did the Study follow the FHWA PEL Process?
  - Yes, this PEL study followed FHWA's process, according to [CDOT's PEL Handbook](#) (2016).
- ▶ Provide a brief chronology of the planning activities (PEL study) including the year(s) the studies were conducted.
  - Study began – October 2016
  - Purpose and Need – January 2017 through September 2017
  - Public Open House Series #1 – April 2017
  - Final Corridor Conditions Report – September 2017
  - Developed Risk and Resiliency (R&R) PEL Process – August 2017 through July 2018
  - Public Open House Series #2 – April 2019
  - Draft Access Control Plan (ACP) Public Open House – July 2019
  - Public Open House Series #3 – September 2019
  - Alternatives Development and Screening complete – September 2019
  - Draft PEL and ACP Reports available – October 2019
  - Final ACP Report available – November 2019
  - Final PEL Report available – November 2019
  - Study concluded – November 2019
- ▶ What was the scope of the PEL study and the reason for doing it (**Chapter 1**)?
  - To address and prioritize safety, mobility, and access needs
  - To promote efficient and cost-effective solutions and reduce delays in project implementation
  - To understand community context, where sensitive environmental resources are located, and how to make SH 66 more resilient
- ▶ What types of alternatives were evaluated during the SH 66 PEL (**Chapter 2**)?
  - Roadway options that would improve safety, mobility, and access, such as highway classification and capacity and intersection improvements
  - Bicycle, pedestrian, and transit options that would improve safety and mobility
- ▶ Which alternatives were recommended (**Chapter 3**)?
  - This report summarizes and prioritizes safety, mobility, and access options carried forward to establish a right of way (ROW) preservation footprint.
  - The ROW preservation footprint is considered the collective footprint of all PEL proposed options that are recommended to be carried forward.
  - This footprint is intended to inform decision-making at the state and local levels in terms of preserving land and making decisions that do not preclude future transportation improvements identified in this PEL study.
- ▶ What are the environmental issues that need to be considered during NEPA (**Chapter 4**)?
  - **Likely resources:** Floodplains and floodways; wetlands and other waters of the US; threatened and endangered (T&E) species, species of special concern, migratory birds and Eagles; park/trail/open space resources and wildlife/waterfowl refuges; utilities; traffic noise; hazardous materials; environmental justice; visual resources; and historic resources
  - **Other possibilities:** Paleontology, archaeology, farmlands, and air quality

### SH 66 Study Team

- ▶ Who was included on the study team?
  - **FHWA:** Tricia Sergeson (*Transportation Specialist*); Brian Dabling (*Region 4 (R4) Area Engineer/ROW Program Manager*)
  - **CDOT Project Management Team (PMT):** James Zufall (*Project Manager*); Abra Geissler and Brian Varrella (*Resident Engineers*); Jim Eussen (*R4 Planning and Environmental Manager*); Karen Schneiders (*Local Agency Environmental and Planning Manager*); Lindsay Edgar and Sean Brewer (*Statewide PEL Managers*); Tim Bilobran (*R4 Permits Manager*)
  - **Consultant Team:** Felsburg Holt & Ullevig (FHU), Atkins, Goodbee & Associates, and All Traffic Data
  - **Technical Advisory Committee (TAC):** CDOT PMT Members; FHWA; Joe Kubala (Town of Lyons); Paul Glasgow (Town of Lyons); George Gerstle (Boulder County); Jeffery Maxwell (Boulder County); Scott McCarey (Boulder County); Phil Greenwald (City of Longmont); Tyler Stamey (City of Longmont); Jim Angstadt (City of Longmont); Jim Flesher (Weld County); Dawn Anderson (Weld County); Everett Bacon (Weld County); Helen Migchelbrink (Town of Mead); Erika Rasmussen (Town of Mead); Dawn Adams (Town of Mead); Chris Kennedy (Town of Mead); Julie Pasillas (City of Firestone); David Lindsay (City of Firestone); Paula Mehle (City of Firestone); Steve Cook (DRCOG); Nataly Handlos (RTD); Consultant Team.
  - **Executive Committee (EC):** CDOT PMT Members; FHWA; Heather Paddock (CDOT R4); Johnny Olson (CDOT R4); Keith Sheaffer (CDOT R4); Connie Sullivan (Town of Lyons); Victoria Simonsen (Town of Lyons); Deb Gardner (Boulder County); Jeff Moore (City of Longmont); Scott James (Weld County); Elizabeth Relford (Weld County); Julie Cozad (Weld County); George Heath (Town of Firestone); Colleen Whitlow (Town of Mead); Judy Lubow (RTD); Consultant Team.
- ▶ How did the Study meet each of the PEL Coordination Points identified in 23 USC 168?
  - FHWA points are summarized below.
    - March 16, 2017 – **Coordination Point # 1:** Reason for the Study and Desired Outcomes Meeting
    - June 19, 2017 – **Coordination Point # 2:** Purpose and Need, Goals and Objectives plus Corridor Conditions Report approval by email
    - December 12, 2018 – **Coordination Point #3:** Alternatives Development and Screening Review email coordination from FHWA for Level 2/Level 3
    - May 30, 2019 – **Coordination Points #3 and #4:** Alternatives Development and Screening Outcomes and PEL Documentation Next Steps Meeting
    - July 26, 2019, and August 16, 2019 – **Coordination Points #3 and #4:** Alternatives Development and Screening Outcomes and PEL Documentation Next Steps Correspondence by email
  - Further FHWA and agency coordination details are included in **Chapter 6 and Appendix B**.



## 1. Introduction, Purpose, and Need

CDOT has conducted a PEL study and has developed an ACP for SH 66.

### What is a PEL study?

PEL studies represent an approach to transportation decision-making that considers environmental, community, and economic goals during early planning stages. PELs minimize duplication of effort, promote cost-effective solutions, encourage environmental stewardship, and reduce project implementation delays.

### What is an ACP?

In parallel with the PEL and using consistent study limits, CDOT developed a SH 66 ACP (Chapter 2) to identify location, type, and basic design elements of future access points. Without better access control, the number of conflicts, amount of delay, and level of congestion would increase on SH 66.

### SH 66 PEL Study Outcomes

- ▶ Identifies a strategic vision and purpose for SH 66 that addresses safety, mobility, and access needs
- ▶ Accounts for environmental resources, community context, and risk/resiliency
- ▶ Details the alternatives development and screening process
- ▶ Identifies and prioritizes short-term and long-term improvements developed through a collaborative stakeholder and public process

### Supporting Documentation

- ▶ **Appendix A** FHWA Acceptance Letter: Obtained to document FHWA's involvement and acceptance of the PEL study
- ▶ **Appendix B** FHWA PEL Questionnaire: Consistent with 23 CFR 450 and FHWA policies, serves as a guide for conducting a PEL study, and summarizes the process
- ▶ **Appendix C** Corridor Conditions Report: Documents current and anticipated future corridor conditions regarding planning and land use, the transportation system, and environmental resources; served as the basis for developing and evaluating possible transportation improvements in the corridor; involved agency coordination at the local, state, regional, and federal levels

Other appendices are available and will be referenced in subsequent sections.

### SH 66 Study Location

- ▶ Situated north of the Denver metropolitan area (Figure 1)
- ▶ Includes approximately 20 miles (Figure 2) of SH 66 between US 36 in the Town of Lyons and Weld County Road (WCR) 19 in unincorporated Weld County. Also includes US 36/McConnell Drive to US 36/SH 66.
- ▶ Intersects US 36, US 287, and I-25

Figure 1. Study Corridor Location



### What is a purpose and need?

According to FHWA, a study's "purpose and need" provides justification for the project and drives the development and screening of alternatives. CDOT and the PEL Study Team worked in collaboration with FHWA and corridor stakeholders (Chapter 6) to establish a purpose and need for guiding the SH 66 PEL process. Appendix D includes detailed purpose and need documentation for the SH 66 PEL study.

### How is purpose and need different from goals and objectives?

Goals and objectives carry less emphasis in a PEL, but they serve as differentiators during alternative screening when purpose and need considerations do not distinguish an alternative. They also help define context sensitivity. Appendix D highlights CDOT's goals and objectives for the SH 66 PEL study.

### SH 66 PEL Purpose Statement

SH 66 transportation improvements are to increase safety; reduce traffic congestion; provide managed access for existing and future development; and improve multi-modal mobility of people, goods, and services. The improvements should be resilient, accommodate developing technologies, and strive to complement adjacent community context.

### SH 66 PEL Summary of Needs

- ▶ **Safety:** The corridor has higher than expected safety concerns.
  - *Vehicular* — Several intersection and mainline locations have a high number of crashes and fatalities.
  - *Bicycle* — Areas in the corridor exhibit bicycle safety concerns.
  - *Pedestrian* — Many pedestrian destinations do not have sidewalk connections.
- ▶ **Mobility:** The movement of people, goods, and services along the corridor has resulted in mobility challenges that can impede people commuting, recreating, and conducting business along SH 66.
  - *Vehicular* — Traffic congestion, inadequate intersections and highway design, and unreliable travel times currently; conditions are expected to worsen with population and employment growth.
  - *Bicycle* — Heavy SH 66 bicycle use (recreational, commuter, and events); insufficient shoulders; high level of traffic stress for cyclists; insufficient future bicycle connections.
  - *Pedestrian* — Many pedestrian destinations do not have sidewalk connections; no grade-separated pedestrian crossings currently.
  - *Transit* — High vehicle speeds and lack of pedestrian infrastructure for transit stops; Regional Transportation District's (RTD) current service boundaries do not include Weld County; expected increase in future demand.
- ▶ **Access:** Operational and safety deficiencies due to a high number of uncontrolled public and private access points with inconsistent spacing; access issues expected to worsen in future as traffic volumes and development increase.

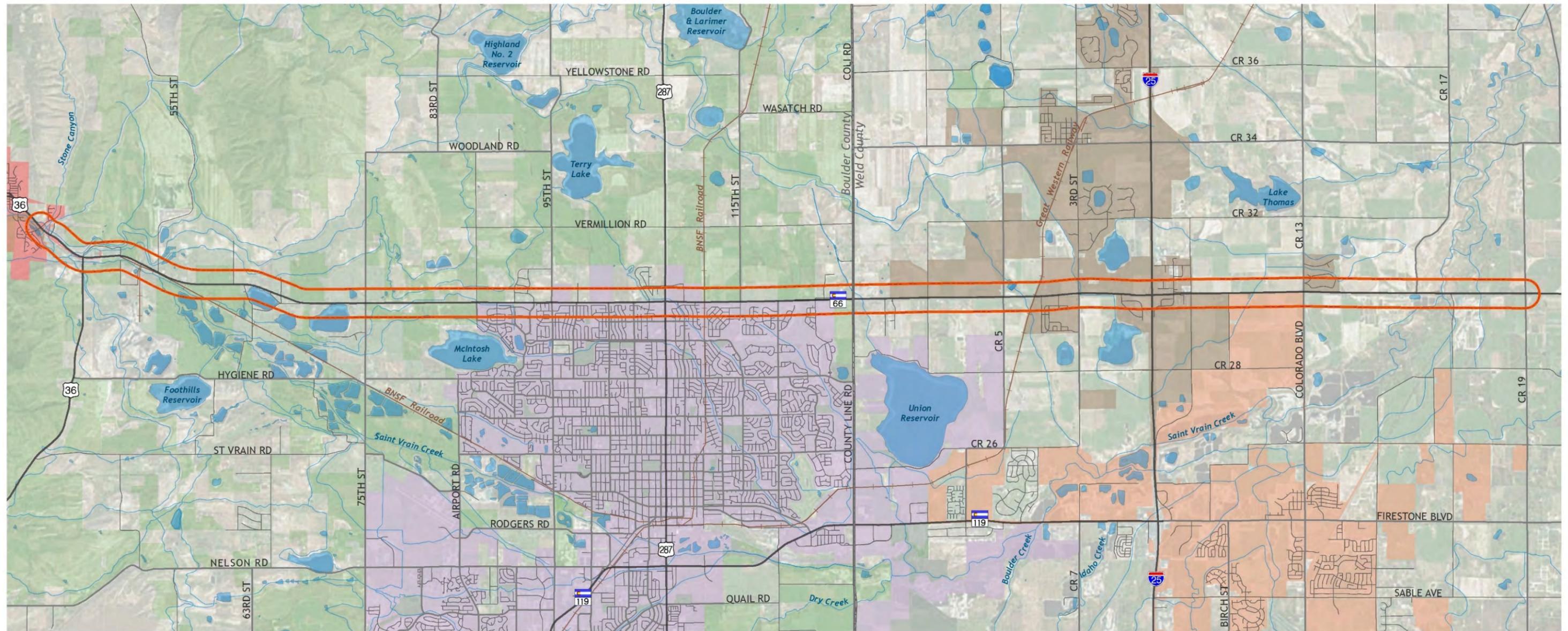
### SH 66 PEL Summary of Goals and Objectives

- ▶ **Community Context:** Maintain community context (such as rural character) and enhance the community's exposure along the corridor (through gateways)
- ▶ **Environment:** Protect and accommodate natural and cultural resources along the corridor (such as floodplains, open space areas) and minimize environmental impacts (e.g., wildlife crossings, traffic noise concerns)
- ▶ **Risk and Resiliency:** Understand physical threats (such as natural hazards) and operational threats (unanticipated traffic increases resulting from unplanned land development); collaborate with communities to establish partnerships; and enhance SH 66 as an evacuation route



# SH 66 Planning and Environmental Linkages Study

Figure 2. PEL Study Area



### Legend

- |                      |                    |                      |                     |
|----------------------|--------------------|----------------------|---------------------|
| — U.S./State Highway | — Railroad         | ■ Parks & Open Space | ■ Town Of Firestone |
| — Major Roads        | — Rivers/Streams   | □ County Boundary    | ■ City Of Longmont  |
| — Local Roads        | ■ Lakes/Reservoirs | ■ Study Area         | ■ Town Of Lyons     |
|                      |                    |                      | ■ Town Of Mead      |





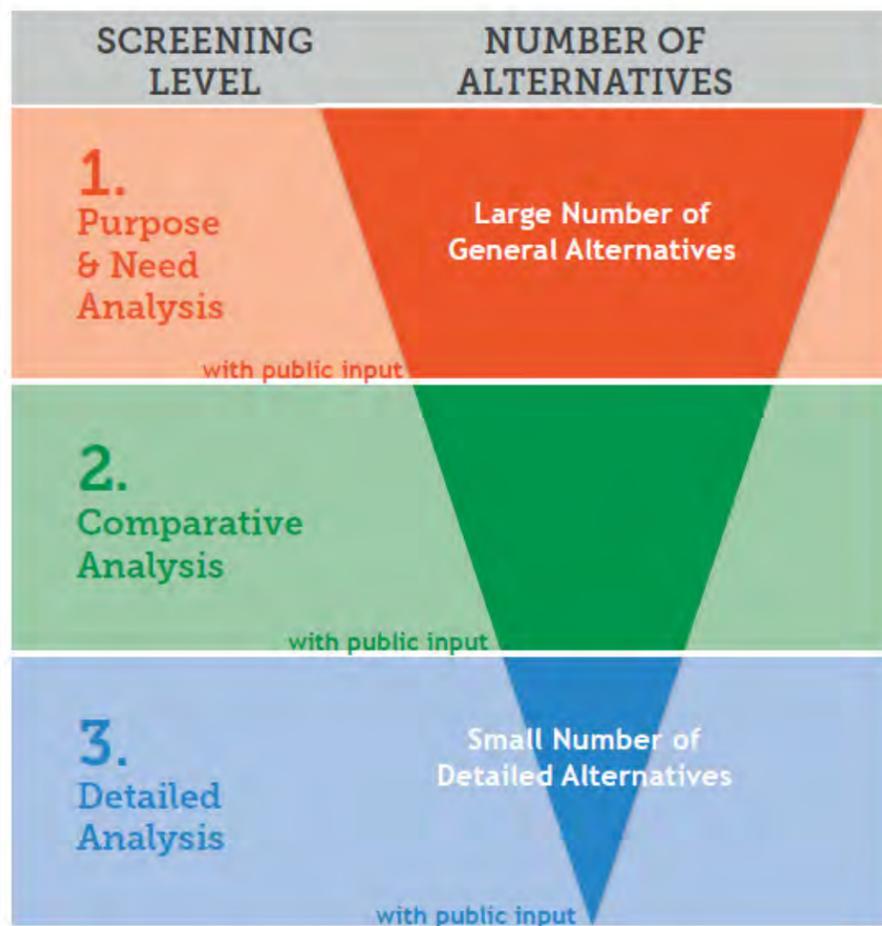
## 2. Alternatives Development and Screening and ACP Development

**Chapter 2** documents methods used to develop and screen alternatives along the SH 66 PEL study corridor. The alternatives produced and evaluated include a wide range of potential solutions encompassing roadways, intersections, access points, bicycle and pedestrian facilities, and transit. Development, screening, and refinement of alternatives focused on identifying alternatives that meet purpose and need for the corridor and that match corridor context.

### How were alternatives developed?

Alternatives were produced through a multi-level iterative process. The process began with a large number of alternatives that led to a smaller number of more detailed alternatives, following a focused screening effort (**Figure 3**). Agency coordination and public involvement (**Chapter 6**) played a major role in the alternative development process. **Figure 4** summarizes the alternatives development and screening process for the SH 66 PEL study.

Figure 3. Alternatives Evaluation Process



### How were the alternatives screened?

Evaluation criteria were developed for each screening level and were used to assess alternatives relative to the purpose and need. Goals and objectives were considered in the process. Alternatives were evaluated based on whether they met purpose and need and were advanced to subsequent screening levels, as appropriate. The following language was used to document findings:

- ▶ **Eliminated:** Removed an alternative from consideration for not meeting purpose and need in the current planning horizon (2020 to 2040); used only during the Level 1 process selectively; and would allow an alternative to be considered again after the 20-year planning horizon ends
- ▶ **Not Recommended:** Would allow the alternative to be revisited during NEPA and project development but was not recommended at the current time and was not advanced to subsequent screening levels
- ▶ **Carried Forward:** Recommended for further consideration in subsequent screening levels

Alternatives development and screening outcomes were evaluated in substantial detail and documented in color-coded screening matrices (**Appendix E**).

CONCEPTS	SAFETY Does the alternative improve existing and future conditions with respect to: • Vehicle crashes/fatalities • Bicycle accidents and unsafe facilities • Pedestrian safety and missing sidewalks?			MOBILITY Does the alternative improve the current and future ability to move people, goods, and services along and across SH 66 corridor? • Automobiles • Bicycles • Pedestrians • Transit			ACCESS Does the alternative improve access to decrease congestion in the corridor?	SUMMARY OF RESULTS	JUSTIFICATION/ADDITIONAL COMMENTS
	Vehicle	Bicycle	Pedestrian	Vehicle	Bicycle	Pedestrian			
No Action	No	No	No	No	No	No	No	Retained	Retained to evaluate as baseline condition.
Functional Class									
Freeway (F-W)	Yes	No	No	Yes	No	No	Yes	Retained	Yes for vehicles/No for other modes.
Enhanced Expressway (E-E)	Yes	No	No	Yes	No	No	Yes	Retained	Yes for vehicles/No for other modes.
Standard Expressway (R-A or R-B)	No	No	No	No	No	No	No	Retained	This is No Action for various sections of the corridor.
Enhanced Arterial (NR-A)	No	No	No	No	No	No	No	Retained	This is No Action for various sections of the corridor.
Arterial Roadway (NR-B)	No	Yes	Yes	No	Yes	Yes	No	Retained	No for vehicles/Yes for other modes.
Main Street (NR-C)	No	Yes	Yes	No	Yes	Yes	No	Retained	No for vehicles/Yes for other modes.
Highway Capacity									
HOV Lanes	No	No	No	Yes	No	No	No	Retained	Yes for vehicles/No for other modes.
Toll Lanes	No	No	No	Yes	No	No	No	Retained	Yes for vehicles/No for other modes.
HOV Lanes	No	No	No	Yes	No	No	No	Retained	Yes for vehicles/No for other modes.
Additional General Purpose Lanes	No	No	No	Yes	No	No	No	Retained	Yes for vehicles/No for other modes.
Intersections Modifications									
Close Access	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Retained	
Partial Closure	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Retained	
Intersection Reconfiguration	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Retained	
Turn Lane Additions/Extended Storage	Yes	No	No	Yes	No	No	Yes	Retained	Yes for vehicles/No for other modes.
Signalization	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Retained	May increase vehicle accidents due to the addition of a traffic signal. Additional signals may add additional delay and reduce vehicle mobility.
Grade-Separated Crossing (No Access)	Yes	No	No	Yes	No	No	Yes	Retained	May make mobility worse due to the need for out-of-direction travel to reach destinations.
Multi-modal Intersection Improvements	Yes	Yes	Yes	No	Yes	Yes	No	Retained	Some multi-modal intersection improvements can benefit vehicles by helping drivers see and avoid non-vehicular users.
Intersection Capacity Improvements	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Retained	Some design features could provide safety benefits to all modes of travel. As concepts are developed in this study, intersection capacity improvements will be paired with

Appendix E-1 includes the Level 1 screening table and evaluation criteria, as illustrated in this image

### Stakeholder Involvement Overview

- ▶ A Technical Advisory Committee (TAC) and an Executive Committee (EC) were formed to maintain stakeholder involvement throughout the PEL study. Heavy stakeholder involvement occurred during alternatives development and screening to ensure needs and concerns of affected agencies and communities would be heard and considered in the process.
  - TAC members, including agency or community planners or engineers, were involved in each level of the evaluation process and during alternatives development, refinement, and screening.
  - EC members, including elected officials and agency or community executive leadership, were involved at key milestones and decision points.
- ▶ Alternatives development and screening analysis findings were shared with the public in April and September 2019 during two public open houses, and analysis refinements were made to address public input.

### Supporting Documentation

- ▶ **Appendix E** Alternative Development and Screening Documentation: Presents technical detail associated with Level 1, Level 2, and Level 3 alternatives development and screening, including evaluation criteria and screening matrices
- ▶ **Appendix F** Agency Coordination Summary: Documents the SH 66 PEL process of agency coordination and engagement
- ▶ **Appendix G** Public Involvement Summary: Documents the SH 66 PEL process of public outreach and involvement
- ▶ **Appendix H** Access Control Plan Documentation: Documents development of ACP and maps ACP recommendations

### Level 1 Overview: Purpose and Need Screening

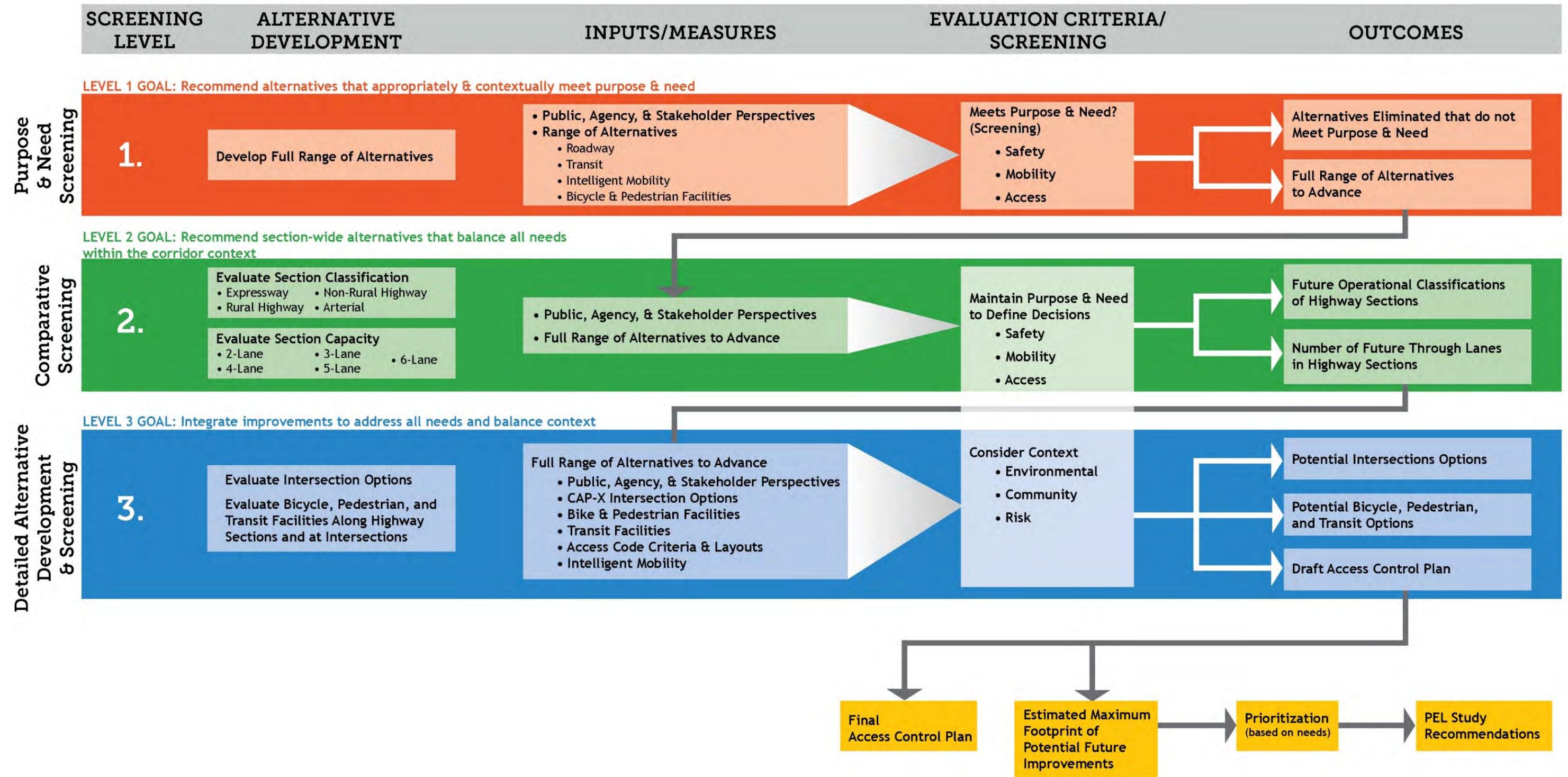
- ▶ **Goal:** Evaluate a full range of alternatives based on corridor conditions (**Appendix C**) to assess whether alternatives would meet purpose and need appropriately and contextually
- ▶ **Considerations:** Evaluated roadway, transit, intelligent mobility, and bike and pedestrian facilities alternatives
- ▶ **Recommendations:** Identified which alternatives to eliminate, eliminate in planning horizon, or advance for further evaluation in Level 2

### Level 1 Process

- ▶ More than 70 generalized alternatives were reviewed along sections of the corridor, including a No Action Alternative. The No Action Alternative represents a baseline option to consider the corridor in its current or existing state with no improvements or modifications beyond those identified as fiscally constrained. The No Action Alternative is described further on **Page 14** of this PEL Report.
- ▶ Alternatives that were retained include various functional classes of highway, highway capacity options, intersection modifications, safety-specific improvements, interchange configurations, intersection configurations, highway alignments, transit service and infrastructure options, bicycle and pedestrian options, and concepts contributing to system/program alternatives.
- ▶ Most alternatives were retained for further consideration in Level 2.
- ▶ Five alternatives were either eliminated or eliminated in the 2020 to 2040 planning horizon:
  - Realigning SH 66 southward (west of I-25) was not retained because the current alignment is the northern edge of Longmont. Movement southward would place SH 66 within Longmont, which would degrade safety, mobility, and access conditions and create other issues for the City's transportation system.
  - Commuter rail, light rail, bus rapid transit (BRT), and separate transit guideway were eliminated through 2040 because anticipated ridership does not match the need for these modes. Dedicating a separate transit guideway was also eliminated through 2040 because anticipated transit demand is not viable at this time.



Figure 4. Alternative Development and Screening Process



## Level 2 Overview: Comparative Screening

- ▶ **Goal:** Complete screening to recommend section-wide alternatives that balance all needs in the context of environment, community, and risk
- ▶ **Technical Considerations:** Evaluated data and stakeholder input to recommend future characteristics for each highway section
  - Corridor conditions (**Appendix C**) in terms of:
    - Existing highway classifications and number of travel lanes
    - Existing traffic volumes
    - Future (seasonally-adjusted) traffic volumes to account for stakeholder identified issues of developing typical peak recreational season volumes. Volumes represent peak weekday volumes.
  - Select link analysis from the DRCOG traffic model. Select link analysis provided a more detailed understanding of SH 66 travel characteristics to inform the process
  - Stakeholder input (**Chapter 6**)
- ▶ **Findings:** Recommended future operational classifications of highway sections, future number of through lanes in highway sections, and basic cross-sections for inclusion of medians or two way left turn lanes

## Level 2 Process

- ▶ For each corridor section (**Figure 5**), a range of classification options and number of travel lanes were evaluated. **Figure 6** illustrates the general operational classifications and associated transportation characteristics considered, such as travel speed, traffic volumes, and desired access spacing.
- ▶ Considerations also were made regarding the number of travel lanes that would address purpose and need most effectively, while taking into consideration corridor context and stakeholder input.
- ▶ About 50 alternatives, including the No Action Alternative, were reviewed across all corridor sections. For each section, one option was *recommended* for further evaluation in Level 3, which included classification and capacity. Remaining options were *not recommended*. **Figure 7** illustrates corridor-wide illustrations of existing and proposed future highway capacity (number of lanes) and classification. **Figure 8** includes existing and future visualizations of the highway corridor developed as part of the Level 2 Screening Process.
- ▶ Following Level 2, these PEL Proposed Options were carried forward into assessing the collective footprint of all proposed options. **Chapter 3** further describes the ROW preservation footprint.

Appendix E-2 includes the Level 2 screening tables and evaluation criteria, as illustrated in this image

Figure 5. SH 66 PEL Corridor Sections

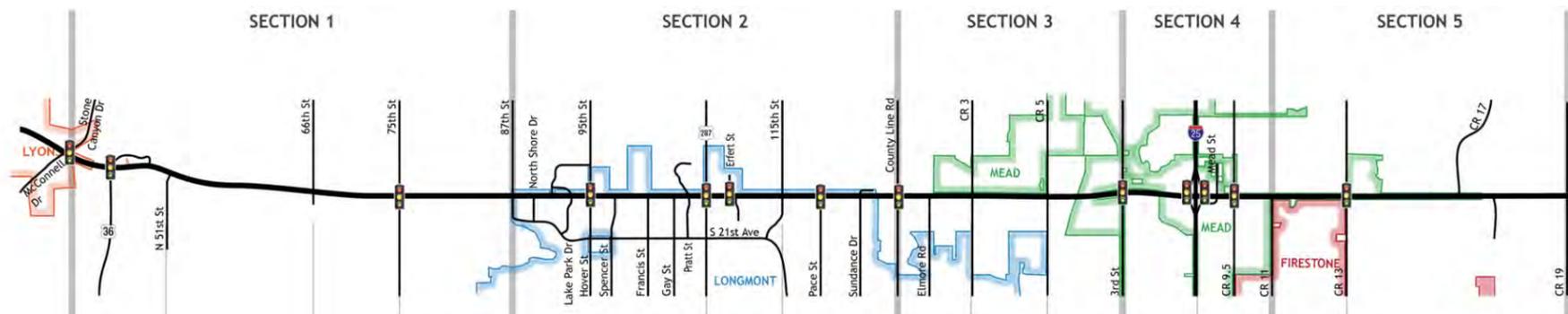


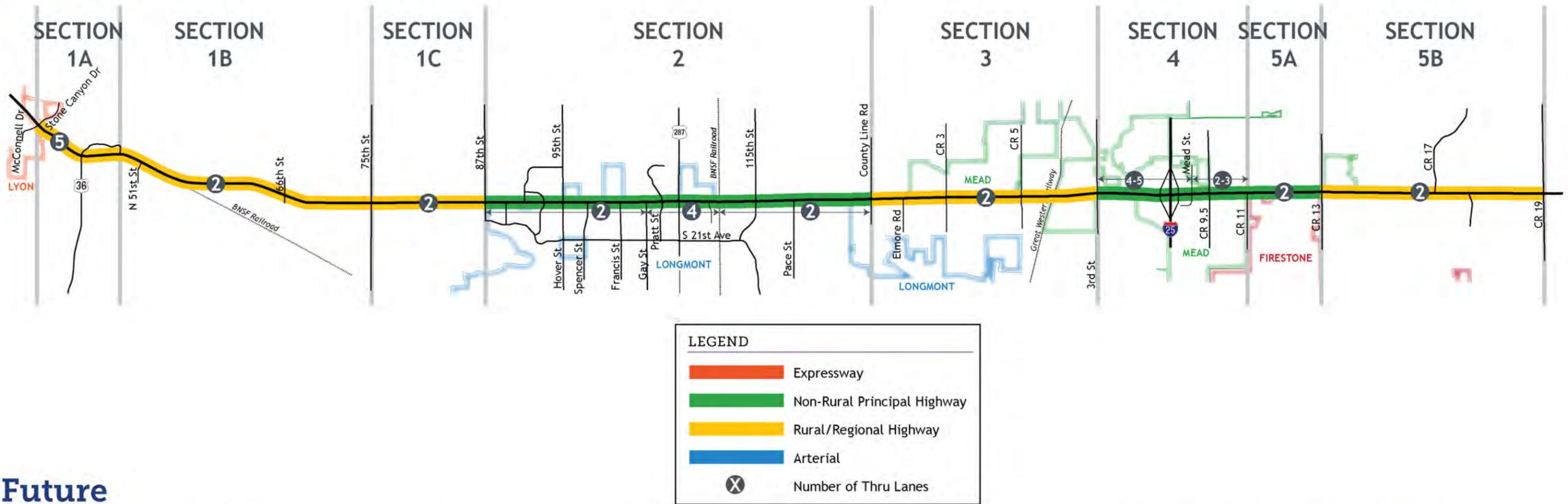
Figure 6. Operational Classifications Overview

	Description	Access Spacing
<b>EXPRESSWAY</b> 	Moderately high speeds and traffic volumes with limited access, multiple lanes in each direction and separated directional travel	1 mile + for full movement, with possible RIRO at half mile
<b>RURAL/REGIONAL HIGHWAY</b> 	Moderate to high speeds with moderate to low traffic volumes	1/2 mile + for full movement intersections with public roadways, maximum of one access per parcel (depending on other roadways that could preclude access) with shared access preferable
<b>ARTERIAL</b> 	Moderate to low travel speeds and traffic volumes with moderate access	1/2 mile for full movement intersections, with possible 3/4 movement at quarter miles, and RIRO access for each parcel (should share access if possible)
<b>MAIN STREET</b> 	Low travel speeds and traffic volumes with significant roadside development and access needs	One access per parcel (should share access if possible)



Figure 7. Existing Conditions and Level 2 Screening Recommendations

### Existing



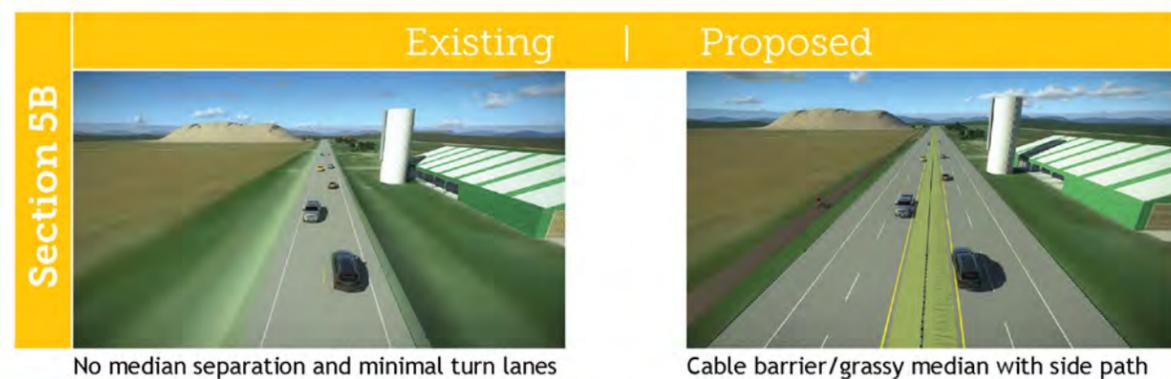
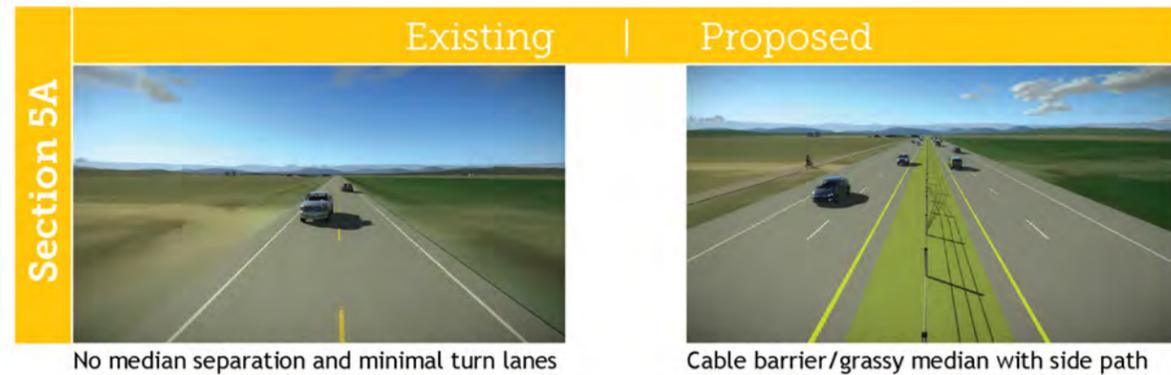
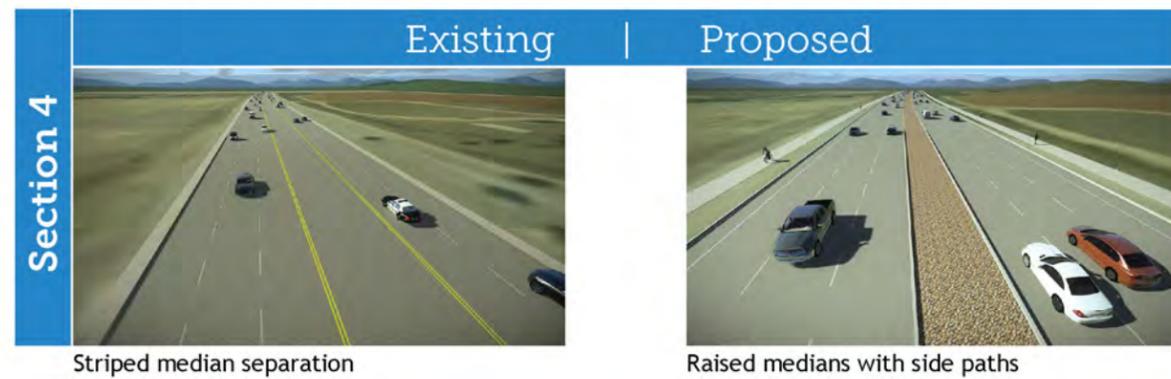
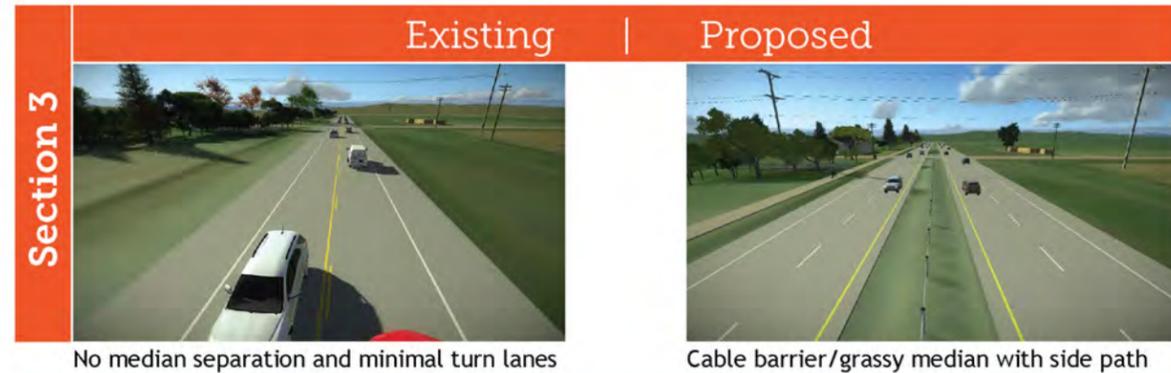
### Future





# SH 66 Planning and Environmental Linkages Study

Figure 8. Existing Conditions and Level 2 Screening Corridor Visualizations





# SH 66 Planning and Environmental Linkages Study

## Level 3 Overview: Detailed Alternative Development and Screening

- ▶ **Goal:** Complete screening to integrate SH 66 corridor improvements that address all needs and balance context
- ▶ **Evaluated:**
  - Range of alternatives at SH 66 intersections, which were refined during ACP development
  - Range of alternatives for providing adequate bicycle and pedestrian facilities
  - Transit alternatives, including sidewalk connections and pedestrian accommodations at bus stops
- ▶ **Recommendations:**
  - Identified intersection improvements (**Figure 13** at the end of this chapter) that address safety, mobility, and access needs
  - Integrated bicycle, pedestrian, and transit improvements (**Figure 12**) that address safety, mobility, and access needs
  - Integrated ACP considerations for access management, consolidation, closures, and recommendations



For baseline transportation information, view the SH 66 PEL Corridor Conditions Report (**Appendix C**)



## Roadway Level 3 Alternatives Development

- ▶ Intersections along the corridor (**Figure 13** at the end of this chapter) were initially evaluated based on purpose and need and study goals. Synchro was used to evaluate intersection and corridor-wide levels of service (LOS) and traffic delays.
- ▶ FHWA's Capacity Analysis for Planning of Junctions (CAP-X) Tool was used to evaluate the range of feasible alternative intersection options where a traditional signalized intersection was not appropriate.
- ▶ Approximately 180 alternatives/options, including the No Action Alternative, were reviewed across all corridor sections. For each section, one or more options have been identified as "PEL Proposed Option(s)."
- ▶ A reversible lanes concept (**Figure 9**) was evaluated in Section 1 between SH 66/E Highland Drive and SH 66/87th Street. It did not receive much stakeholder or public support and was found infeasible from an operation or a constructability standpoint.
- ▶ Options were further refined during the ACP process and based on input from the public at the Open Houses in April 2019.
- ▶ Following Level 3, these PEL Proposed Options were carried forward into assessing the collective footprint of all proposed options. **Chapter 3** further describes the ROW preservation footprint.

**Appendix E-3** includes the Level 3 screening tables and evaluation criteria for roadways, bicycles, pedestrians, and transit, as illustrated in this image

SH 66 PEL Level 3 Screening – Roadway											
Section	Location	Alternative	Screening Criteria	Screening Results							
24	Highland Drive	No Control Signal	...	...	...	...	...	...	...	...	...
24	Highland Drive	Control Signal	...	...	...	...	...	...	...	...	...
24	Highland Drive	Control Signal	...	...	...	...	...	...	...	...	...

**Appendix E-3** includes the Level 3 screening tables and evaluation criteria for roadways, bicycles, pedestrians, and transit, as illustrated in this image

## Roadway Level 3 Recommendations

- ▶ PEL Proposed Options are consistent with recommendations of the ACP. Several locations along the corridor were projected to have unacceptable operations as a traditional signalized intersection with capacity improvements alone. Additionally, stakeholders desired to preserve a larger footprint to accommodate major north-south arterials at WCR 9.5 and WCR 13 in Weld County.
- ▶ Various intersection types and innovations developed during Level 3 were determined to be able to accommodate future traffic conditions. The following options were considered feasible, along with the Proposed Options to carry forward:
  - **SH 66 and Hover/95th Street** — Partial displaced left turn (for westbound to southbound left); fully displaced left turn; grade-separation, such as echelon, single point urban interchange (SPUI), or diamond interchange; junior interchange in the northeast quadrant.

**Carried Forward:** Partial displaced left turn as it best meets corridor needs with the smallest footprint
  - **SH 66 and US 287** — Fully displaced left turn; grade-separation, such as echelon, SPUI, or diamond interchange; split intersection for westbound/diamond interchange for eastbound.

**Carried Forward:** Fully displaced left turn as it best meets corridor needs with the smallest footprint
  - **SH 66 and County Line Road** — Capacity improvements to add turn lanes and acceleration lanes; fully displaced left turn; or grade-separation, such as echelon, SPUI, or diamond interchange.

**Carried Forward:** Added turn lanes at the intersection as it best meets corridor needs with the smallest footprint
  - **SH 66 and WCR 9.5** — Hybrid option of split intersection for westbound/diamond interchange for eastbound; partial or fully displaced left turn; or grade-separation, such as echelon, SPUI, or diamond interchange.

**Carried Forward:** Hybrid option of a split intersection/diamond interchange as it best meets SH 66 corridors needs and WCR 9.5 arterial needs (**Figure 10**)
  - **SH 66 and WCR 13/Colorado Blvd** — Split intersection for westbound/diamond interchange for eastbound; partial or fully displaced left turn; or grade-separation, such as echelon, SPUI, or diamond interchange.

**Next Steps:** This intersection will need to be analyzed in more detail in the future. Based on current traffic projections, a grade-separated interchange is not warranted. However, based on stakeholder input and planned arterial networks, WCR 13 is anticipated to be a major north-south regional route. Therefore, the same ROW footprint for WCR 9.5 was set aside for WCR 13. Local agencies will be responsible for ensuring that development setbacks meet the needs to accommodate future potential ROW needs.
- ▶ Operational functionality and cost considerations of various intersections can be balanced during NEPA and project decision-making.



Figure 9. Reversible Lane Concept Between SH 66/Hover and SH 66/US 287 – Not Carried Forward



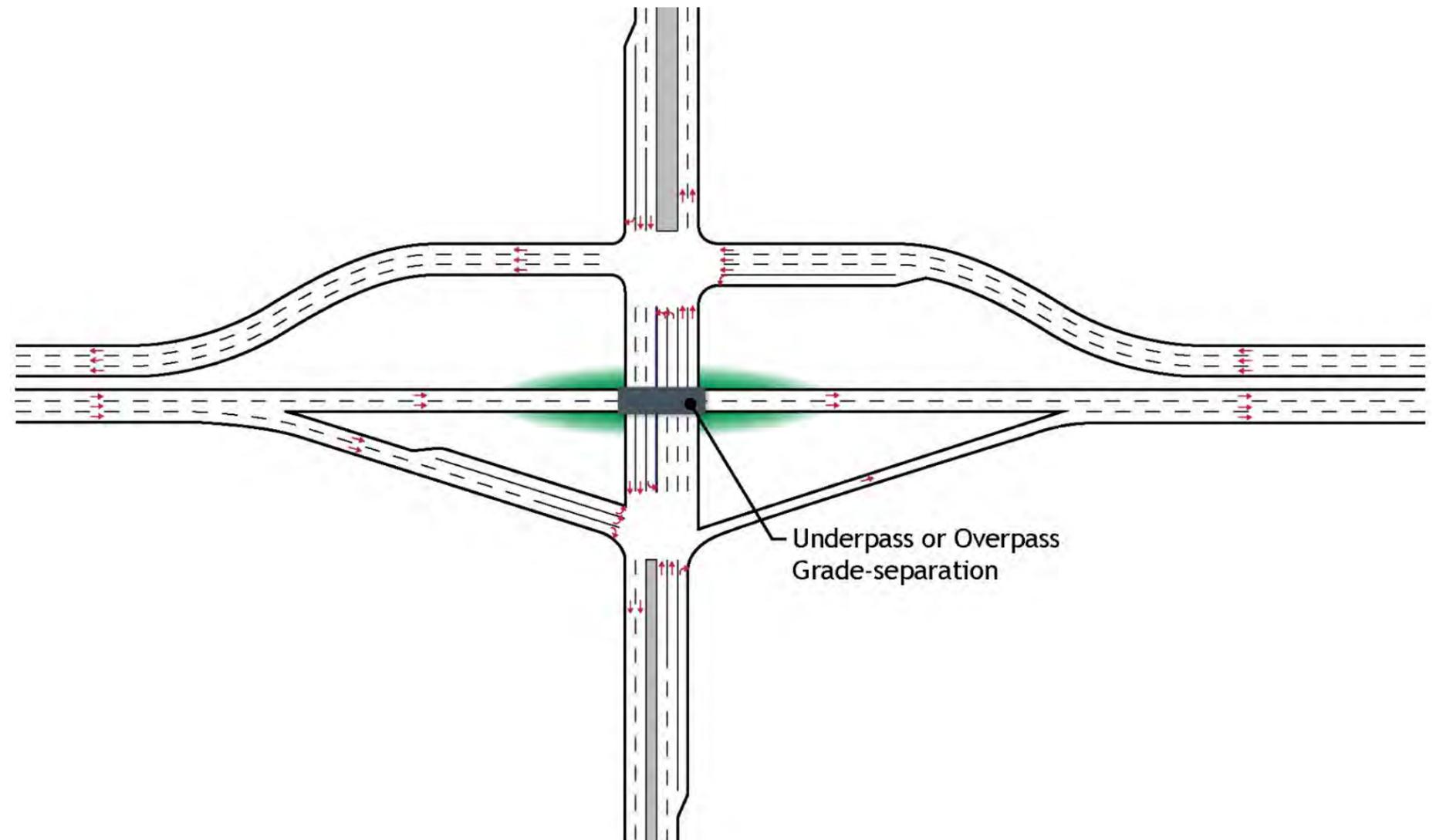
Morning Configuration Concept, with two lanes of travel westbound and one lane of travel eastbound



Intersection Concept Configuration

The reversible lane concept was deemed infeasible and did not have much stakeholder or public support.

Figure 10. Hybrid Option Concept of a Split Intersection/Diamond Interchange at SH 66/WCR 9.5 – PEL Proposed Option



This concept includes a compressed footprint and is a hybrid option, with the westbound direction being a split intersection and the eastbound direction being a partial diamond interchange. This option has been carried forward as it works operationally and would have the smallest implementation footprint.



**SH 66 Planning and  
Environmental Linkages Study**

This page intentionally left blank.



### How did this PEL incorporate bicycle, pedestrian, and transit facility considerations?

The SH 66 PEL has emphasized the importance of safely and comfortably serving all modes along SH 66. The SH 66 PEL purpose and need (Chapter 1) and Level 3 alternatives development and screening process include bicycle, pedestrian, and transit considerations.

### Bicycle, Pedestrian, and Transit Level 3 Alternatives Development

- During Level 3, a range of alternatives for providing adequate facilities for bicyclists and pedestrians (active transportation users) were evaluated:
  - Multi-use Trails** —Allows two-way, off-street pedestrian, bicycle, and non-motorized vehicle use
  - Side Paths** —A bi-directional shared use path located immediately adjacent and parallel to a roadway that accommodates all ages and abilities, allows reduced roadway crossing distances, and maintains rural community character
  - Sidewalks** —A paved path for pedestrians at the side of a road
  - Bike Lanes** —A division of a road marked off with painted lines, for use by cyclists
  - Access Road with Advisory Shoulders (ARWAS)** —A shared access road that accommodates both non-motorized travelers and low volumes of vehicles.
  - Wide Shoulders (bigger than 5 feet)** —Accommodates vehicles and non-motorized travelers along the roadway
- Transit alternatives include sidewalk connections and pedestrian accommodations at bus stops. Transit considerations during Level 3 primarily centered on accessibility and efficiency.
- Alternatives were developed through a process of reviewing previous relevant plans from local jurisdictions and incorporating their recommendations, as appropriate, identifying and addressing any remaining infrastructure gaps, and collaborating with the public and key stakeholders to ensure a consistent and compatible vision.

### Bicycle, Pedestrian, and Transit Level 3 Alternatives Screening

- Street crossings are often the most stressful component of a bicycle or pedestrian trip. Appropriate intersection treatments are crucial for supporting these modes. Intersection operations are also a critical determinant to the efficiency and effectiveness of transit service. As such, each intersection alternative was evaluated in the context of bicycles, pedestrians, and transit:
  - How intersection options would affect vehicular safety and mobility (including transit vehicles), and bicyclist and pedestrian safety and mobility
  - How bicycle, pedestrian, and transit options would benefit or impair vehicular safety and mobility (both personal and transit vehicles), bicyclist safety and mobility, pedestrian safety and mobility, risk and resiliency, community context, and environmental considerations

### Bicycle, Pedestrian, and Transit Level 3 Recommendations

- Below is a summary of bicycle and pedestrian recommendations:
  - Section 1B** — Wide shoulders along both sides of SH 66 and the ARWAS/bike and pedestrian path along the north side of SH 66
  - Section 1C** —Wide shoulders along both sides of SH 66 and the ARWAS/bike and pedestrian path along the south side of SH 66
  - Section 2** — Wide shoulders along both sides of SH 66, a bike and pedestrian path along the entire south side, and a bike and pedestrian path along the north side between 95<sup>th</sup> Street and the BNSF Railroad
  - Section 3** — Wide shoulders along both sides of SH 66, a bike and pedestrian path along the south side of SH 66
  - Section 4** — Wide shoulders along both sides of SH 66, a bike and pedestrian path along the entire south side, a bike and pedestrian path along the north side between WCR 7 and I-25, and a sidewalk along the north side between I-25 and WCR 9.5
  - Section 5** — Wide shoulders along both sides of SH 66 and a bike and pedestrian path along the south side of SH 66
- Transit recommendations include:
  - Improvements to the existing bus stops along SH 66 between McConnell Dr and US 36, including sidewalk/trail connections and concrete platforms
  - A transit station at the intersection of SH 66 and US 287 that will serve the planned SH 119 BRT line and potential future transit service along SH 66
  - Continued coordination between CDOT, RTD, local jurisdictions, and railroad officials regarding the potential for future transit service along SH 66 and rail service along I-25
- Figure 12** illustrates Level 3 bicycle, pedestrian, and transit recommendations.

SH 66 PEL Level 3 Screening – Bicycle, Pedestrian, and Transit

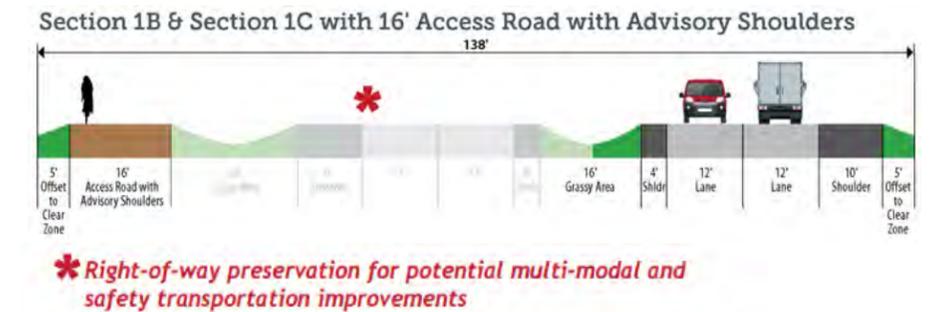
Section ID	Sub-Section	Alternative	Safety			Mobility			Access	Risk and Resiliency	Community Context	Environmental Considerations	Summary of Benefits	Justification/Comments
			Vehicular	Bicycle	Pedestrian	Vehicular	Bicycle	Pedestrian						
2B - McConnell Dr. - right-hand Dr.	Option 1 - No Dr. - Right-hand Dr.	...	...	...	...	...	...	...	...	...	...	...	...	
	Option 2 - Carry Existing Blue Lane to Dr. Dr.	...	...	...	...	...	...	...	...	...	...	...	...	

Appendix E-3 includes the Level 3 screening tables and evaluation criteria for roadways, bicycles, pedestrians, and transit

### Unique Bicycle and Pedestrian Recommendation: Access Road with Advisory Shoulders

- The ARWAS (Figures 11 and 12) balances needs to maintain SH 66 access for residents between 51<sup>st</sup> Street and 87<sup>th</sup> Street with needs to provide a safe and comfortable active facility in a popular area for recreational bicyclists.
- The access roads with advisory shoulders are envisioned as 16' wide facilities that provide low-speed motor vehicle access from individual residences to streets that intersect SH 66. These roads include striped advisory shoulders on each side as a space for active users.

Figure 11. Access Road with Advisory Shoulders Cross Section



- In order to prevent vehicles using the facility as an alternate route to SH 66, the ARWAS would transition to side paths where vehicular access is not needed.
- With only a handful of residents fronting each proposed section of ARWAS, motor vehicle volumes would be low.
- If land uses adjacent to the ARWAS are redeveloped in the future, additional intersections with SH 66 may become necessary, and the ARWAS would not be appropriate (given higher volumes of traffic). In that case, the ARWAS would be converted to side paths. The potential for the ARWAS to become side paths eventually is why a wider facility is not recommended at this time.

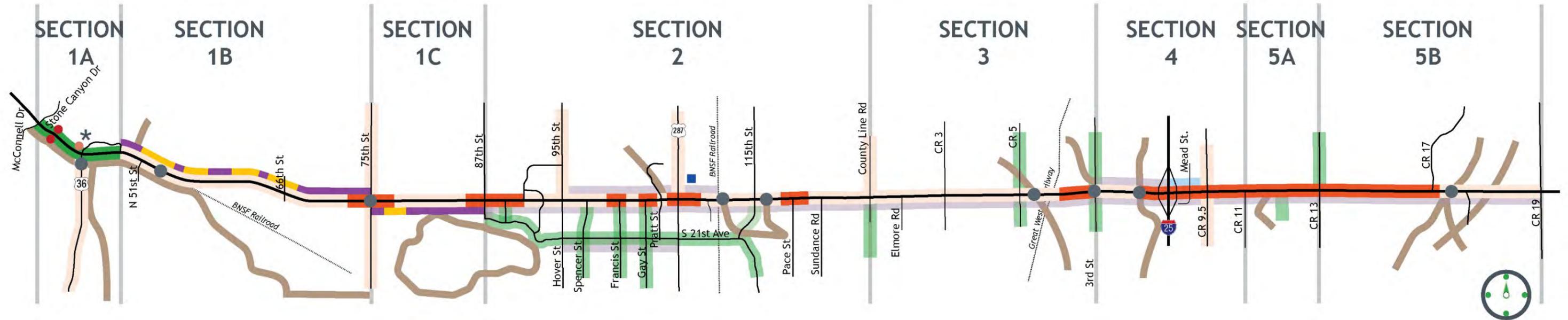
### Bicycle, Pedestrian, and Transit Next Steps

- As intersection and highway improvements are considered in NEPA and design, consideration should be made toward providing multi-modal functionality, such as:
  - interchange designs should include side path connections,
  - roundabouts should include proper signing and striping to facilitate active crossings, and
  - grade-separated bicycle and pedestrian crossings (Figure 11) should be explored.
- The ARWAS option is not an approved treatment in the Manual on Uniform Traffic Control Devices and would require a "request for experiment" from FHWA to implement.
- A high-quality transit corridor needs to provide convenient access to stops, a safe and comfortable environment for users to wait for buses, and a system that facilitates efficient movement of buses. As intersection and highway improvements are considered in NEPA and design, consideration should be made toward providing:
  - efficient merges at transit stop locations
  - providing opportunities for buses to bypass congestion at busy intersections
  - minimizing the number of turning movements conflicting with the bus



# SH 66 Planning and Environmental Linkages Study

Figure 12. Level 3 Screening Bicycle, Pedestrian, and Transit Recommendations



### Bike Lanes

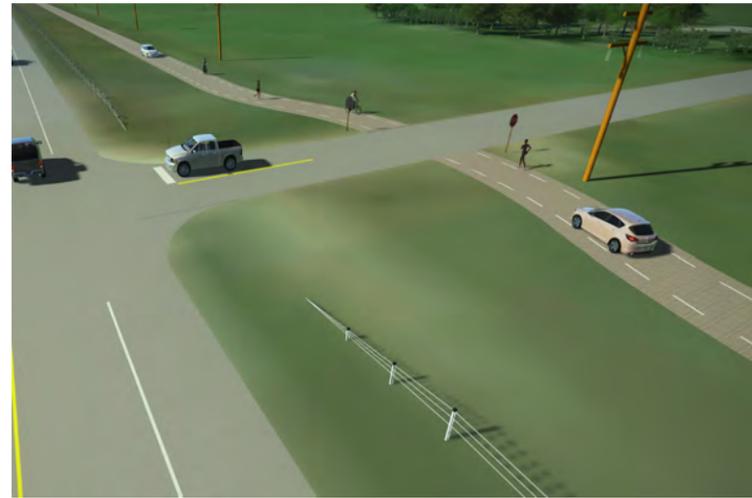
**Traditional**

**Buffered**

**Separated**



Section 1B: In this access road with advisory shoulders concept, motorists, bicyclists, and pedestrians share travel space in CDOT's ROW, north of SH 66. Communities could connect the access road locations with trail segments to expand regional bicycle and pedestrian mobility along SH 66.



Section 1B and 1C: The access road with advisory shoulders would connect to streets that intersect with SH 66 to provide motorists access to and from SH 66.

### LEGEND

- | PEL Proposed | Existing/Previously Planned         |
|--------------|-------------------------------------|
|              | Multi-Use Trail                     |
|              | Sidewalk                            |
|              | Sidewalk                            |
|              | Bike Lanes                          |
|              | Access Road with Advisory Shoulders |
|              | Wide Shoulders (5+Feet)             |
|              | Bus Stop Improvements               |
|              | Existing Bus Stops                  |
|              | Transit Station                     |
|              | Proposed Grade-Separated Crossing   |
- \* Includes traditional bike lanes and buffered bike lanes as short-term options and separated bike lanes as the long-term option from McConnell Dr. to Highland Dr.



### SH 66 Access Control Plan Development

- ▶ The alternatives development and screening process and ACP development were conducted in parallel for SH 66. For the ACP, considerations were made to:
  - Reduce the number of conflict points where a crash may occur on the highway, which is applicable for vehicles and also for pedestrians and cyclists who must cross multiple driveways on the corridor.
  - Create fewer locations for vehicles to brake or turn onto or off the highway, resulting in more efficient travel for through traffic.
  - Make the corridor more visually appealing to drivers and visitors by reducing the number of driveways.
- ▶ Development of the SH 66 ACP included the following goals:
  - Identifying improvements to the local transportation network that promote safety and provide appropriate level of access to properties along SH 66.
  - Blending the corridor vision from the PEL with requirements of CDOT's State Highway Access Code.
  - Assisting future development and redevelopment along SH 66 by identifying locations and types of accesses.
  - Providing efficient movement for all transportation modes along SH 66.
- ▶ Reasonable access has been provided to properties adjacent to the highway while maintaining safe and efficient movement of vehicles, bicyclists, and pedestrians along and adjacent to SH 66.
- ▶ The ACP is intended to represent a long-range plan for the study roadway. Implementation of the full plan will occur over the long term as a phased approach over time based on:
  - When a safety need is identified
  - During the land development or redevelopment process
  - When funding for improvements is available
  - When traffic needs arise



Appendix H includes the ACP Report and supporting documentation

### SH 66 Access Control Plan Options

- ▶ The SH 66 corridor has more than 370 existing access points within the PEL and ACP Study Area (**Appendix H**).
- ▶ Options mapped in the Recommended ACP include:

Full Movement (May be signalized)	Emergency Access Only
Full Movement (Unsignalized)	Grade Separated
3/4 Movement	Grade Separated at Railroad
Right-in, right-out only	Access to be closed

Access closure contingent on contiguous property ownership or access to adjacent property via shared agreement
Obtain Access via Alternate Road
Existing shared ownership/Cross Access
Proposed cross access for shared access

Proposed Future 16' Access Road with Advisory Shoulder
Proposed Future 10' Bike and Pedestrian Path
Proposed Future Frontage Road
Proposed Future Connection



A small portion of the corridor is illustrated in this image, showing an area of access points along SH 66.

### What is a No Action Alternative?

The No Action Alternative assumes no improvements would be made to the corridor and the surrounding transportation network, except those already committed by a government or an agency or those with identified funds for construction, meaning the No Action transportation network is "fiscally constrained." The No Action Alternative assists the study in determining transportation needs along the corridor if no new improvements beyond those in the fiscally-constrained plan are implemented. It serves as a base against which to compare impacts of suggested alternatives.

### No Action Alternative Overview

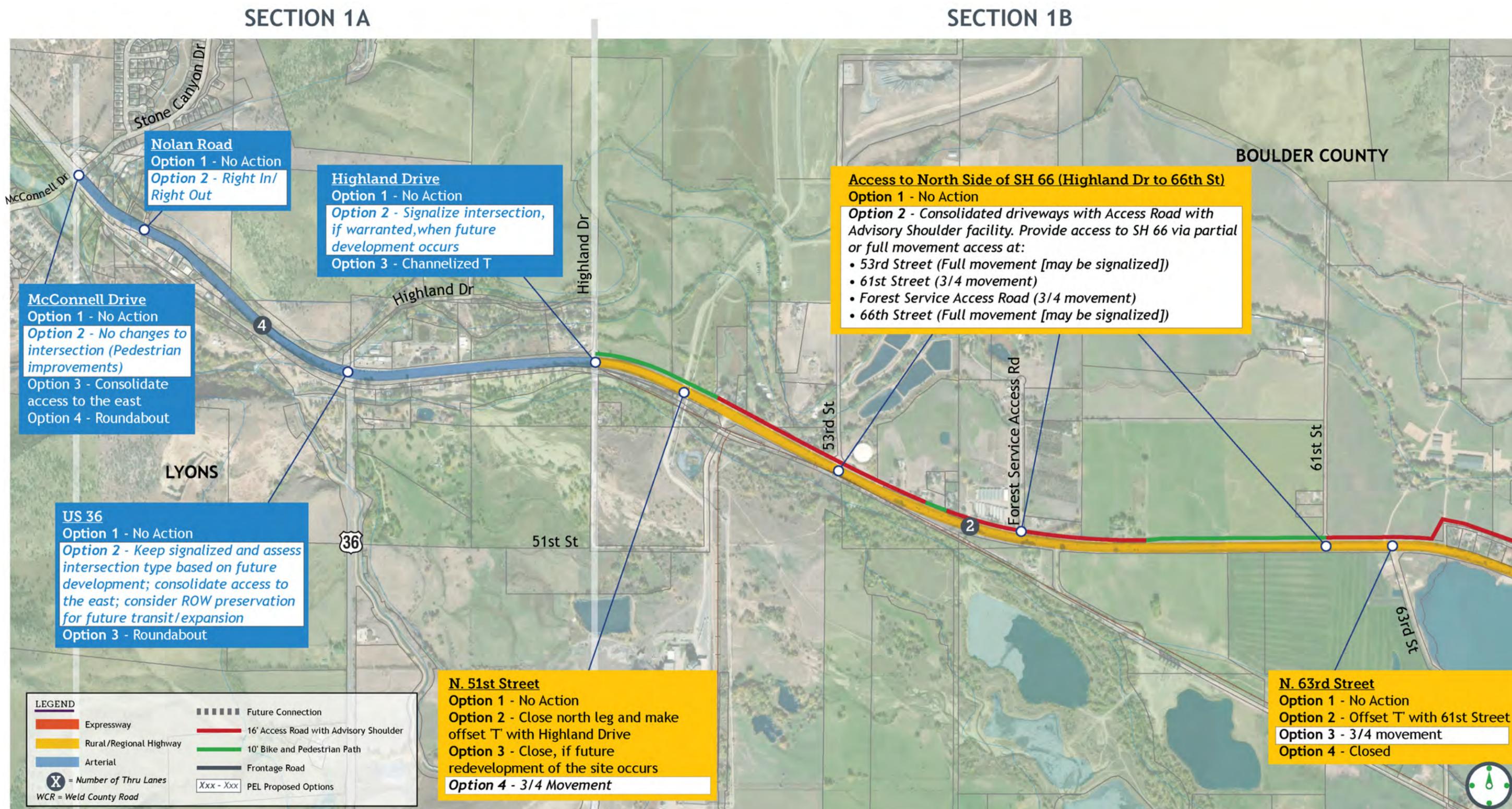
- ▶ **Table 1** provides information on 2040 fiscally-constrained projects that might have an impact on the study area.
- ▶ Projects include road widening (including SH 66 to four lanes from Hover Street to US 287), managed lanes (on I-25), and transit projects that will be constructed regardless of improvements identified by the SH 66 PEL.
- ▶ Section 3.1.3 of the Corridor Conditions Report (**Appendix C**) includes more information about the No Action Alternative and the travel demand model.

**Table 1. 2040 No Action Fiscally-Constrained Projects Impacting SH 66**

Facility	To/From	Location	Improvement
<b>Roadway Projects</b>			
SH 66	Hover Street to US 287	Longmont	Widen to 4 lanes
I-25	SH 66 to WCR 38	North I-25	New managed lane, each direction
17 <sup>th</sup> Avenue	Alpine Street to Ute Creek Drive	Longmont	Widen to 4 lanes
East County Line Road	9 <sup>th</sup> Avenue to SH 66	Longmont	Widen to 4 lanes
Nelson Road	75 <sup>th</sup> Street to Affolter Drive	Longmont	Widen to 4 lanes
Pace Street	5 <sup>th</sup> Avenue to SH 66	Longmont	Widen to 4 lanes
<b>Transit Projects</b>			
SH 119	Foothills Parkway to US 287	Boulder / Longmont	New BRT route
Parking	SH 66 & US 287	Longmont	Relocated Park-n-Ride (150 spots)
Station / Parking	SH 119 & US 287	Longmont	New BRT station (439 spots)



Figure 13. Level 3 Screening Roadway Maps

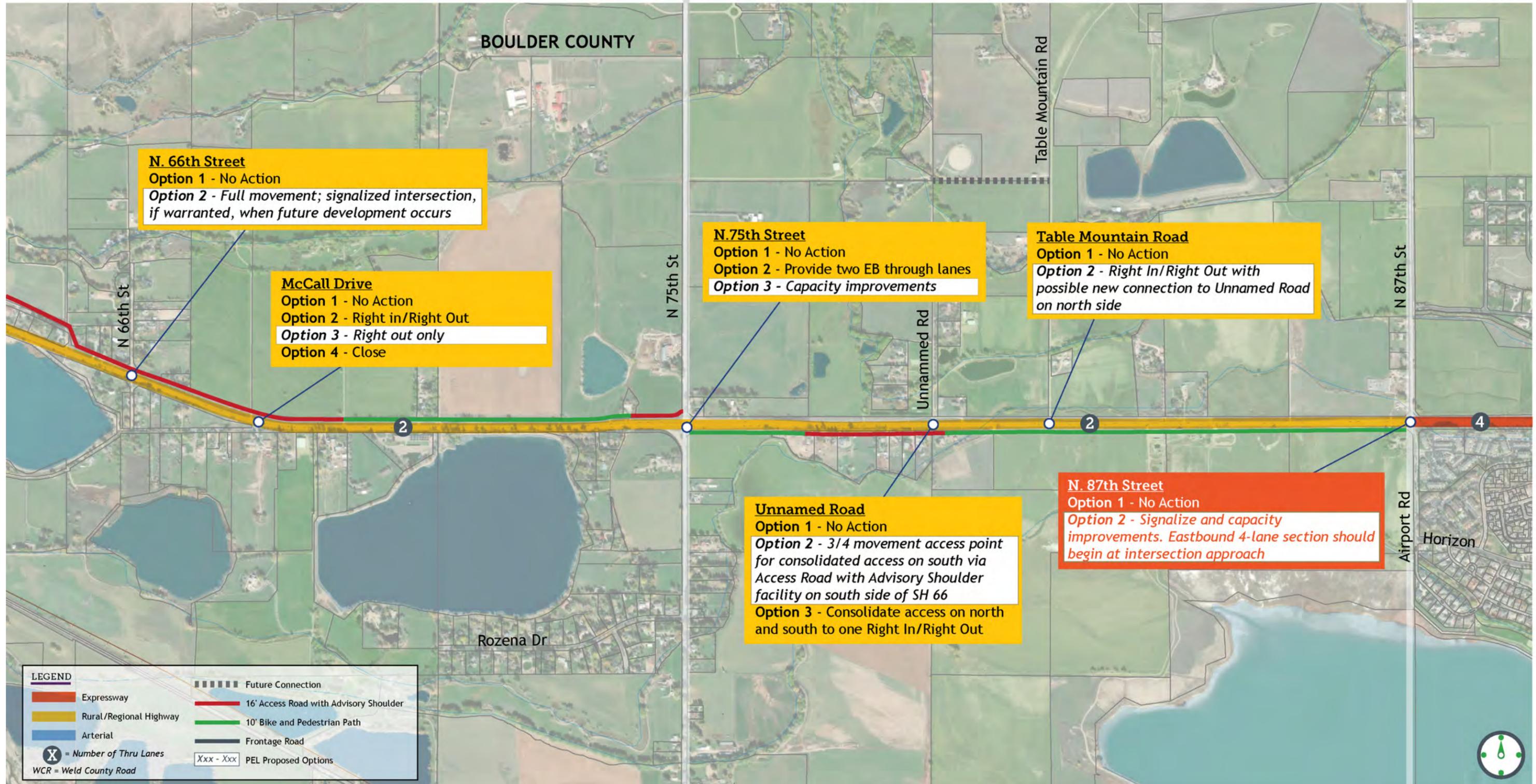




SECTION 1B

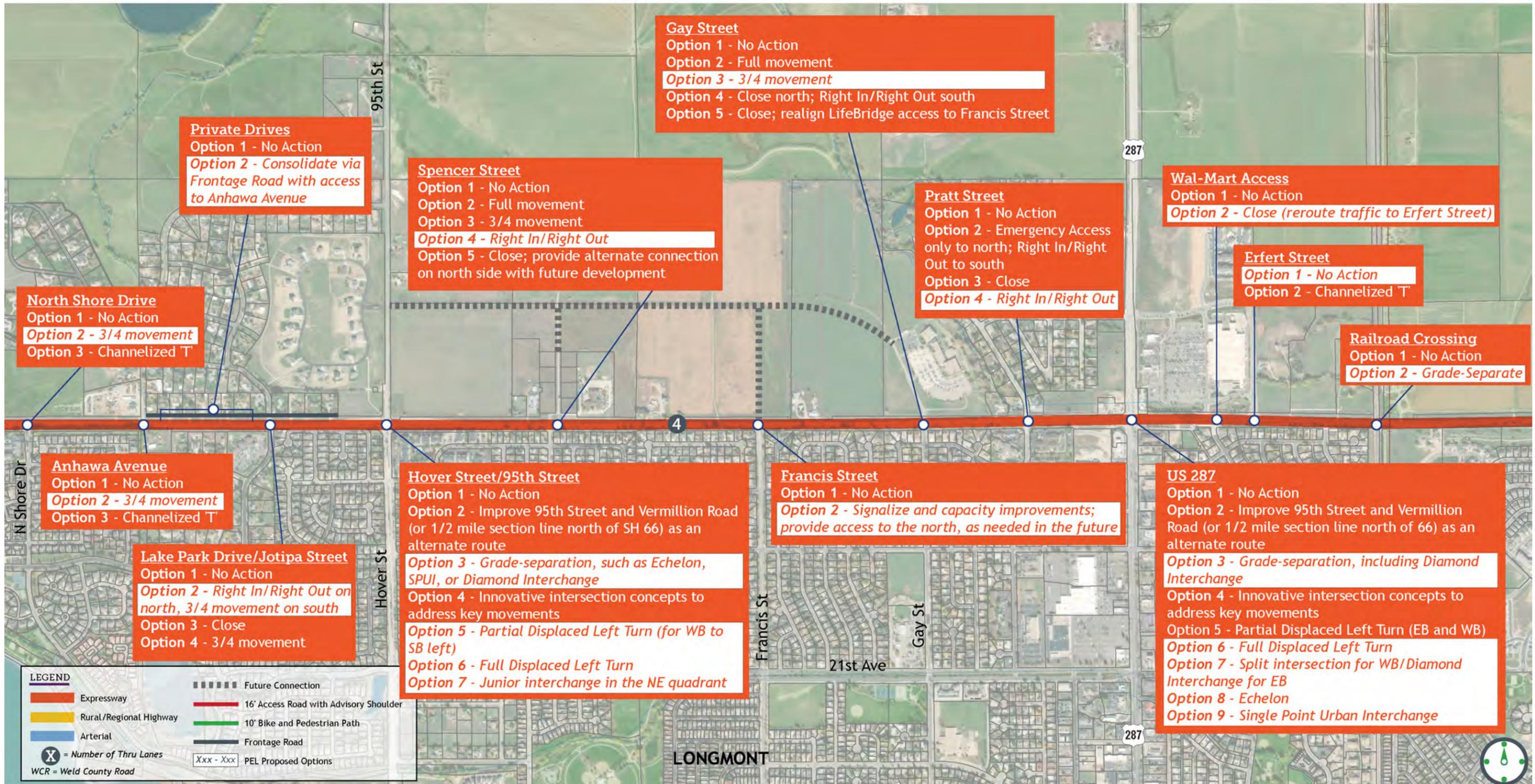
SECTION 1C

SECTION 2





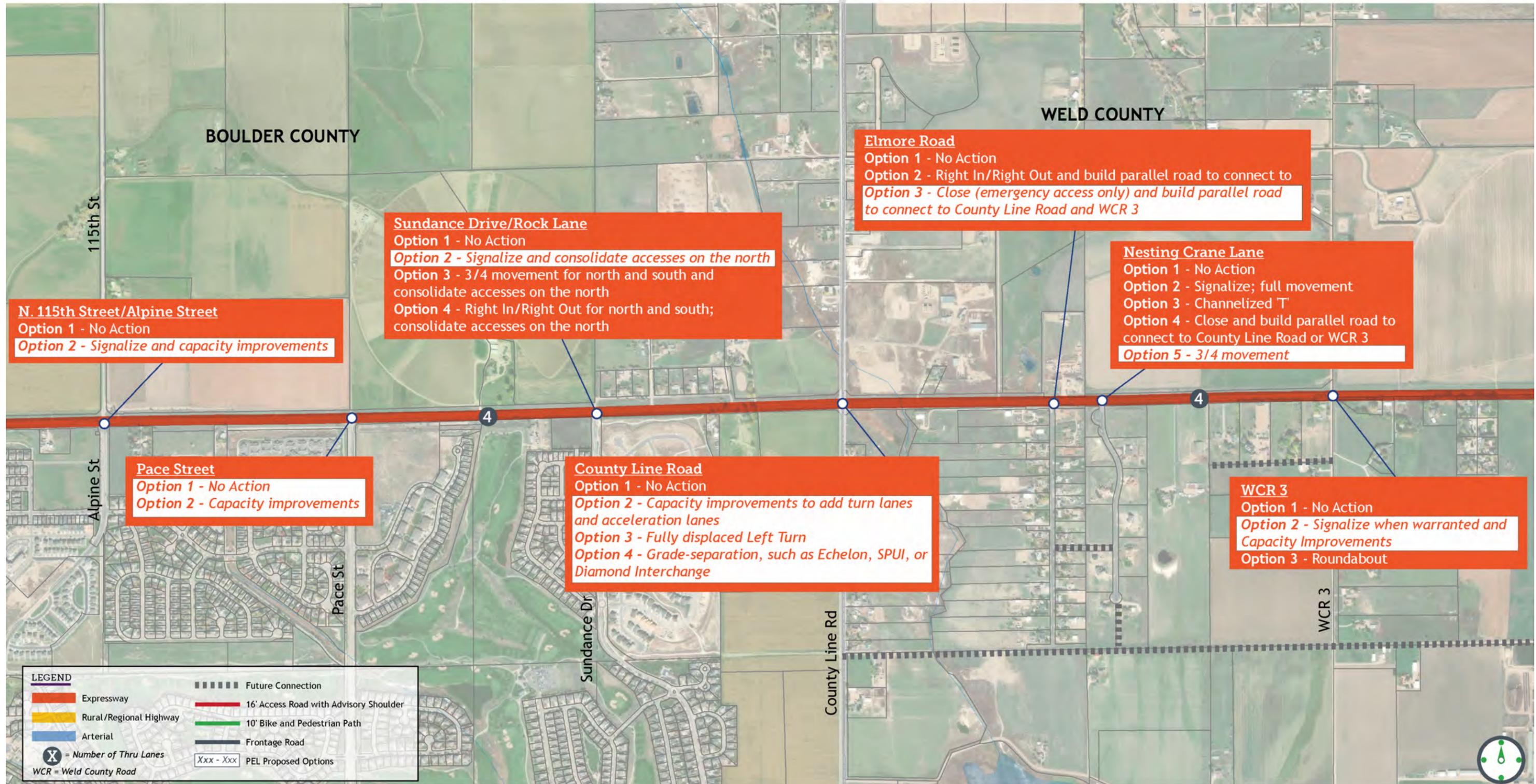
SECTION 2





SECTION 2

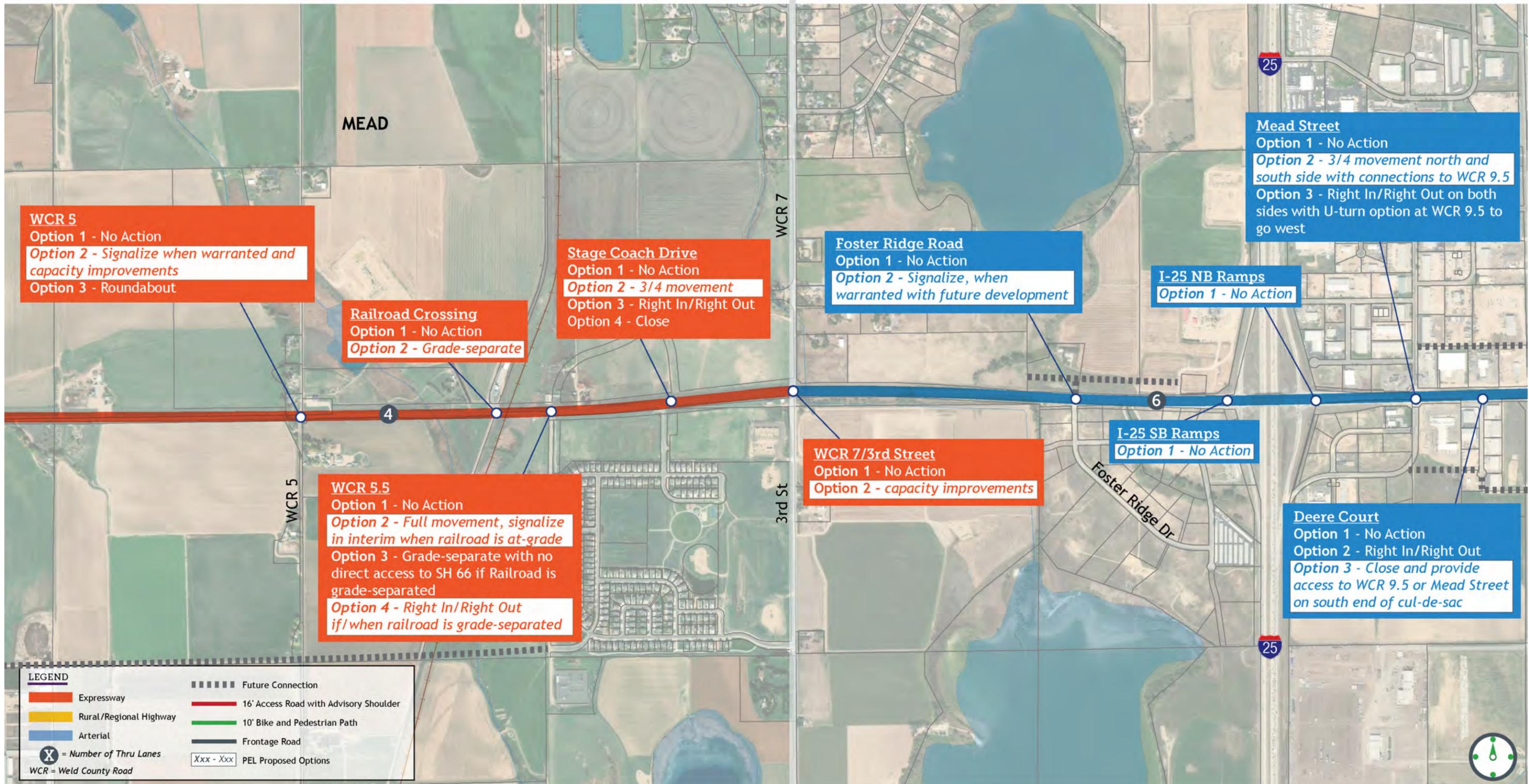
SECTION 3





SECTION 3

SECTION 4





SECTION 4

SECTION 5A

SECTION 5B

WELD COUNTY

FIRESTONE

**WCR 9.5**  
 Option 1 - No Action  
 Option 2 - Grade-separate  
 Option 3 - Capacity improvements  
 Option 4 - Roundabout  
 Option 5 - Partial Displaced Left Turn (for WB and EB left turns)  
 Option 6 - Split intersection for WB/Diamond Interchange for EB  
 Option 7 - Echelon  
 Option 8 - Traditional Diamond  
 Option 9 - Single Point Urban Interchange

**WCR 11.5**  
 Option 1 - No Action  
 Option 2 - Signalize when warranted with future development  
 Option 3 - Roundabout

**WCR 11**  
 Option 1 - No Action  
 Option 2 - Signalize when warranted with future development  
 Option 3 - Roundabout

**WCR 13/Colorado Boulevard**  
 Option 1 - No Action  
 Option 2 - Grade-separate  
 Option 3 - Add capacity improvements  
 Option 4 - Roundabout  
 Option 5 - Partial Displaced Left Turn (for WB and EB left turns)  
 Option 6 - Split intersection for WB/Diamond Interchange for EB  
 Option 7 - Echelon  
 Option 8 - Traditional Diamond  
 Option 9 - Single Point Urban Interchange

**Future WCR 15**  
 Option 1 - No Action  
 Option 2 - Move J-Bar-B-Road west to section line (WCR 15), full movement access and signalize if warranted with future development  
 Option 3 - Roundabout

**WCR 17-North Side**  
 Option 1 - No Action  
 Option 2 - Signalize if warranted; capacity improvements  
 Option 3 - Roundabout  
 Option 4 - Channelized T

**LEGEND**

Expressway	Future Connection
Rural/Regional Highway	16' Access Road with Advisory Shoulder
Arterial	10' Bike and Pedestrian Path
X = Number of Thru Lanes	Frontage Road
WCR = Weld County Road	PEL Proposed Options





SECTION 5B





### 3. PEL Recommendations, Right of Way Preservation, and Prioritization of Improvements

Chapter 3 includes detailed two-page plans for each section of the SH 66 corridor. These plans are intended to provide substantive information about PEL findings and recommendations in a meaningful and easy to process manner.

#### Plan-on-a-Page Content

The plans document the following information for each section:

- ▶ Overview of section context and recommendations
- ▶ Summary of local agency planning efforts from **Appendix C**
- ▶ Existing and proposed roadway classification graphical definitions
- ▶ Recommended future corridor cross sections
- ▶ An overview of the recommended ROW preservation footprint
- ▶ Existing and proposed corridor visualizations
- ▶ Planned improvements, phasing, and prioritization covering roadway, bicycle, pedestrian, and transit options

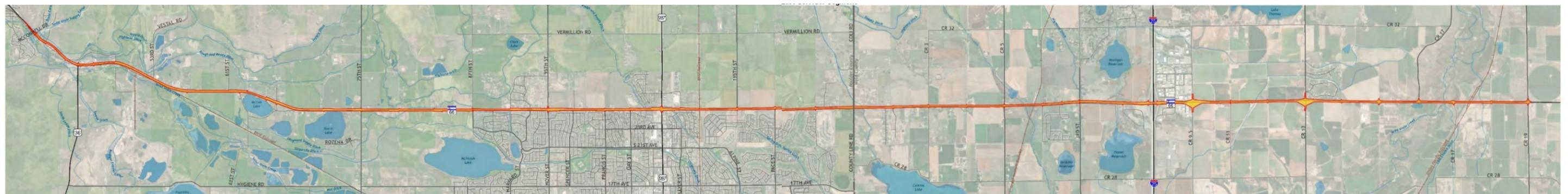
#### PEL Recommendations and Right of Way Preservation

- ▶ In accordance with FHWA direction, this PEL recommendation ultimately includes a ROW preservation footprint (**Figure 14**).
- ▶ This footprint is considered the collective footprint of all options that have been carried forward as PEL Proposed Options. This common footprint of alternatives represents ROW that would be necessary to accommodate the aggregate of:
  - Ultimate roadway laneage
  - Intersection configurations
  - Bicycle, pedestrian, and transit facilities along SH 66
- ▶ This footprint is intended to inform decision-making at the state and local level in terms of preserving land and making land use decisions to not preclude future transportation improvements that have been identified in this PEL study.
- ▶ The footprint width for each section generally corresponds with cross-section widths from each plan, but expansion of the footprint occurs around intersections.
- ▶ **Appendix I** provides a detailed mapbook of the footprint, along with parcel information. **Appendix I** also includes a package of digital files that allow communities, developers, and stakeholders to view the ROW preservation footprint interactively. File formats include:
  - DWG – Computer aided design and drafting file
  - KML – Google Earth® file
  - Shapefile package – Geographic Information Systems package

#### Prioritization of Potential Improvements

- ▶ An important component of a PEL is a summary of project priorities. Prioritization aids decision-makers in evaluating when and how to implement potential improvements. These potential improvements were prioritized based on when safety and operational needs will likely warrant the recommended changes.
- ▶ PELs are long-term planning documents. As a result, prioritizations for SH 66 are shown in the context of:
  - Near-term as 0-10 years
  - Mid-term as 5-15 years
  - Long-term as 10-20 years
  - Beyond the planning horizon as more than 20 years
- ▶ The prioritization terms intentionally overlap because of uncertain funding availability and because of how rapidly corridor growth and development will occur. These terms are intended to be flexible prioritizations that accommodate future conditions.
- ▶ In terms of next steps, CDOT and local agencies will continue collaborating to identify funding sources and funding partnerships. SH 66 improvements may be implemented as smaller projects or in phases.
- ▶ If corridor conditions change beyond the land use, travel demand, and community priorities identified in this PEL, this prioritization may be subject to change. One example of potential change is addressed in **Chapter 5**, in terms of operational threats.

Figure 14. ROW Preservation Footprint Overview



This PEL ROW preservation footprint represents the collective footprint of all options that have been carried forward as PEL proposed options. Appendix I includes a detailed mapbook showing this footprint relative to parcel boundaries



**SH 66 Planning and  
Environmental Linkages Study**

This page intentionally left blank.





Section 1: McConnell Drive to 87th Street

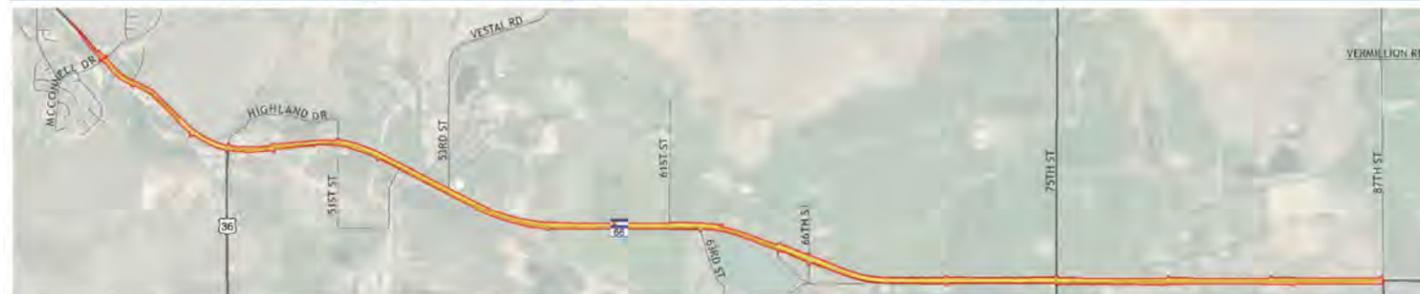
Overview & Recommendations

- **Local agencies:** Town of Lyons and Unincorporated Boulder County
  - **Known transportation problems:** Vehicular access, mobility, and safety; bicycle and pedestrian connections and safety, bicycle crossings
  - **Existing roadway classification and laneage:** Rural/Regional Highway with two to five lanes
  - **Recommended roadway classification:**
    - Arterial roadway from McConnell Drive to Highland Drive (Section 1A)
    - Rural/Regional Highway from Highland Drive through 75th Street (Section 1B) and 75th Street through 87th Street (Section 1C)
  - **Total recommended cross section width:** 101 feet to 138 feet
  - **Total right of way preservation acreage:** 99.6 acres
- **Recommended cross sections include:**
    - Four 12-foot travel lanes with a raised 16-foot median and curb and gutter (Section 1A)
    - Two 12-foot travel lanes with turn lanes at intersections and right-of-way preservation for potential multimodal and safety transportation improvements (Sections 1B and 1C)
    - Curb and gutter and bike lanes along SH 66 (Section 1A)
    - Either a 10-foot bike and pedestrian path or a 16-foot access road with advisory shoulders along SH 66 (Section 1B and 1C)
    - A five-foot offset to clear zone (a clear zone is an unobstructed, traversable roadside area that allows a driver to stop safely or regain control of a vehicle that has left the roadway) in areas that are not curb & gutter

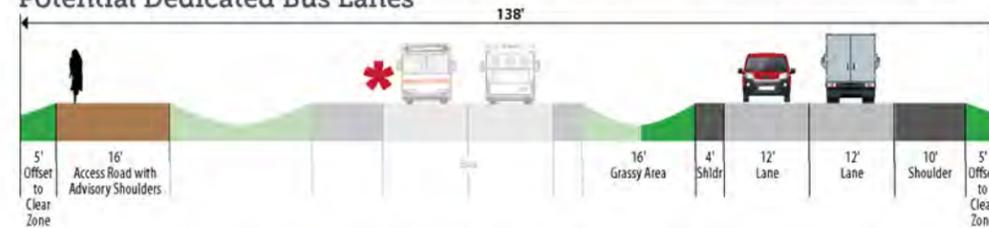
Recommended Roadway Classification

	DESCRIPTION	ACCESS SPACING
<b>ARTERIAL</b> 	Moderate to low travel speeds and traffic volumes with moderate access	1/2 mile for full movement intersections, with possible 3/4 movement at quarter miles, and RIRO access for each parcel (should share access if possible)
<b>RURAL/REGIONAL HIGHWAY</b> 	Moderate to high speeds with moderate to low traffic volumes	1/2 mile + for full movement intersections with public roadways, maximum of one access per parcel (depending on other roadways that could preclude access) with shared access preferable

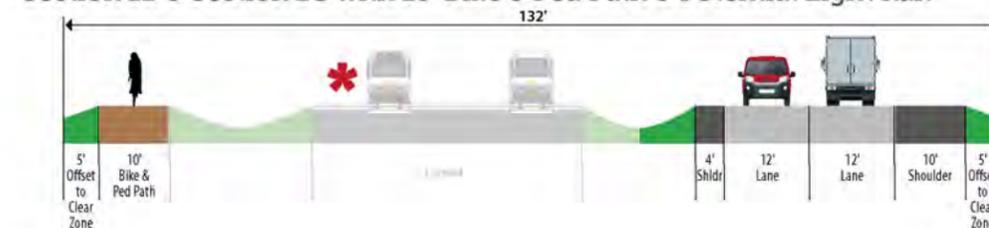
Recommended Right-of-Way Preservation Footprint



Section 1B & Section 1C with 16' Access Road with Advisory Shoulders with Potential Dedicated Bus Lanes

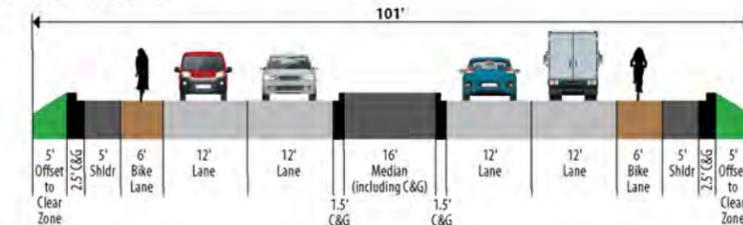


Section 1B & Section 1C with 10' Bike & Ped Path & Potential Light Rail

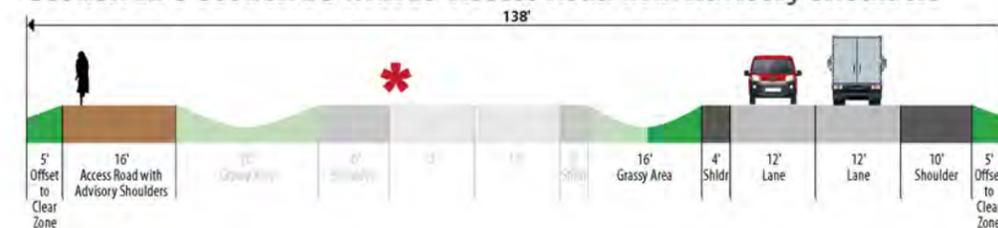


Recommended Cross Sections (facing east)

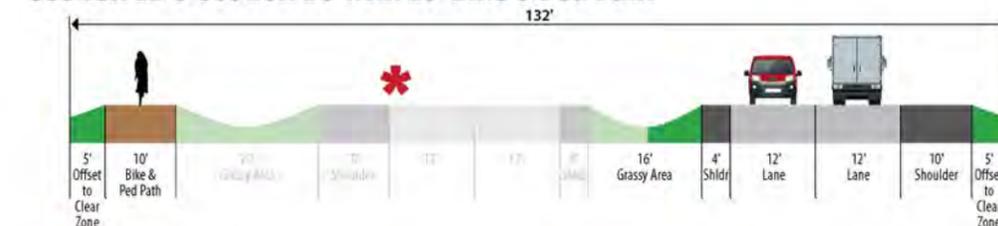
Section 1A with Curb & Gutter



Section 1B & Section 1C with 16' Access Road with Advisory Shoulders



Section 1B & Section 1C with 10' Bike & Ped Path



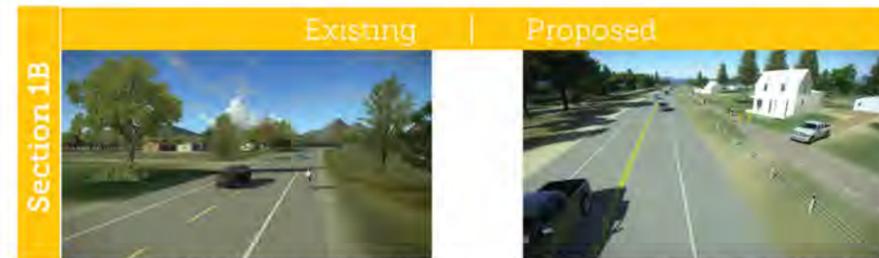
\* Right-of-way preservation for potential multi-modal and safety transportation improvements

## Existing & Proposed Visualizations (facing west)



Center left turn lane

Raised median with left turn lanes and bike lanes



No median separation and minimal turn lanes

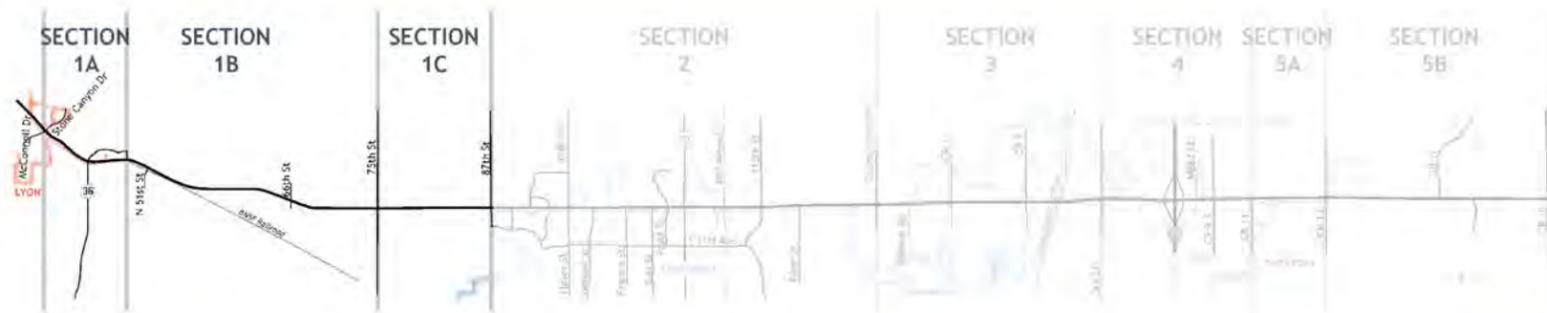
Two through lanes, wide shoulders, and access road with advisory shoulders; with turn lanes at intersections



No median separation and minimal turn lanes

Two through lanes, wide shoulders and side path; with turn lanes at intersections

## Improvements



**TRANSPORTATION CONSIDERATIONS:**  
The access road with advisory shoulders option is not an approved treatment in the Manual on Uniform Traffic Control Devices and would require a 'request for experiment' to implement. The proposed bicycle and pedestrian path and access road with advisory shoulders must be accommodated with safety in mind within the highway clear zone and at all intersection crossings along the corridor.

**ENVIRONMENTAL CONSIDERATIONS:**  
Resources include floodplains and floodway, potential wetlands, Preble's Meadow Jumping Mouse habitat, potential bald eagle nest sites, parks and open space, proposed trails, utilities, noise sensitive areas, hazardous materials sites, visual resources, and potential historic sites.

Near-Term 0-10 years	LOCATION ON SH 66 (intersection or section)		
	IDENTIFIED PROBLEM	RECOMMENDED IMPROVEMENT	
1A	McConnell Drive to Highland Drive East	High rate of access-related crashes; high-use bike corridor with limited shoulders	Install raised median and restrict and/or consolidate accesses. Install rumble strips or bike lanes
1A	US 36	Lacks safe facility/crossing for bicycles and pedestrians	Construct grade-separated underpass for bicycle and pedestrians
1B	Section-wide	High rate of run-off-road crashes	Install rumble strips
1B	Section-wide	Lacks consolidated access and regional bicycle and pedestrian mobility options	Install access road with advisory shoulders, add right and left turn lanes at those accesses; and install sidepath
1B	75th Street	High rate of intersection-related crashes	Re-assess signal timing. Install bicycle and pedestrian grade-separated crossing
1C	Section-wide	High rate of run-off-road crashes; lacks consolidated access and regional bicycle and pedestrian mobility options	Install rumble strips. Install access road with advisory shoulders, add right and left turn lanes at those accesses; and install sidepath

Mid-Term 5-15 years	LOCATION ON SH 66 (intersection or section)		
	IDENTIFIED PROBLEM	RECOMMENDED IMPROVEMENT	
1B	Section-wide	High delays for vehicles entering SH 66 from accesses	Construct missing Sections of access road with advisory shoulders, and/or bike/ped only connections. Include shoulder widening. Work with local agencies to construct trail along BNSF
1C	Section-wide	High delays for vehicles entering SH 66 from accesses	Construct missing Sections of access road with advisory shoulders, and/or bike/ped only connections. Include shoulder widening

Long-Term 10-20 years	LOCATION ON SH 66 (intersection or section)		
	IDENTIFIED PROBLEM	RECOMMENDED IMPROVEMENT	
1B	Section-wide	Lacks regional bicycle and pedestrian mobility options	Work with local agencies to install trail along SH 66
1C	53rd Street	Lacks safe facility/crossing for bicycles and pedestrians	Install bicycle and pedestrian grade-separated crossing

Beyond Horizon Year +20 years	LOCATION ON SH 66 (intersection or section)		
	IDENTIFIED PROBLEM	RECOMMENDED IMPROVEMENT	
1B	Section-wide	Multi-modal and vehicular transportation concerns	Multi-modal and safety transportation improvements
1C	Section-wide	Multi-modal and vehicular transportation concerns	Multi-modal and safety transportation improvements

## Local Agency Planning Efforts



- Lyons vision for:**
- Business district along SH 66
  - US 36/SH 66 roundabout
  - Gateway features at US 36/SH 66 and east of US 36 along SH 66



- Boulder County vision for:**
- Improve bus service and stops, park and ride capacity, and local transit connections; add queue jump lanes
  - Incorporate bikeable shoulders and key grade separated crossings
  - Enhance intersections to improve safety and convenience for all modes and to reduce congestion



For more information, please view the SH 66 PEL Corridor Conditions Report (Appendix C).

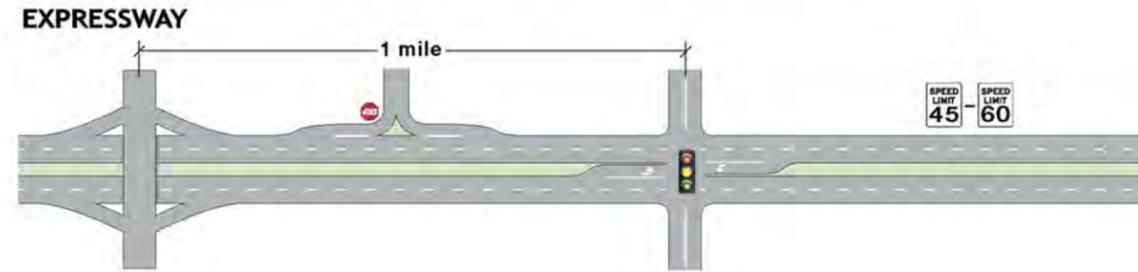


Section 2: 87th Street to County Line Road

Overview & Recommendations

- ❑ **Local agencies:** City of Longmont and Unincorporated Boulder County
- ❑ **Known transportation problems:** Vehicular access, mobility, and safety; bicycle and pedestrian mobility and safety; transit access
- ❑ **Existing roadway classification and laneage:** Non-rural principal highway with two to four lanes
- ❑ **Recommended roadway classification:** Expressway
- ❑ **Total recommended cross section width:** 109 feet to 145 feet
- ❑ **Total right of way preservation acreage:** 82.8 acres
- ❑ **Recommended cross sections include:**
  - Four travel lanes (two 12-foot lanes in each direction)
  - A 16-foot wide median (raised with curb and gutter)
  - Five-foot outside shoulders
  - A 10-foot bike and pedestrian path on one or both sides of the road
  - A 16-foot frontage road along SH 66 in select locations
  - A five-foot offset to clear zone (a clear zone is an unobstructed, traversable roadside area that allows a driver to stop safely or regain control of a vehicle that has left the roadway)
  - Addition of turn lanes at intersections

Recommended Roadway Classification



DESCRIPTION	ACCESS SPACING
Moderately high speeds and traffic volumes with limited access, multiple lanes in each direction and separated directional travel	1 mile + for full movement, with possible RIRO at half mile

Local Agency Planning Efforts



- Longmont vision for:**
- Side path from 87th Street to County Line Road
  - Two underpasses at SH 66/US 287 and SH 66/Pace Street
  - Tie bike lanes into north-south routes along SH 66
  - SH 66/US 287 Park-n-Ride
  - Active participation with CDOT for multi-modal plan



- Boulder County vision for:**
- Improve bus service and stops, park and ride capacity, and local transit connections; add queue jump lanes
  - Incorporate bikeable shoulders and key grade separated crossings
  - Enhance intersections to improve safety and convenience for all modes and to reduce congestion



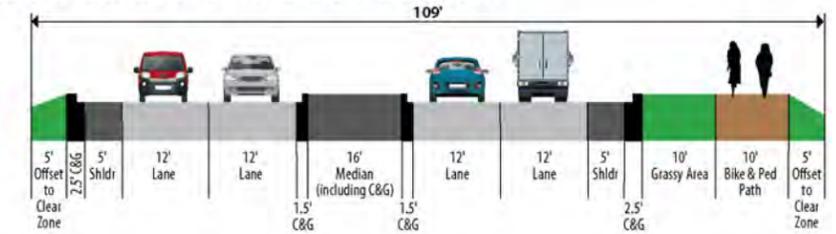
For more information, please view the SH 66 PEL Corridor Conditions Report (Appendix C).

Recommended Right-of-Way Preservation Footprint

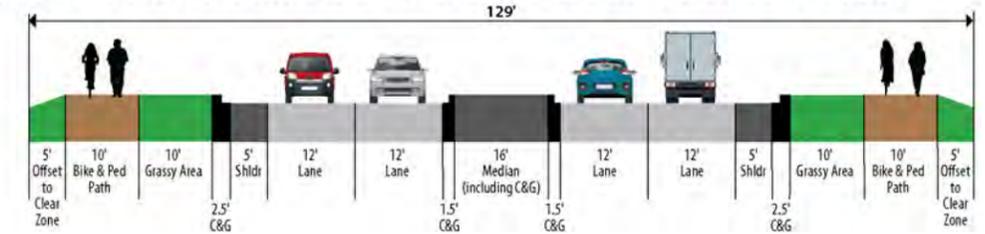


Recommended Cross Sections (facing east)

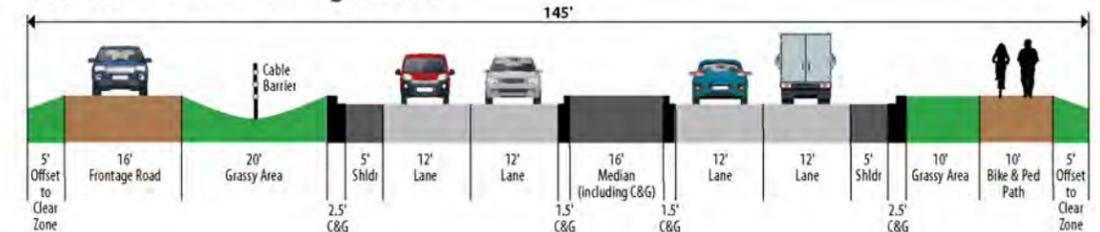
Section 2 with Curb & Gutter and 10' Bike & Ped Path



Section 2 with Curb & Gutter and 10' Bike & Ped Path on North & South



Section 2 with Frontage Road



## Existing & Proposed Visualizations (facing west)



## Improvements



**TRANSPORTATION CONSIDERATIONS:** The proposed bicycle and pedestrian paths must be accommodated with safety in mind within the highway clear zone and by providing clearly marked crosswalks at intersections. A variety of intersection types and innovations developed during Level 3 could accommodate future traffic conditions, including:

**ENVIRONMENTAL CONSIDERATIONS:** Resources include floodplains and floodway, potential wetlands, Preble's Meadow Jumping Mouse habitat, potential bald eagle nest sites, parks and open space, proposed trails, utilities, noise sensitive areas, hazardous materials sites, visual resources, and potential historic sites.

- SH 66 and Hover/95th Street: Partial displaced left turn (for westbound to southbound left); fully displaced left turn; grade-separation, such as echelon, single point urban interchange, or diamond interchange; junior interchange in the northeast quadrant.
- SH 66 and US 287: fully displaced left turn; grade-separation, such as echelon, single point urban interchange, or diamond interchange; split intersection for westbound/diamond interchange for eastbound.

Near-Term 0-10 years	LOCATION ON SH 66 (intersection or section)			IDENTIFIED PROBLEM	RECOMMENDED IMPROVEMENT
	2	Section-wide	High delay on stop-controlled intersections	Restrict left turns out where identified in the ACP. Install sidepath on the south side of SH 66. Monitor and/or perform a warrant analysis at intersections where signals are planned in the ACP (Airport Road, Francis St, Alpine St, Sundance Dr)	
	2	Hover St/95th Street	Failing intersection LOS and high rate of intersection-related crashes	Add auxiliary lanes and capacity	
	2	SH 66 from Hover St to US 287	Failing intersection LOS and long queues approaching Hover St and US 287 (typically in the eastbound direction)	Expand SH 66 to four lanes plus auxiliary lanes between Hover/95th St and US 287. Install median and implement access control where there are high delays and/or high crash rates on side streets	
	2	US 287	Failing intersection LOS and high rate of intersection-related crashes; multiple public comments/concerns received	Improve intersection; recommend carrying forward displaced left turn or other alternative intersection option	
	2	Alpine Street to County Line Rd	Failing intersection LOS at County Line Rd, high rate of intersection-related crashes, and high rate of head-on and run-off-road crashes	Improve SH 66 from 2 to 4 lanes, add a median, and install auxiliary lanes at intersections between Alpine St and County Line Road	

Mid-Term 5-15 years	LOCATION ON SH 66 (intersection or section)			IDENTIFIED PROBLEM	RECOMMENDED IMPROVEMENT
	2	Section-wide	High delay on stop-controlled intersections	Monitor and restrict left turns out where identified in the ACP and a documented safety need is shown. Include shoulder widening. Install sidepath on the north side of SH 66. Monitor and/or perform a warrant analysis at intersections where signals are identified as allowed in the ACP (Airport Road, Francis St, Alpine St, Sundance Dr)	
	2	Erfert St to Alpine St	Over capacity as a two-lane highway	Grade-separate SH 66 over railroad, improve the highway from 2 to 4 lanes, add a median, and install turn lanes where warranted at intersection.	

Long-Term 10-20 years	LOCATION ON SH 66 (intersection or section)			IDENTIFIED PROBLEM	RECOMMENDED IMPROVEMENT
	2	Section-wide	High delay on stop-controlled intersections	Monitor and restrict left turns out where identified in the ACP and a documented safety need is shown. Monitor and/or perform a warrant analysis at intersections where signals are identified as allowed in the ACP (Airport Road, Francis St, Alpine St, Sundance Dr)	
	2	87th Street to 95th Street	Over capacity as a two-lane highway	Improve the highway from 2 to 4 lanes, add a median, and install turn lanes where warranted at intersections	
	2	BNSF and Pace	Lacks safe facility/crossing for bicycles and pedestrians	Install bicycle and pedestrian grade-separated crossing lanes where warranted at intersections	
2	BNSF and Pace	Lacks safe facility/crossing for bicycles and pedestrians	Install bicycle and pedestrian grade-separated crossing		

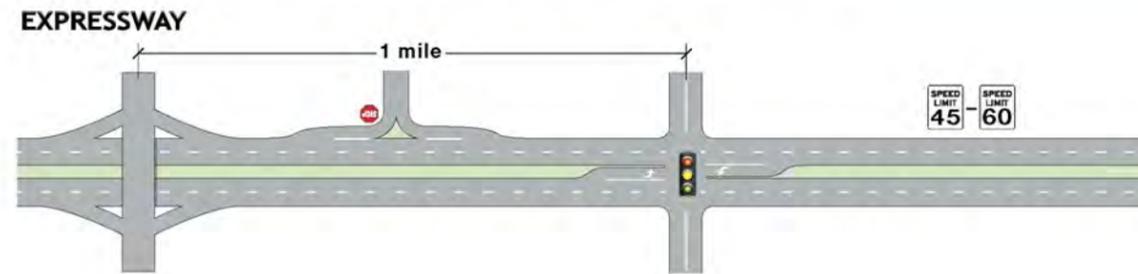


Section 3: County Line Road to 3rd Street (WCR 7)

Overview & Recommendations

- **Local agencies:** City of Longmont, Town of Mead, and Unincorporated Weld County
- **Known transportation problems:** Vehicular access, mobility, and safety; bicycle connections and safety
- **Existing roadway classification and laneage:** Rural/regional highway with two lanes
- **Recommended roadway classification:** Expressway
- **Total recommended cross section width:** 122 feet
- **Total right of way preservation acreage:** 45.3 acres
- **Recommended cross section includes:**
  - Four travel lanes (two 12-foot lanes in each direction)
  - A 16-foot wide grassy median with cable barrier
  - A 10-foot bike and pedestrian path along SH 66
  - 10-foot shoulders
  - A five-foot offset to clear zone (a clear zone is an unobstructed, traversable roadside area that allows a driver to stop safely or regain control of a vehicle that has left the roadway)
  - Addition of turn lanes at intersections

Recommended Roadway Classification



DESCRIPTION	ACCESS SPACING
Moderately high speeds and traffic volumes with limited access, multiple lanes in each direction and separated directional travel	1 mile + for full movement, with possible RIRO at half mile

Local Agency Planning Efforts



- Longmont vision for:**
- Tie bike lanes into north-south routes along SH 66
  - Active participation with CDOT for multi-modal plan

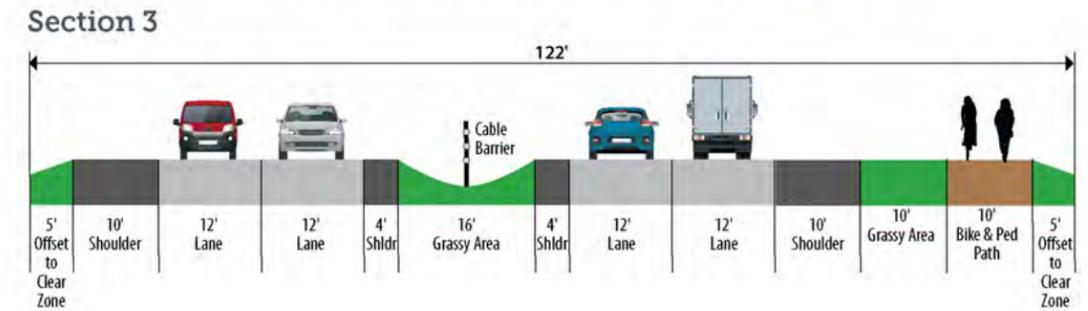


- Mead vision for:**
- Gateways at SH 66/WCR 1 (County Line Road) and SH 66/WCR 7 (3rd Street)
  - SH 66/3rd Street intersection improvements and signalization
  - Widen SH 66
  - Proposed trail



- Weld County vision for:**
- Trail connections
  - Access control
  - Intersection improvement partnership SH 66/WCR 7 (3rd Street)

Recommended Cross Section (facing east)



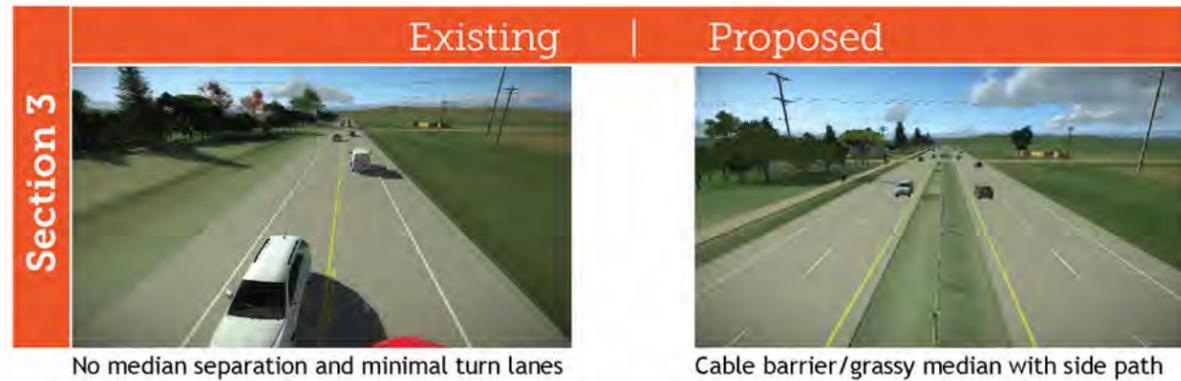
For more information, please view the SH 66 PEL Corridor Conditions Report (Appendix C).

Recommended Right-of-Way Preservation Footprint





## Existing & Proposed Visualizations (facing west)



No median separation and minimal turn lanes

Cable barrier/grassy median with side path

## Improvements



**TRANSPORTATION CONSIDERATIONS:** The proposed bicycle and pedestrian path must be accommodated with safety in mind within the highway clear zone and by providing clearly marked crosswalks at intersections. A variety of intersection types and innovations developed during Level 3 could accommodate future traffic conditions at SH 66 and County Line Road, including capacity improvements to add turn lanes and acceleration lanes; fully displaced left turn; or grade-separation, such as echelon, single point urban interchange, or diamond interchange.

**ENVIRONMENTAL CONSIDERATIONS:** Resources include potential wetlands, proposed trails, utilities (including oil/gas production facilities), noise sensitive areas, hazardous material sites, visual resources, and potential historic resources.

Near-Term 0-10 years	LOCATION ON SH 66 (intersection or section)		
	IDENTIFIED PROBLEM	RECOMMENDED IMPROVEMENT	
3	Section-wide	High rate of run-off-road and access-related crashes	Install rumble strips along corridor; add auxiliary lanes where warranted at intersections
3	Section-wide	High delay on stop-controlled intersections	Restrict left turns out where identified in the ACP and a documented safety need is shown. Monitor and/or perform a warrant analysis where signals are planned in the ACP (WCR 3, WCR 5, WCR 5.5 (interim condition only))

Long-Term 10-20 years	LOCATION ON SH 66 (intersection or section)		
	IDENTIFIED PROBLEM	RECOMMENDED IMPROVEMENT	
3	WCR 5	Lacks safe facility/crossing for bicycles and pedestrians	Install bicycle and pedestrian grade-separated crossing east of WCR 5
3	Section-wide	High delay on stop-controlled intersections	Monitor and restrict left turns out where identified in the ACP and a documented safety need is shown. Monitor and/or perform a warrant analysis where signals are identified as allowed in the ACP (WCR 3, WCR 5, WCR 5.5 (interim condition only))

Mid-Term 5-15 years	LOCATION ON SH 66 (intersection or section)		
	IDENTIFIED PROBLEM	RECOMMENDED IMPROVEMENT	
3	Section-wide	High delay on stop-controlled intersections	Monitor and restrict left turns out where identified in the ACP and a documented safety need is shown. Include shoulder widening. Install sidepath. Monitor and/or perform a warrant analysis where signals are identified as allowed in the ACP (WCR 3, WCR 5, WCR 5.5 (interim condition only))
3	County Line Road to WCR 7	Over capacity as a two-lane highway	Improve the highway from 2 to 4 lanes, add a median, and install turn lanes where warranted at intersections



Section 4: 3rd Street (WCR 7) to Weld County Road 11

Overview & Recommendations

- **Local agencies:** Town of Mead and Unincorporated Weld County
- **Known transportation problems:** Access, mobility, and safety concerns for vehicles, bicycles, pedestrians, and transit
- **Existing roadway classification and laneage:** Non-rural Principal Highway with two to three lanes east of I-25; four to five lanes west of I-25
- **Recommended roadway classification:** Arterial roadway
- **Total recommended cross section width:** 133 feet to 143 feet
- **Total right of way preservation acreage:** 45.2 acres
- **Recommended cross sections include:**
  - Six travel lanes (three 12-foot lanes in each direction) and five-foot outside shoulders
  - A raised 16-foot wide median
  - Curb and gutter along SH 66
  - A 10-foot bike and pedestrian path along SH 66 setback 5 feet from SH 66 on both sides of SH 66 at select locations
  - A 5-foot offset to clear zone (a clear zone is an unobstructed, traversable roadside area that allows a driver to stop safely or regain control of a vehicle that has left the roadway)
  - Addition of turn lanes at intersections

Local Agency Planning Efforts



Mead vision for:

- Gateways at I-25/SH 66, and SH 66/WCR 7 (3rd Street)
- SH 66/3rd Street intersection improvements and signalization
- Widen SH 66
- Proposed trail connections



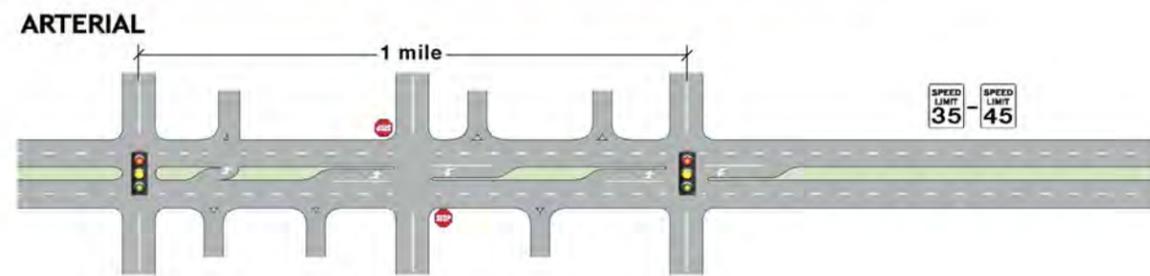
Weld County vision for:

- Trail connections
- Access control
- Intersection improvement partnership at SH 66/WCR 7 (3rd Street)



For more information, please view the SH 66 PEL Corridor Conditions Report (Appendix C).

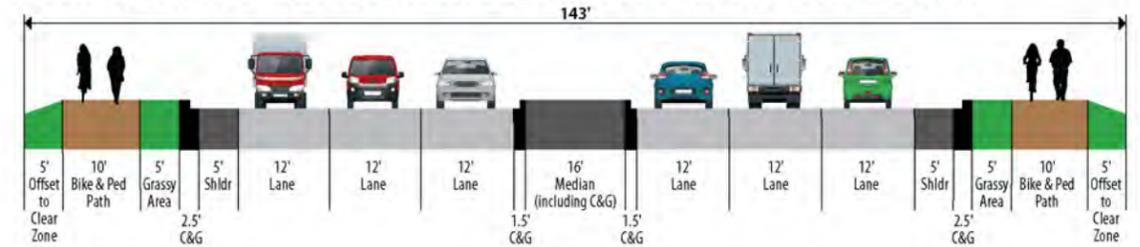
Recommended Roadway Classification



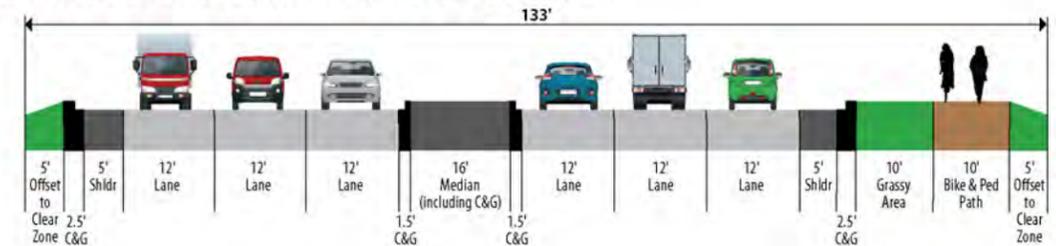
DESCRIPTION	ACCESS SPACING
Moderate to low travel speeds and traffic volumes with moderate access	1/2 mile for full movement intersections, with possible 3/4 movement at quarter miles, and RIRO access for each parcel (should share access if possible)

Recommended Cross Sections (facing east)

Section 4 with Curb & Gutter and Bike & Ped Path on North & South



Section 4 with Curb & Gutter and Bike & Ped Path

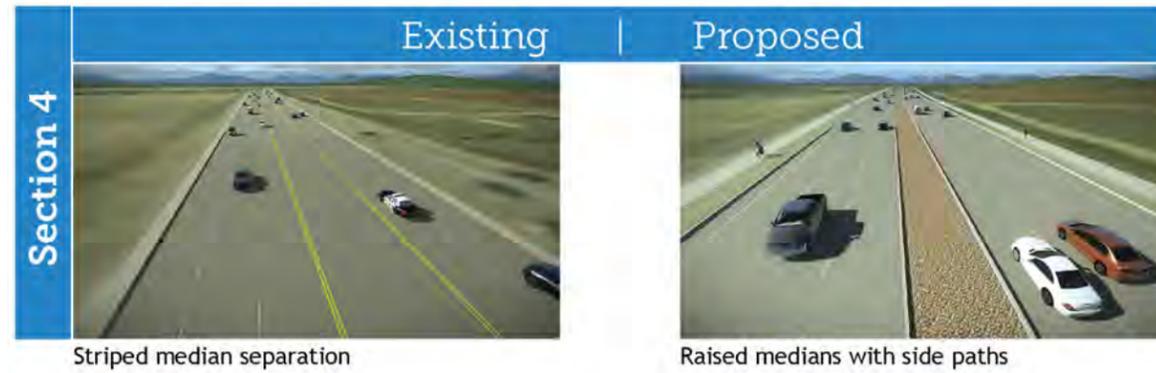


Recommended Right-of-Way Preservation Footprint





## Existing & Proposed Visualizations (facing west)



## Improvements



**TRANSPORTATION CONSIDERATIONS:** The proposed bicycle and pedestrian path must be accommodated with safety in mind within the highway clear zone and by providing clearly marked crosswalks at intersections. A variety of intersection types and innovations developed during Level 3 could accommodate future traffic conditions at SH 66 and WCR 9.5, including split intersection for westbound/diamond interchange for eastbound; partial or fully displaced left turn; or grade-separation, such as echelon, single point urban interchange, or diamond interchange.

**ENVIRONMENTAL CONSIDERATIONS:** Resources include potential wetlands, proposed trails, utilities (including oil/gas production facilities), noise sensitive areas, hazardous material sites, visual resources, and potential historic resources.

Near-Term 0-10 years	LOCATION ON SH 66 (intersection or section)		
	IDENTIFIED PROBLEM	RECOMMENDED IMPROVEMENT	
4	Section-wide	Lacks regional bicycle and pedestrian mobility options	Install sidepath on north side of SH 66
4	WCR 7	Failing intersection LOS	Add auxiliary lanes and capacity on SH 66 and/or CR 7 (design currently underway by CDOT/nearby developers)
4	Mead Street	High delay at stop-controlled intersection and high crash rate	Restrict left turns out if a documented safety need is shown

Long-Term 10-20 years	LOCATION ON SH 66 (intersection or section)		
	IDENTIFIED PROBLEM	RECOMMENDED IMPROVEMENT	
4	Section-wide	Over capacity as a two-lane highway	Improve the highway from 4 to 6 lanes between WCR 7 and WCR 9.5. Install sidepath on south side of SH 66. Install bicycle and pedestrian grade-separate crossing east of WCR 7
4	WCR 9.5	Intersection over capacity	Grade-separate intersection; recommend carrying forward split intersection/partial interchange or other alternative intersection option

Mid-Term 5-15 years	LOCATION ON SH 66 (intersection or section)		
	IDENTIFIED PROBLEM	RECOMMENDED IMPROVEMENT	
4	Section-wide	Lacking safe shoulders to accommodate vehicles, bicycles, and pedestrian	Include shoulder widening
4	Gap Section between WCR 7 and Foster Ridge Dr	Over capacity as a two-lane highway	Improve the highway from 2 to 4 lanes, add a median, and install turn lanes where warranted at intersections. Signalize Foster Ridge Dr when warranted
4	WCR 9.5 to WCR 11	Over capacity as a two-lane highway	Improve the highway from 2 to 4 lanes, add a median, and install turn lanes where warranted at intersections
4	Mead Street	High delay at stop-controlled intersection and high crash rate	Monitor intersection operations and restrict left turns out if a documented safety need is shown
4	WCR 9.5	Failing intersection LOS	Add turn lanes and capacity to intersection

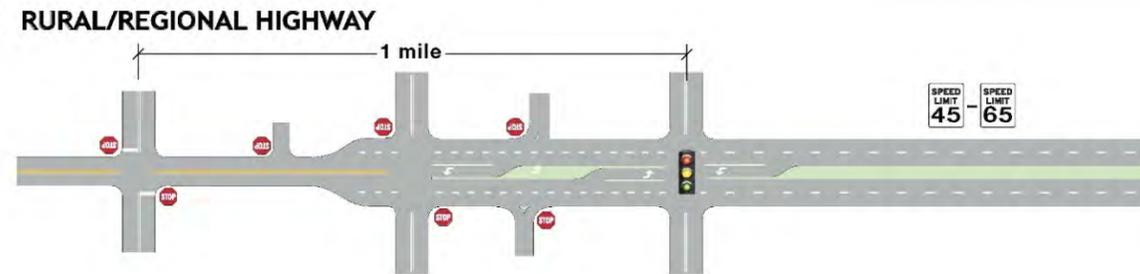


Section 5: Weld County Road 11 to Weld County Road 19

Overview & Recommendations

- **Local agencies:** Town of Mead and Unincorporated Weld County
- **Known transportation problems:** Vehicular access, mobility, and safety; bicycle and pedestrian mobility and safety
- **Existing roadway classification and laneage:** Non-rural Principal Highway and Rural/Regional Highway with two lanes
- **Recommended roadway classification:** Rural/Regional Highway
- **Total recommended cross section width:** 122 feet
- **Total right of way preservation acreage:** 67.9 acres
- **Recommended cross section includes:**
  - Four travel lanes (two 12-foot lanes in each direction)
  - A 16-foot wide grassy median with cable barrier
  - A 10-foot bike and pedestrian path along SH 66
  - 10-foot shoulders
  - A five-foot offset to clear zone (a clear zone is an unobstructed, traversable roadside area that allows a driver to stop safely or regain control of a vehicle that has left the roadway)
  - Addition of turn lanes at intersections

Recommended Roadway Classification



**DESCRIPTION**  
Moderate to high speeds with moderate to low traffic volumes

**ACCESS SPACING**  
1/2 mile + for full movement intersections with public roadways, maximum of one access per parcel (depending on other roadways that could preclude access) with shared access preferable

Local Agency Planning Efforts



Mead vision for:

- Widen SH 66
- Proposed trail connections



Weld County vision for:

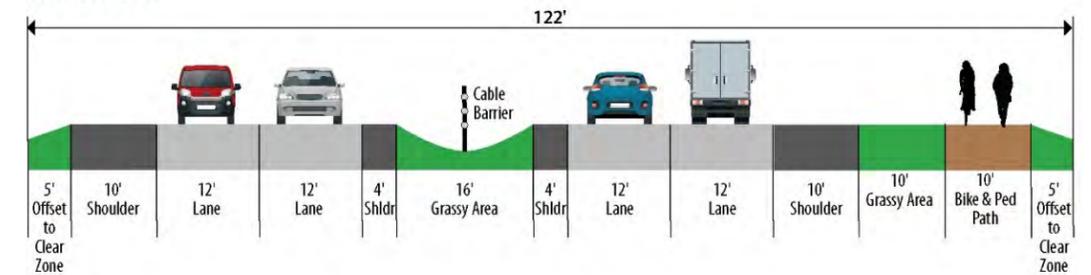
- Trail connections
- Access control
- Intersection improvement partnerships at SH 66/ WCR 13



For more information, please view the SH 66 PEL Corridor Conditions Report (Appendix C).

Recommended Cross Section (facing east)

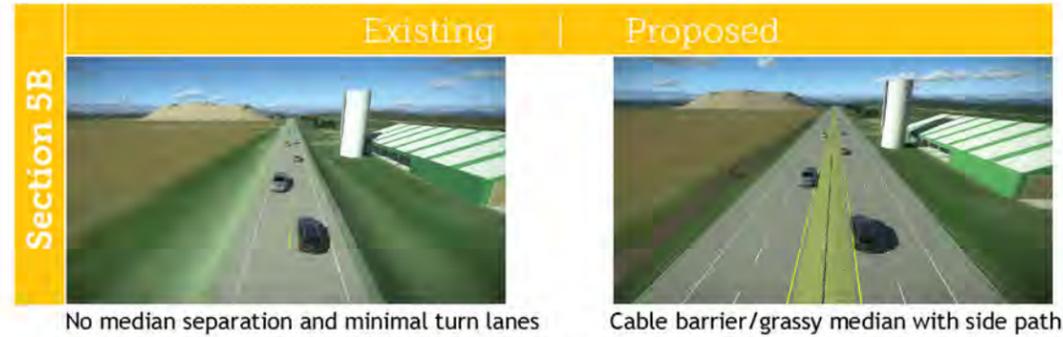
Section 5



Recommended Right-of-Way Preservation Footprint



## Existing & Proposed Visualizations (facing west)



## Improvements



**TRANSPORTATION CONSIDERATIONS:**  
 A variety of intersection types and innovations developed during Level 3 could accommodate future traffic conditions at SH 66 and WCR 13/Colorado Blvd., including split intersection for westbound/diamond interchange for eastbound; partial or fully displaced left turn lane; or grade-separation, such as echelon, single point urban interchange, or diamond interchange.

**ENVIRONMENTAL CONSIDERATIONS:**  
 Resources include floodplains and floodway, potential wetlands, Preble's Meadow Jumping Mouse habitat, potential bald eagle nest sites, parks and open space, proposed trails, utilities, noise sensitive areas, hazardous materials sites, areas with higher minority and low-income populations, visual resources, and potential historic sites.

Near-Term 0-10 years	LOCATION ON SH 66 (intersection or section)			IDENTIFIED PROBLEM	RECOMMENDED IMPROVEMENT
	5A	Section-wide	High delay at stop-controlled intersection	Monitor and/or perform a warrant analysis at intersections where signals are planned in the ACP (WCR 11, WCR 11.5 when constructed)	
	5A	Section-wide	High rate of run-off-road and access-related crashes	Install rumble strips and widen shoulders	
	5B	Section-wide	High rate of run-off-road and access-related crashes	Install rumble strips and widen shoulders	
	5B	WCR 13	High crash rate at WCR 13	Install eastbound and westbound right turn lane	

Long-Term 10-20 years	LOCATION ON SH 66 (intersection or section)			IDENTIFIED PROBLEM	RECOMMENDED IMPROVEMENT
	5A	Section-wide	High delay at stop-controlled intersection	Monitor and/or perform a warrant analysis at intersections where signals are identified as allowed in the ACP (WCR 11, WCR 11.5 when constructed). Install sidepath on south side of SH 66	
	5B	Section-wide	High delay at stop-controlled intersection	Monitor and/or perform a warrant analysis at intersections where signals are identified as allowed in the ACP (WCR 11, WCR 19, WCR 11.5 when constructed). Install sidepath on south side of SH 66	

Mid-Term 5-15 years	LOCATION ON SH 66 (intersection or section)			IDENTIFIED PROBLEM	RECOMMENDED IMPROVEMENT
	5A	Section-wide	High delay at stop-controlled intersection	Monitor and/or perform a warrant analysis at intersections where signals are identified as allowed in the ACP (WCR 11, WCR 11.5 when constructed)	
	5A	WCR 11 to WCR 13	Over capacity as a two-lane highway	Improve the highway from 2 to 4 lanes, add a median, and install turn lanes where warranted at intersections	
	5B	Section-wide	High delay at stop-controlled intersection	Monitor and/or perform a warrant analysis at intersections where signals are identified as allowed in the ACP (WCR 11, WCR 19, WCR 11.5 when constructed). Install sidepath on south side of SH 66	

Beyond Horizon Year +20 years	LOCATION ON SH 66 (intersection or section)			IDENTIFIED PROBLEM	RECOMMENDED IMPROVEMENT
	5	Section-wide	Over capacity as a two-lane highway	Increase capacity of highway from 2 to 4 lanes	
5	WCR 13	Intersection over capacity	Grade-separate intersection		



## 4. Affected Environment, Environmental Consequences, and Mitigation Strategies

The *SH 66 PEL Corridor Conditions Report (Appendix C)* summarizes environmental resources in the study area. This chapter provides a planning level overview of anticipated impacts associated with the PEL Recommendations. Data used in this assessment were derived from readily available data sources and environmental field visits during development of the *Corridor Conditions Report*.



For more baseline environmental information, view the *SH 66 PEL Corridor Conditions Report (Appendix C)*.

### How is PEL environmental documentation used?

As funding becomes available for implementation of PEL Recommendations, CDOT will determine the appropriate level of NEPA study that is required as part of project delivery. This PEL information serves to inform that process and provide a baseline understanding for decision makers, stakeholders, and the public about sensitive environmental resources.

### Potential NEPA Documentation Next Steps

Based on the level of NEPA study and environmental context of each project, some or all resources identified in this chapter may need to be addressed during project delivery, once funds become available. NEPA involves an assessment of the affected environment (existing conditions), anticipated environmental impacts, and environmental mitigation commitments. Depending on project context and complexity, NEPA involves:

- ▶ **Categorical exclusions (CatEx):** For actions that do not individually or cumulatively result in significant impacts; involves a focused assessment of resources based on scoping coordination with CDOT
- ▶ **Environmental assessments (EA):** For actions that may individually or cumulatively result in significant impacts; prepared when there is insufficient information to determine if a project's impacts warrant further study
- ▶ **Environmental impact statements (EIS):** For projects that are anticipated to have significant impacts and/or a high level of controversy

### Environmental Impacts Evaluation

- ▶ A quantitative evaluation, using GIS spatial analysis, was completed for:
  - Floodplains and Floodways
  - Wetlands and Other Waters of the US
  - T&E Species, Species of Special Concern, Migratory Birds and Eagles
  - Park/Trail/Open Space Resources and Wildlife/Waterfowl Refuges
- ▶ A qualitative assessment, using professional judgment, was completed for:
  - Utilities
  - Traffic Noise
  - Hazardous Materials
  - Environmental Justice
  - Visual Resources
  - Historic Resources
- ▶ Potential impacts are summarized in **Table 2**.

### How were environmental impacts analyzed in this PEL Study?

**Chapter 3** describes the ROW preservation footprint, which represents the collective area of SH 66 PEL options that were recommended or carried forward as a result of this PEL study. Impact analyses included an evaluation of this footprint relative to mapped environmental resources as shown in **Appendix C**.

### Environmental Resource Next Steps

- ▶ **Floodplains and Floodways:** Design solutions should minimize impacts to the floodplain and be developed cooperatively with US Army Corps of Engineers (USACE), Federal Emergency Management Agency, and affected communities. If an alternative encroaches on a regulatory floodway/floodplain, an evaluation is necessary to determine if the encroachment would require a revision to the regulatory floodway (impacts to floodplains may require a Conditional Letter of Map Revision). For alternatives with significant impacts, discuss practicable alternatives or mitigation.
- ▶ **Wetlands and Other Waters of the US:** When wetland impacts are expected, build adequate time into the design schedule to allow a wetland delineation and consequent permitting.
- ▶ **T&E Species, Species of Special Concern, Migratory Birds and Eagles:** When wildlife impacts are expected, build adequate time into the design schedule to consider temporary and permanent impacts and allow time for a biological resources report, Senate Bill 40 reporting, consultation, and consequent permitting. Consider the development of wildlife crossings or fencing with future projects.
- ▶ **Park/Trail/Open Space Resources and Wildlife/Waterfowl Refuges:** When Section 4(f) and Section 6(f) evaluations are necessary, build adequate time into the design schedule to avoid construction delays. Design modifications and/or mitigation considerations may be necessary in the Section 4(f) process. If a Section 6(f) conversion of land is necessary, CDOT must replace the land. The local agency, Colorado Parks and Wildlife (CPW), and the National Park Service must approve the replacement land. Typically, replacement occurs at a 1:1 ratio.



### Environmental Resource Next Steps (Continued)

- ▶ **Utilities:** During the design phase, identify and evaluate all utilities (not just major utilities) for impacts from proposed improvements, determine location time requirements and cost responsibility, and obtain the project utility clearance from CDOT. When project-funded relocations are necessary, adequate budget must be made available. Build adequate time and construction phasing into the schedule to allow utility relocations to avoid construction delays. Adherence to the new subsurface utility engineering statute may be necessary. **Appendix J** includes additional information.
- ▶ **Traffic Noise:** Conduct a traffic noise impact and abatement analysis for NEPA. If noise abatement appears likely, solicit the Benefited Receptor Preferences Survey after the Final Office Review but during the NEPA process (for projects anticipated to meet CatEx criteria) or during final design for an EA or an EIS. If a simple majority of benefitting receptors favors abatement, then the project becomes committed to constructing and funding the abatement measure(s). Noise walls may cost about \$2 million per mile. The likelihood for abatement to be feasible and reasonable increases with a higher density of impacted receptors.
- ▶ **Hazardous Materials:** If a Phase II Environmental Site Assessment (ESA) and/or remediation activities are required based on a Modified Environmental Site Assessment (MESA), Initial Site Assessment, or Phase I ESA findings, there may be substantial delays for property acquisition or construction in the vicinity. Also, a Phase II ESA and remedial activities could require additional funding. These activities are associated with the acquisition of properties. Regarding construction phase implications, hazardous materials concerns within the construction area will require the use of CDOT Standard Specification 250: Environmental, Health and Safety Management. A Materials Management Plan should also be used if construction activities are anticipated to encounter hazardous materials.
- ▶ **Environmental Justice:** Identify low-income and minority populations early so that these populations can become involved and have a meaningful opportunity to participate during every phase of a project. Specialized outreach may be necessary based on the extent of anticipated impacts and stakeholder concerns. In addition, the Project Team will need to determine whether language assistance measures are needed to ensure meaningful access to the process. Consideration of businesses and community facilities important to low-income, minority, and limited English proficiency populations is also critical.
- ▶ **Visual Resources:** The interdisciplinary project team should work with CDOT early (during project scoping) to complete CDOT's visual resources scoping documentation. This scoping process determines the level of visual impact assessment, establishes a study area, identifies visual resource issues and associated regulations, and initiates public contact.
- ▶ **Historic Resources:** Design solutions should seek ways to avoid or minimize impacts to historic resources in any way possible. For alternatives with significant impacts, discuss practicable alternatives or mitigation. Evaluate sites identified as potential historic resources for NRHP eligibility to determine historic status.



### Other Potential Environmental Resource Next Steps

Additional resource considerations may be warranted during future transportation improvements along SH 66. Scoping should occur in coordination with CDOT staff. NEPA evaluation may be required for future SH 66 projects in compliance with applicable regulations. Other resources to consider include the following.

- ▶ **Paleontology:** Before any construction activity, complete a desktop literature review and museum record search to identify geological formations within the corridor that are likely to contain fossils. If the desktop review reveals sensitive areas in the corridor, surveying and potential construction monitoring may be necessary. Clearance from CDOT may be required.
- ▶ **Archaeology:** Conduct a file search through the Office of Archaeology and Historic Preservation’s online Compass database to identify all previously recorded sites and surveys within 0.5 mile of the corridor. If the desktop review reveals sensitive areas in the corridor, surveying and potential construction monitoring may be necessary. Clearance from the State Historic Preservation Office (SHPO) may be required.
- ▶ **Farmlands:** If farmland of importance or prime farmland is found within the corridor, consider and take care to minimize overall impacts to prime farmland during design and construction. Clearance from the U.S. Department of Agriculture – Natural Resources Conservation Service may be necessary.
- ▶ **Air Quality:** The entire study area is included in the Denver Ozone Nonattainment Area, portions of the study area are in the Denver Particulate Matter 10 Attainment/Maintenance Areas, and portions of the study area are in the Longmont Carbon Monoxide (CO) Attainment/Maintenance Area. Project level conformity analyses (40 CFR 93) will be required for those areas from a regional and/or local perspective. Additional air quality analysis (mobile source air toxics and greenhouse gases) applies statewide to projects (primarily if the project is at the EA or EIS level). Clearance from the Colorado Department of Public Health and Environment’s Air Pollution Control Division may be required.

### Environmental Resource Agency Coordination

- ▶ During the PEL process, CDOT consulted with environmental resource agencies, including:
  - Colorado Department of Public Health and Environment (CDPHE)
  - CPW
  - Environmental Protection Agency (EPA)
  - SHPO
  - USACE
  - US Fish & Wildlife Service (USFWS)
- ▶ These agencies reviewed the *Corridor Conditions Report* during summer 2017 and were given an opportunity to provide comments. Agency comments were addressed and incorporated in the final *Corridor Conditions Report* (Appendix C). Agency correspondence is included in Appendix F-1.



### Additional NEPA and Environmental Requirements

- ▶ Individual projects must be evaluated under NEPA (most likely as a CatEx or EA) and should contribute to meeting purpose and need for SH 66.
- ▶ Resultant mitigation commitments must be implemented during the phase/project in which impacts occur.
- ▶ Fiscal constraint requirements must be satisfied for FHWA and CDOT to approve further NEPA documentation, which involves project inclusion in the fiscally constrained Regional Transportation Plan and fiscally constrained Transportation Improvement Program (TIP).
- ▶ In cases where corridor improvements are implemented in more than one phase/project, care must be taken to ensure that the transportation system operates acceptably at the conclusion of each phase/project (i.e., the project must demonstrate independent utility).

### How are cumulative impacts included in PELs?

Cumulative impacts are combined, incremental effects of human activity. They may be insignificant by themselves, but cumulative impacts accumulate over time, from one or more sources, and can result in degradation of important resources. The goal of considering cumulative impacts in a PEL study is to look broadly at future land use, development, population increases, and other growth factors.

### Cumulative Impacts Next Steps

As projects are implemented, this information can aid in assessing cumulative effects.

- ▶ **Geographic context for future analysis:** The boundary for traffic assessments (e.g., the extent of traffic analysis zones) may be a reasonable study boundary for future SH 66 projects, given the influence of land use and development near SH 66.
- ▶ **Actions that may contribute to cumulative effects:** Past, present, and reasonably foreseeable future actions should be assessed. Population increases and land development are considerations for cumulative impact analysis, given the increasing and projected growth trends in northern Colorado along the Front Range.
- ▶ **Resources sensitive to cumulative impacts:** Project teams should coordinate with CDOT to confirm scope. Resources that may be vulnerable to cumulative impacts could include floodplains, wetlands, traffic noise, and historic resources.

### Cumulative Impacts Resource Considerations

- ▶ **Floodplains and Floodways:** St. Vrain Creek is the major watershed along SH 66. Cumulative impacts to the floodplain primarily would result from alterations to the floodplain caused by development already planned in the study area. Future project improvements should consider potential cumulative impacts to floodplains and floodways.
- ▶ **Wetlands and Other Waters of the US:** Agricultural practices and land development in the SH 66 PEL study area have increased over time. Activities causing soil erosion and changes to the water table lead to cumulative impacts to wetlands and waters of the US. Future project improvements should consider potential cumulative impacts to wetlands and other waters of the US.
- ▶ **T&E Species, Species of Special Concern, Migratory Birds and Eagles:** Agriculture and urbanization activities along the SH 66 corridor have impacted wildlife corridors, movement, and distribution of sensitive threatened and endangered species in the past. Future land use changes and alteration to natural vegetation and open space proximity may lead to cumulative impacts to wildlife species. When project improvements are implemented, consideration should be given for potential cumulative impacts to threatened and endangered species, species of special concern, migratory birds and Eagles.
- ▶ **Park/Trail/Open Space Resources and Wildlife/Waterfowl Refuges:** Recreation and open space resources are dedicated and preserved in Boulder County. Weld County also has resources that may have recreational and open space values. Surrounding land use changes could affect the character of parks and open space. These resources should be evaluated during NEPA to identify potential cumulative impacts.
- ▶ **Traffic Noise:** Noise levels along SH 66 continue to increase with changing land use and as urbanization spreads from Longmont and Lyons. Vehicular traffic increases, oil and gas development, and farming activities also continue to shape noise levels in the study area. Future project improvements should consider potential cumulative impacts from traffic noise levels.
- ▶ **Hazardous Materials:** Past development and urbanization are expected to continue along the SH 66 corridor. These changes in land use may include facilities with hazardous materials. If contaminated areas are acquired for transportation purposes, CDOT policies and mandates for remediation may contribute to restoring past damages to the environment. Future project improvements should consider hazardous materials cumulative impacts.
- ▶ **Environmental Justice:** Areas adjacent to Longmont were identified as having the greatest potential for impacts to low-income and minority populations. When project-specific roadway improvements move forward in the future, consideration should be given for potential cumulative impacts to low-income and minority populations.
- ▶ **Visual Resources:** Urbanization has increased along the SH 66 PEL study area over time, changing the visual setting of the corridor. As future project-specific roadway improvements are planned and implemented, consideration should be made regarding potential cumulative impacts to the visual character of the area.
- ▶ **Historic Resources:** Residential and commercial development continue to expand along SH 66, particularly adjacent to Longmont. In combination, future project improvements may have the potential for cumulative impacts on historic properties. Additional review will be required through NEPA.



**Table 2. Potential Environmental Impacts**

Resource	Anticipated Impacts		
<b>Section 1</b>			
Floodplains and Floodways	<ul style="list-style-type: none"> <li>0.07 acre of floodway</li> <li>3.6 acres of 100-yr floodplain</li> <li>3.9 acres of 500-yr floodplain</li> </ul>		
Wetlands and Other Waters of the US	<ul style="list-style-type: none"> <li>2,022 ft of streams</li> <li>1.8 acres of potential wetlands</li> <li>0.82 acre of wetlands</li> </ul>		
T&E Species, Species of Special Concern, Migratory Birds and Eagles	<ul style="list-style-type: none"> <li>36.3 acres of Preble's Meadow Jumping Mouse habitat</li> <li>Intersection with overland habitat connectors, active Bald Eagle nest site area, and undetermined/unknown Bald Eagle nest site area</li> </ul>		
Park/Trail/Open Space Resources and Wildlife/Waterfowl Refuges	<ul style="list-style-type: none"> <li>2.51 acres of park and open space</li> <li>73.3 feet of existing trail</li> <li>470 feet of proposed trail</li> </ul>		
Utilities	<ul style="list-style-type: none"> <li>26 major utilities, including communication, irrigation ditch(es), electric and gas transmission, and water</li> <li>13 utility owners</li> </ul>		
Traffic Noise	<ul style="list-style-type: none"> <li>Includes noise sensitive areas and individual homes and businesses</li> <li>Potential impacts at dispersed rural/large lot residences and in medium density residential neighborhoods</li> <li>Potential impacts at recreational and historic sites</li> </ul>		
Hazardous Materials	<ul style="list-style-type: none"> <li>303(d) rivers/streams, including St. Vrain Creek</li> <li>2 LUST sites, 3 industrial sites, 2 water treatment facilities, 5 other sites of concern, including AST/UST, and historic auto sites</li> </ul>		
Environmental Justice	<ul style="list-style-type: none"> <li>11 to 20 percent minority population in Section 1 Census blocks</li> <li>Between 11 and 40 percent low-income population in Section 1 Census blocks</li> <li>Lower potential to cause disproportionately high or adverse impacts to low-income and/or minority populations</li> </ul>		
Visual Resources	<ul style="list-style-type: none"> <li>Low to moderate potential for visual impacts, depending on potential improvement and location/context</li> <li>Includes access consolidation and at-grade transportation improvements</li> </ul>		
Historic Resources	<ul style="list-style-type: none"> <li>Potential for direct and/or indirect impacts at properties meeting the 45-year threshold for NRHP</li> <li>NRHP-eligible resources include:               <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> <li>5BL.241.1 Sites Milkhouse</li> <li>5BL.241.15 Montgomery School</li> <li>5BL.374 Burlington Northern Railroad</li> <li>5BL.3113 Rough and Ready Ditch</li> <li>5BL.3114 Highland Ditch</li> </ul> </td> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> <li>5BL.3115 Palmerton Ditch</li> <li>5BL.4248 Montgomery Farm</li> <li>5BL.4476 Longmont Supply Canal</li> <li>5BL.4832 Oligarchy Ditch</li> <li>5BL.6987 McIntosh/Lohr Farm</li> </ul> </td> </tr> </table> </li> </ul>	<ul style="list-style-type: none"> <li>5BL.241.1 Sites Milkhouse</li> <li>5BL.241.15 Montgomery School</li> <li>5BL.374 Burlington Northern Railroad</li> <li>5BL.3113 Rough and Ready Ditch</li> <li>5BL.3114 Highland Ditch</li> </ul>	<ul style="list-style-type: none"> <li>5BL.3115 Palmerton Ditch</li> <li>5BL.4248 Montgomery Farm</li> <li>5BL.4476 Longmont Supply Canal</li> <li>5BL.4832 Oligarchy Ditch</li> <li>5BL.6987 McIntosh/Lohr Farm</li> </ul>
<ul style="list-style-type: none"> <li>5BL.241.1 Sites Milkhouse</li> <li>5BL.241.15 Montgomery School</li> <li>5BL.374 Burlington Northern Railroad</li> <li>5BL.3113 Rough and Ready Ditch</li> <li>5BL.3114 Highland Ditch</li> </ul>	<ul style="list-style-type: none"> <li>5BL.3115 Palmerton Ditch</li> <li>5BL.4248 Montgomery Farm</li> <li>5BL.4476 Longmont Supply Canal</li> <li>5BL.4832 Oligarchy Ditch</li> <li>5BL.6987 McIntosh/Lohr Farm</li> </ul>		

Resource	Anticipated Impacts
<b>Section 2</b>	
Floodplains and Floodways	<ul style="list-style-type: none"> <li>None</li> </ul>
Wetlands and Other Waters of the US	<ul style="list-style-type: none"> <li>2,251 ft of streams</li> <li>0.23 acre of potential wetlands</li> <li>0.7 acre of wetlands</li> </ul>
T&E Species, Species of Special Concern, Migratory Birds and Eagles	<ul style="list-style-type: none"> <li>Intersection with active Bald Eagle nest site area</li> </ul>
Park/Trail/Open Space Resources and Wildlife/Waterfowl Refuges	<ul style="list-style-type: none"> <li>0.34 acre of park and open space</li> <li>No existing or proposed trails</li> </ul>
Utilities	<ul style="list-style-type: none"> <li>21 major utilities, including communication, irrigation ditch(es), gas transmission, storm sewer, and water</li> <li>13 utility owners</li> </ul>
Traffic Noise	<ul style="list-style-type: none"> <li>Includes noise sensitive areas, individual homes and businesses, and individual places of worship</li> <li>Potential impacts to residential neighborhoods and medium/high density residential neighborhoods</li> <li>Potential impacts at recreational and historic sites</li> </ul>
Hazardous Materials	<ul style="list-style-type: none"> <li>Ten sites of concern, including SEMS, AST/UST, LUST, Historic Auto, and Industrial sites</li> <li>Cluster of sites near SH 66/US 287</li> </ul>
Environmental Justice	<ul style="list-style-type: none"> <li>Between 11 and greater than 60 percent minority population in Section 2 Census blocks</li> <li>Between 11 and 80 percent low-income population in Section 2 Census blocks</li> <li>Higher potential to impact minority and low-income populations; Make considerations to avoid causing disproportionately high or adverse impacts to low-income and/or minority populations</li> </ul>
Visual Resources	<ul style="list-style-type: none"> <li>Low to moderate or moderate to high potential for visual impacts, depending on potential improvement and location/context</li> <li>Includes access modifications/consolidations, at grade intersection improvements, and potential grade-separated improvements</li> </ul>
Historic Resources	<ul style="list-style-type: none"> <li>Potential for direct and/or indirect impacts at properties meeting the 45-year threshold for NRHP</li> <li>NRHP-eligible resources include:               <ul style="list-style-type: none"> <li>5BL.3113 Rough and Ready Ditch</li> <li>5BL.4476 Longmont Supply Canal</li> <li>5BL.6938 Nishida Farms</li> </ul> </li> </ul>

Notes: LUST = leaking underground storage tank  
 AST = above ground storage tank  
 UST = underground storage tank  
 SEMS = Superfund Enterprise Management System  
 NRHP = National Register of Historic Places

Resource	Anticipated Impacts
<b>Section 3</b>	
Floodplains and Floodways	<ul style="list-style-type: none"> <li>None</li> </ul>
Wetlands and Other Waters of the US	<ul style="list-style-type: none"> <li>514.3 ft of streams</li> <li>0.98 acre of potential wetlands</li> <li>0.96 acre of wetlands</li> </ul>
T&E Species, Species of Special Concern, Migratory Birds and Eagles	<ul style="list-style-type: none"> <li>Intersection with active Bald Eagle nest site area</li> </ul>
Park/Trail/Open Space Resources and Wildlife/Waterfowl Refuges	<ul style="list-style-type: none"> <li>No parks or open space</li> <li>243 feet of proposed trail</li> </ul>
Utilities	<ul style="list-style-type: none"> <li>8 major utilities, including communication, electric transmission, and sanitary sewer</li> <li>5 utility owners</li> </ul>
Traffic Noise	<ul style="list-style-type: none"> <li>Includes noise sensitive areas and individual homes and businesses</li> <li>Potential impacts at dispersed rural/large lot residences and in medium density residential neighborhoods</li> </ul>
Hazardous Materials	<ul style="list-style-type: none"> <li>3 oil and gas wells</li> <li>Three 303(d) water bodies and/or rivers/stream</li> <li>1 SEMS site</li> </ul>
Environmental Justice	<ul style="list-style-type: none"> <li>11 to 20 percent minority population in Section 3 Census blocks</li> <li>11 to 20 percent low-income population in Section 3 Census blocks</li> <li>Lower potential to cause disproportionately high or adverse impacts to low-income and/or minority populations</li> </ul>
Visual Resources	<ul style="list-style-type: none"> <li>Low to moderate or moderate to high potential for visual impacts, depending on potential improvement and location/context</li> <li>Includes access modifications/consolidations, at-grade intersection improvements, and potential grade-separated improvements</li> </ul>
Historic Resources	<ul style="list-style-type: none"> <li>Potential for direct and/or indirect impacts at properties meeting the 45-year threshold for NRHP:               <ul style="list-style-type: none"> <li>5WL.841 Great Western Railroad</li> <li>5WL.2181 Highland Canal Lateral</li> <li>5WL.4300 Pleasant Hill School/Liberty Hall Grange</li> </ul> </li> </ul>

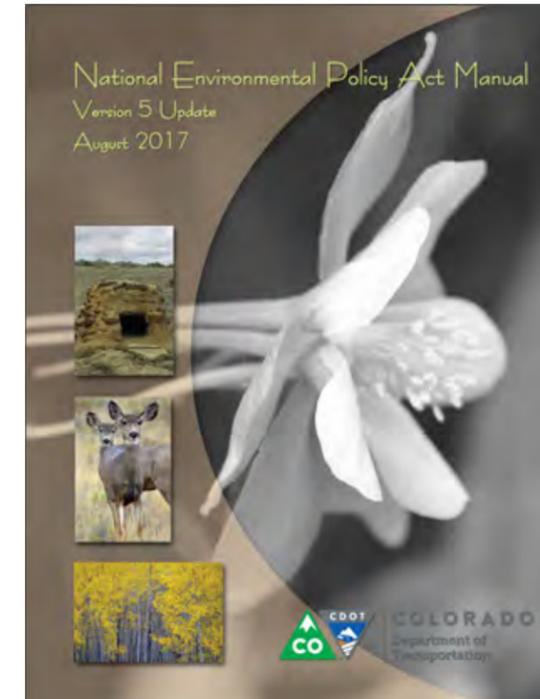


## SH 66 Planning and Environmental Linkages Study

**Table 2. Potential Environmental Impacts (Continued)**

Resource	Anticipated Impacts
<b>Section 4</b>	
Floodplains and Floodways	<ul style="list-style-type: none"> <li>None</li> </ul>
Wetlands and Other Waters of the US	<ul style="list-style-type: none"> <li>2,427 ft of streams</li> <li>1.6 acres of potential wetlands</li> <li>0.73 acre of wetlands</li> </ul>
T&E Species, Species of Special Concern, Migratory Birds and Eagles	<ul style="list-style-type: none"> <li>None</li> </ul>
Park/Trail/Open Space Resources and Wildlife/Waterfowl Refuges	<ul style="list-style-type: none"> <li>No parks or open space</li> <li>310 feet of proposed trail</li> </ul>
Utilities	<ul style="list-style-type: none"> <li>6 major utilities, including communication, irrigation ditch(es), petroleum/natural gas, and water</li> <li>7 utility owners</li> </ul>
Traffic Noise	<ul style="list-style-type: none"> <li>Includes noise sensitive areas and individual homes and businesses</li> <li>Potential impacts at dispersed rural/large lot residences and at businesses along SH 66</li> </ul>
Hazardous Materials	<ul style="list-style-type: none"> <li>Dispersed oil and gas wells</li> <li>7 other sites of concern, including AST/UST, LUST, Historic Auto, and Industrial sites</li> <li>Cluster of sites near SH 66/Mead Street intersection</li> </ul>
Environmental Justice	<ul style="list-style-type: none"> <li>11 to 20 percent minority population in Section 4 Census blocks</li> <li>Between 11 and 40 percent low-income population in Section 4 Census blocks</li> <li>Lower potential to cause disproportionately high or adverse impacts to low-income and/or minority populations</li> </ul>
Visual Resources	<ul style="list-style-type: none"> <li>Low to moderate or moderate to high potential for visual impacts, depending on potential improvement and location/context</li> <li>Includes access modifications/consolidations, at-grade intersection improvements, and potential grade-separated improvements</li> </ul>
Historic Resources	<ul style="list-style-type: none"> <li>Potential for direct and/or indirect impacts at properties meeting the 45-year threshold for NRHP:               <ul style="list-style-type: none"> <li>5WL.1978 Rademacher-Hilgers Residence</li> </ul> </li> </ul>

Resource	Anticipated Impacts
<b>Section 5</b>	
Floodplains and Floodways	<ul style="list-style-type: none"> <li>11.6 acres of 100-yr floodplain</li> </ul>
Wetlands and Other Waters of the US	<ul style="list-style-type: none"> <li>726 ft of streams</li> <li>2.24 acres of potential wetlands</li> <li>1.28 acres of wetlands</li> </ul>
T&E Species, Species of Special Concern, Migratory Birds and Eagles	<ul style="list-style-type: none"> <li>Intersection with active Bald Eagle nest site area</li> </ul>
Park/Trail/Open Space Resources and Wildlife/Waterfowl Refuges	<ul style="list-style-type: none"> <li>No parks or open space</li> <li>3,124 feet of proposed trail</li> </ul>
Utilities	<ul style="list-style-type: none"> <li>11 major utilities, including communication, electric and gas transmission, petroleum/natural gas, sanitary sewer, and water</li> <li>7 utility owners</li> </ul>
Traffic Noise	<ul style="list-style-type: none"> <li>Includes noise sensitive areas and individual homes and businesses</li> <li>Potential impacts at dispersed rural/large lot residences and at businesses along SH 66</li> </ul>
Hazardous Materials	<ul style="list-style-type: none"> <li>Dispersed oil and gas wells</li> <li>2 industrial sites</li> <li>1 LUST site</li> <li>Two 303(d) impaired water bodies</li> </ul>
Environmental Justice	<ul style="list-style-type: none"> <li>Between 11 and greater than 60 percent minority population in Section 5 Census blocks</li> <li>Between 11 and 40 percent low-income population in Section 5 Census blocks</li> <li>Higher potential to impact minority populations; make considerations to avoid causing disproportionately high or adverse impacts to low-income and/or minority populations</li> </ul>
Visual Resources	<ul style="list-style-type: none"> <li>Low to moderate or moderate to high potential for visual impacts, depending on potential improvement and location/context</li> <li>Includes access modifications/consolidations, at-grade intersection improvements, and potential grade-separated improvements</li> </ul>
Historic Resources	<ul style="list-style-type: none"> <li>No previously determined NRHP-eligible resources were identified</li> <li>Several irrigation ditches and old farm complexes line this section of the study area and will require additional survey and evaluation to determine NRHP eligibility</li> </ul>



Project teams should coordinate with CDOT and consult CDOT's NEPA Manual for more information about environmental next steps.





## 5. Risk and Resiliency

Given the increasing prevalence of extreme weather events and risks associated with human activities, planning for resiliency is gaining increasing recognition as an important consideration in infrastructure development and operations. Some transportation officials across the country and internationally have begun to plan and design transportation infrastructure with more focus on risk and resiliency.

These types of considerations are distinct from responding to an emergency event (such as an automobile accident or a medical emergency). CDOT's goal in this assessment is to inform planning decisions and incorporate resiliency considerations where transportation assets may be vulnerable to risk in the context of two distinct considerations: physical threats and operational threats.

### What is resiliency?

"Resiliency is the ability of communities to rebound, positively adapt to, or thrive amidst changing conditions or challenges – including disaster and climate change – and maintain quality of life, healthy growth, durable systems, and conservation of resources for present and future generations." – Colorado Resiliency Working Group

### What are physical threats?

Physical threats are considered natural hazards or human caused hazards that could shut down a highway for more than four hours (Figure 15). Physical threats analyzed as part of this SH 66 process (Figure 16) are considered in the context of being location-specific (i.e., the threat may occur at a specific site) or corridor-wide (i.e., the threat may occur anywhere along the corridor).

### Summary of Physical Threats Evaluated

Location-specific threats include:

- ▶ **Bridge scour from floods**  erosion of soil supporting a SH 66 bridge structure and causing structural damage
- ▶ **Debris flows**  moving mass of loose mud, sand, soil, rock, and water down a slope toward SH 66
- ▶ **Landslides/rockfalls**  moving mass of earth or rock from a mountain or cliff toward SH 66
- ▶ **Bridge strikes**  truck collision with a SH 66 bridge causing structural damage
- ▶ **Railroad proximity**  train derailment affecting SH 66 or stalled train blocking SH 66 operations

Corridor-wide threats include:

- ▶ **Fires**   wildfires or range fires burning along or near SH 66
- ▶ **Tornadoes/high winds**  strong gusts/storms causing SH 66 infrastructure damage
- ▶ **Utility rupture**  explosion or sink hole on or along SH 66
- ▶ **Visibility**  intense fog or ground level cloud cover along SH 66
- ▶ **Cyber**  attack on CDOT's intelligent transportation system infrastructure along SH 66
- ▶ **Hazardous Materials**  spill of hazardous materials or waste on or along SH 66

Key:

Natural hazard 

Human caused hazard 

Figure 15. Physical Threat Examples



### Supporting Documentation

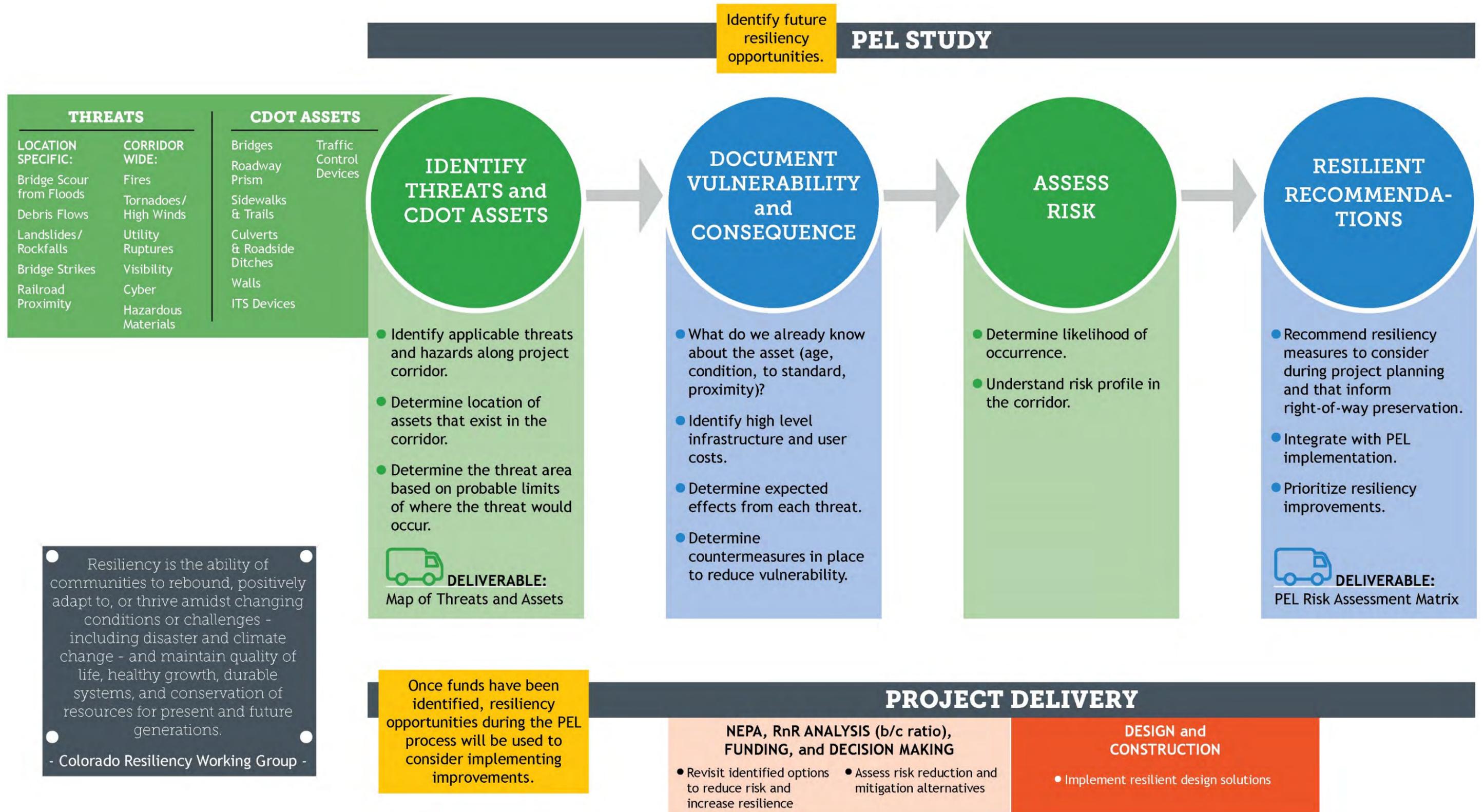
- ▶ **Appendix K Physical Threats Risk and Resiliency Assessment:** Presents technical detail, including cost calculations and detailed maps

### Physical Threats Overview and Recommendations

- ▶ For location-specific threats, 11 threat areas were evaluated (**Appendix K**) to assess zones of potential floods, debris flow/landslides/rock falls, railroad conflicts, an overhead pipe, bridge strikes, and wildfires.
  - These areas were evaluated in the context of:
    - *Consequence* — Costs for CDOT to replace the asset and time and resources spent on out-of-direction travel for motorists/travelers
    - *Vulnerability* — Probability of the threat occurring should the threat be realized
    - *Risk* — Consideration of threat, consequence, and vulnerability in the context of one another
    - *Criticality* — Relative importance of SH 66 (AEM 2018)
    - *Prioritization* — Documentation that assets and/or areas of SH 66 should receive funding and action in the context of risk and resiliency
    - *Recommendations* — Considerations for CDOT that would build resiliency into SH 66
  - The highest priority threat areas include risk area ID 2 (along the St. Vrain River in Weld County), risk area ID 9 (the overpass structure at SH 66 and I-25), and Risk Area ID 10 (the bridge over the St. Vrain River in Weld County).
  - The lowest priority threat area is risk area ID 5 (the BNSF Railway crossing with SH 66 in Longmont).
  - **Figure 17** includes a map overview of CDOT's threats and assets along SH 66.
- ▶ For corridor-wide threats, resiliency recommendations include the following generalized actions:
  - Establish redundant routes to offer additional evacuation potential
  - Establish signage to disseminate information in the event of a hazard
  - Develop an Incident Management Plan for SH 66



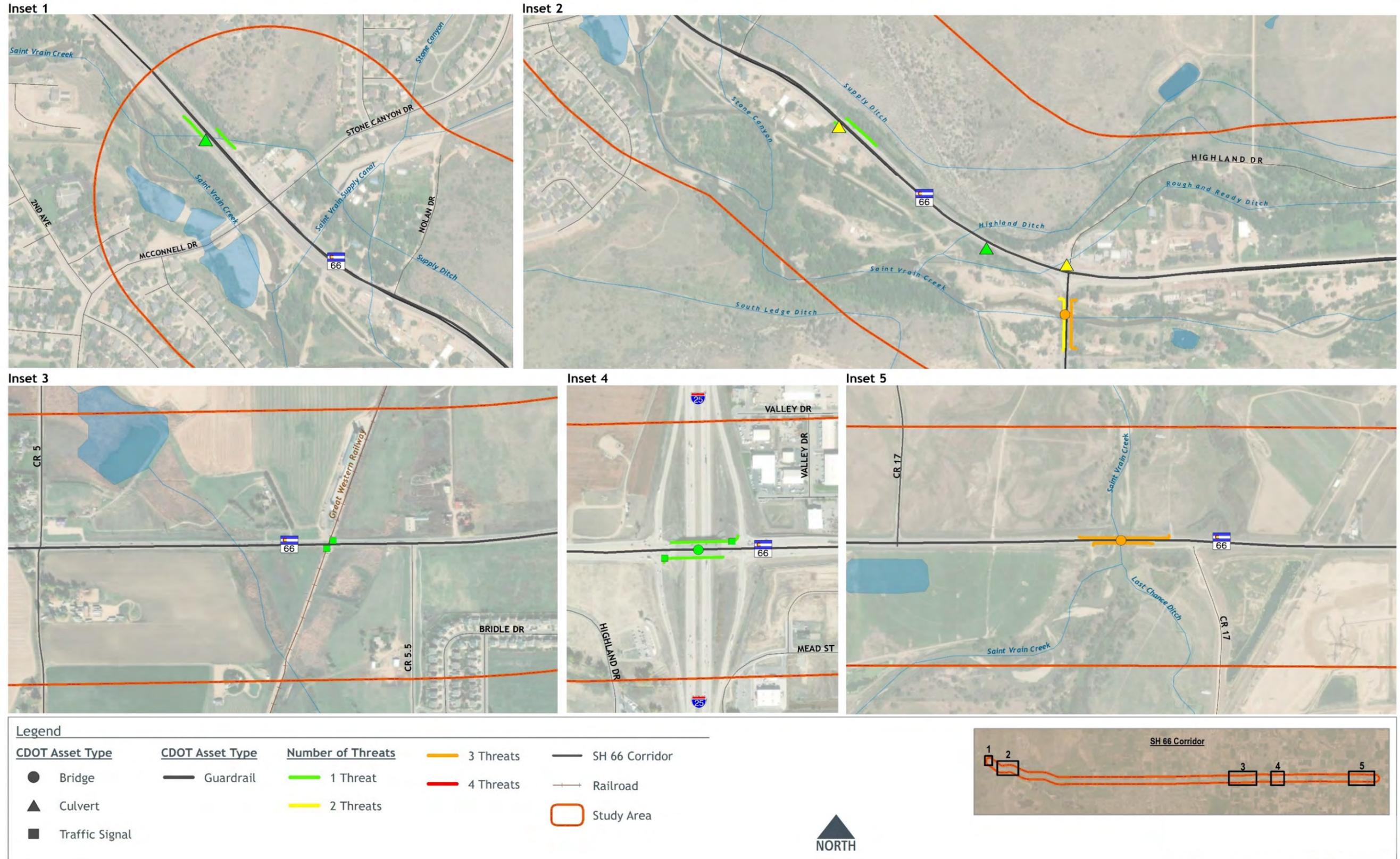
Figure 16. SH 66 PEL Risk & Resiliency Physical Assessment Process





# SH 66 Planning and Environmental Linkages Study

Figure 17. SH 66 Assets and Physical Threats Overview





### What are operational threats?

Operational threats (Figure 18) occur when unplanned land development has unanticipated highway operation impacts. Occasionally, communities will make land use/land development decisions that are not accounted for in the travel demand model and, therefore, position CDOT and surrounding communities as reactionary. This unplanned land development can generate unanticipated traffic volume increases on Colorado's state highways minimizing previous planning and prioritization efforts. Required funding may not be available to address operational and/or safety concerns sufficiently and the overall transportation network's operational resiliency is compromised.

Figure 18. Operational Threat Factors



### Operational Threat Assessment

- ▶ CDOT Region 4 staff and leadership, FHWA, and the Project Team developed a three-step assessment to evaluate operational resiliency.
  1. Perform an operational sensitivity at a corridor-level to establish intersections where highway operations may be nearing capacity based on the recommendations made in the PEL.
  2. Focus on these areas by identifying high-risk intersections (i.e., intersections that have failing operations if traffic volumes are higher than projections) to determine whether there is a threat of land use changes that may impact this area.
  3. CDOT and local agencies continue planning efforts to ensure that these locations are monitored after the PEL is completed.
- ▶ This assessment was not used to determine the PEL footprint. It was completed after the PEL recommendations were made to establish locations that may be most vulnerable to land use changes on the corridor.
- ▶ While small changes in land use may occur throughout the corridor and would be overall inconsequential to operations where intersections have excess capacity, these changes would be more significant if there are several compounded land use changes or if they occur at a location without excess intersection capacity.

### Operational Sensitivity

- ▶ The PEL used 2040 traffic projections based on available and approved DRCOG data. The operational sensitivity assessment identifies locations that may be nearing capacity after considering the capacity/geometric improvement recommendations from the PEL. It identifies likely traffic analysis zones (TAZ) that could underestimate future development.
- ▶ This corridor is near the outer limits of the DRCOG model. When development occurs outside the DRCOG region, it may impact volumes on SH 66 as well.
- ▶ To test overall sensitivity of the PEL recommendations, two future traffic volume adjustment scenarios were considered:
  - **Scenario 1** considered the case where unanticipated development results in an additional 10 percent traffic volume above the DRCOG projections.
  - **Scenario 2** considered a case where traffic was 20 percent higher than the DRCOG projections.
- ▶ While it is unlikely any uniform growth would occur in this manner on all movements along the corridor, this assessment allows a macro-level assessment to determine where there may be capacity issues on the corridor if the volumes are higher than projections from the regional travel demand model.
- ▶ TAZs and their household and employment growth projections were assessed at a high level to determine risks and vulnerabilities for each Section.
- ▶ Using operational sensitivity results, a high-level assessment was made for locations on SH 66 that may be at risk for operational deficiencies with unanticipated changes in future volumes occurs. This assessment identifies SH 66 locations most sensitive to changes if:
  - background growth projections are higher than anticipated in the model
  - specific developments submit plans with denser land uses than projections
  - land use projections are modified in future transportation plan updates

### Results Overview

- ▶ In the sensitivity analysis, some intersections have unacceptable operations under Scenario 1, which also means they would have poor operations under Scenario 2.
- ▶ Other intersections have enough additional capacity to absorb a 10 percent volume increase but fail in the 20 percent growth scenario.

### Section 1 Results

- ▶ **Risks:** Land uses in Section 1 have lower risk for unanticipated growth because Boulder County open space surrounds much of the highway. The following locations are considered at a higher risk for poor operations if volumes on the corridor become higher than anticipated:
  - **75<sup>th</sup> Street** — Incorporating PEL recommendations (addition of turn lanes to the side street approaches) results in operations of a LOS B or C. Adding 10 percent traffic results in the intersection being over capacity (operating at LOS E) during weekday evening peaks and results in long queues for eastbound SH 66. Additional lane construction may be needed to increase intersection throughput.
  - **Low Volume Intersections** — Lower-volume intersections in Section 1, including Highland Drive, 52<sup>nd</sup> Street, and 66<sup>th</sup> St, are anticipated to have lower side-street volumes and may not meet warrants for signalization. Drivers wanting to turn left out of the intersection will experience long delays, which will be further compounded with additional traffic on SH 66.
- ▶ **Vulnerability:** The DRCOG model projects almost no growth from the western project limits to 75<sup>th</sup> Street for either households or employment growth and moderate growth between 75<sup>th</sup> Street and Airport Road. Locations with the greatest vulnerability to development or redevelopment include:
  - **SH 66 Mainline** — The DRCOG model projects approximately 0.8 percent annual growth through Sections 1B and 1C until 2040, compared to a higher growth rate on the remainder of SH 66. If the surrounding growth on these sections of SH 66 are higher than anticipated, there could be long queues at signalized intersections and long delays near East Highland Drive and/or 87<sup>th</sup> Street.
  - **US 36/SH 66** — TAZs surrounding the SH 66 and US 36 intersection show almost no growth. However, the Town of Lyons has redevelopment planned for the area between McConnell Drive and East Highland Drive. If the redevelopment adds significant volume to the north leg of the US 36/SH 66 intersection or to the SH 66 mainline, it could result in poor operations.
  - **ARWAS** — Properties along Sections 1B and 1C planned to use the ARWAS typically include single-family homes, farms, or low-volume businesses. Properties not dedicated as a Boulder County Conservation Easement or Open Space could redevelop with higher density levels than what is currently planned. If this occurs adjacent to the ARWAS, reassessment would be necessary of the ARWAS operations and where it intersects with SH 66 crossroads. The ARWAS would provide access for low-volume connections only. If land use changes and higher volumes are projected, the ARWAS should be removed and traffic should access SH 66 directly.



### Section 2 Results

- ▶ **Risks:** Most properties adjacent to SH 66 in Section 2 are built-out, incorporated into City of Longmont’s Long-Range Plan, or identified as Boulder County Open Space. Performing the operational sensitivity analysis resulted in degraded operations with long delays at the following intersections:
  - *Hover/95<sup>th</sup> Street* — If traffic volumes are higher than projected, this intersection may not operate acceptably as a partial displaced left turn (PEL recommendation). Depending on movements impacted by the addition of traffic and the magnitude of additional traffic volumes, additional movements may need to be displaced, or a grade-separated intersection may be more appropriate.
  - *US 287* — If volumes are higher than projected, certain movements of the fully displaced left turn intersection (PEL recommendation) may experience long queues, which could impact design and capacity of the left turn lanes. If volumes increase significantly over DRCOG’s model projections, a grade-separated interchange may become more appropriate.
  - *Pace Street* — With significant added volume (Scenario 2), Pace Street would operate at LOS E in the evening peak. Operations at this intersection can be improved by constructing additional turn lanes beyond what was anticipated in the PEL, such as a dual westbound or northbound left turn.
- ▶ **Vulnerability:** Modeling shows high volumes generally traveling from north of SH 66 toward Longmont and Boulder in the morning peak (reverse in the evening peak). A Section 2 vulnerability includes potential inaccuracies in projected future turning movements because SH 66 is on the outer limits of the DRCOG model. This location results in limited nodes for traffic to enter and exit the model. If growth patterns outside the network distribute traffic differently as development occurs, some intersections may experience different north-south patterns than planned in the PEL, which could impact future intersections.

### Section 3 Results

- ▶ **Risks:** Section 3 is primarily rural, but sections near SH 66 are within the current or planned growth boundaries for Longmont and Mead. The following intersections is anticipated to near capacity if higher than anticipated traffic volumes occur:
  - *County Line Road* — Based on 2040 projections, County Line Road is anticipated to operate at LOS D during morning and evening peak periods. Increasing volumes by 10 percent or 20 percent results in LOS E for most peak periods. Adding traffic at this location also results in long peak hour directional queues on SH 66. If Section 3 experiences significantly higher volumes than projected, an alternative intersection treatment or grade-separated interchange may become more appropriate.

### Section 3 Results (Continued)

- ▶ **Vulnerability:** TAZs in this section project moderate to high planned growth. However, TAZs in Weld County near SH 66 typically are large (6 or more square miles) and may not reflect fully planned growth of surrounding local agencies. Also, several TAZs adjacent to SH 66 have overlapping growth boundaries for Longmont and Mead. The PEL team assessed several planned developments currently being platted in this section. While each development generally fits into DRCOG’s growth projections, if the same density were applied to remaining undeveloped land in the TAZ, growth would be significantly higher than projected.
- ▶ An additional Section 3 risk is that Mead recently updated their Transportation Plan. The changes were incorporated into current 2040 DRCOG projections, but they may not reflect ongoing planning processes. In that case, unanticipated land use changes or additional projected trips onto SH 66 may occur.

### Section 4 Results

- ▶ **Risks:** Section 4 is primarily rural, but sections near SH 66 are within the planned or current growth boundaries for Mead and Firestone. The following intersections are anticipated to be nearing capacity if higher-than-anticipated traffic volumes occur:
    - *Weld County Road 7* — The evening peaks for both Scenario 1 and Scenario 2 resulted in LOS E.
    - *Mead Place* — Mead Place is one of the few higher volume unsignalized intersections in this section. The intersection recommendation in the PEL includes three-quarter movement. Given the high volume of nearby right-turning traffic onto SH 66 from the I-25 northbound ramp or from WCR 9.5, minimal gaps would be available for traffic to turn into and out of Mead Place. As development occurs, it is important that higher volume unsignalized locations be secondary property accesses and that drivers have options to enter and exit at a signalized intersection. For Mead Place, additional access could be provided from WCR 9.5.
  - ▶ **Vulnerability:** TAZs in this section project moderate to high planned growth. However, TAZs in Weld County near SH 66 typically are quite large (6 or more square miles) and may not fully reflect the planned growth of the surrounding local agencies. Also, several of the TAZs immediately adjacent to SH 66 have overlapping growth boundaries for Mead and Firestone. The PEL team assessed several planned developments currently being platted in this Section. While each development generally fits into DRCOG’s growth projections, if the same density were applied to remaining undeveloped land in the TAZ, growth would be significantly higher than projected.
- An additional Section 4 risk is that Mead recently updated its Transportation Plan. The changes were incorporated into current 2040 DRCOG projections, but they may not reflect ongoing planning processes. In that case, unanticipated land use changes or additional projected trips onto SH 66 may occur. Additionally, Firestone is planning to update its Transportation Plan in the next several years, which also could impact SH 66 projected volumes.

### Section 5 Results

- ▶ **Risks:** Section 5 is primarily rural, but sections near SH 66 are within the planned or current growth boundaries for Mead and Firestone. The following intersections are anticipated to be nearing capacity if there are higher-than-anticipated traffic volumes:
    - *Weld County Road 11* — Based on 2040 projections, WCR 11 has significant remaining capacity and is anticipated to operate at LOS C during the morning and peak periods with the intersection improvements recommended in the PEL. Increasing the volumes by 10 or 20 percent results in LOS E for most peak periods. If significantly higher volumes occur at this intersection than were projected in the DRCOG model, additional auxiliary lanes or an alternative intersection treatment may be appropriate.
    - *Weld County Road 11.5* — Based on 2040 projections, WCR 11.5 has significant remaining capacity and is anticipated to operate at LOS C during morning and peak periods with the intersection improvements recommended in the PEL. Increasing volumes by 20 percent results in LOS E in the evening peak periods. If significantly higher volumes occur at this intersection than were projected in the DRCOG model, this intersection may require additional turn lanes.
  - ▶ **Vulnerability:** TAZs in Section 5 project moderate to high planned growth. However, TAZs in Weld County near SH 66 are typically quite large (6 or more square miles) and may not fully reflect planned growth of the surrounding local agencies. Also, several TAZs immediately adjacent to SH 66 have overlapping growth boundaries for Mead and Firestone. The PEL team assessed several planned developments currently being platted in this Section. While each development generally fits into DRCOG’s growth projections, if the same density were applied to remaining undeveloped land in the TAZ, growth would be significantly higher than projected.
- An additional risk in Section 5 is that Mead recently updated its Transportation Plan. The changes were incorporated into current 2040 DRCOG projections, but they may not reflect ongoing planning processes. In that case, unanticipated land use changes or additional projected trips onto SH 66 may occur. Additionally, Firestone is planning to update its Transportation Plan in the next several years, which could also impact SH 66 projected volumes.

### Next Steps

- ▶ The proposed process for evaluating and identifying operational threats to SH 66 includes:
  - working with agencies to monitor locations that could be at a higher risk
  - working with communities to implement solutions to improve the baseline corridor LOS
  - working with developers and local communities to fund improvements when an intersection or a section may have unacceptable operations based on PEL recommended improvements
  - monitoring the corridor through the ACP process



**SH 66 Planning and  
Environmental Linkages Study**

This page intentionally left blank.







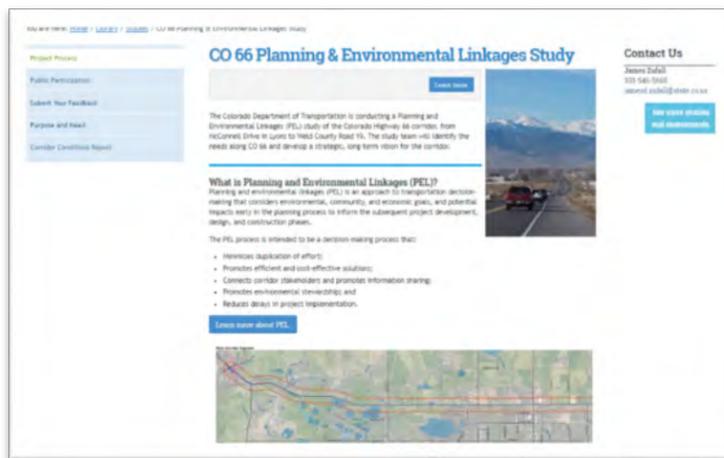
## SH 66 Planning and Environmental Linkages Study

### How were individuals and members of the public engaged during the PEL process?

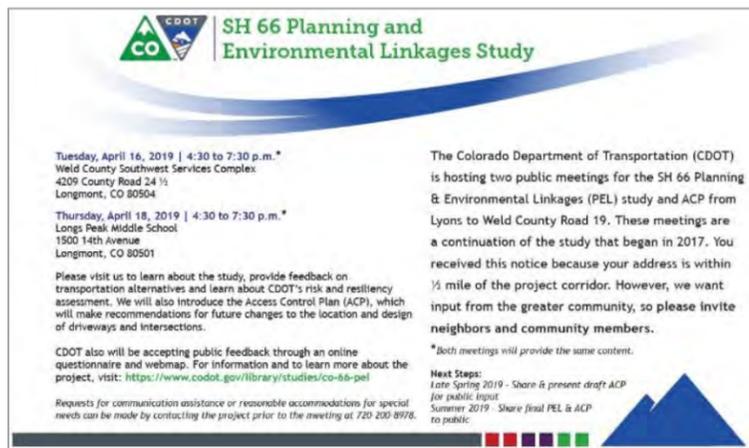
The Project Team conducted public outreach activities based on the type of feedback desired and decisions to be made. The team also used engagement platforms to share updates and gather feedback.

### Public Outreach: Project Website and Social Media

- CDOT hosted a dedicated website (<https://www.codot.gov/library/studies/co-66-pel>) for the project to provide information about the study and enable ongoing communication. The site provided a PEL study and process overview and included information about SH 66, meeting announcements, and meeting materials. Contact information for CDOT's project manager was included, which enabled the public to contact the Project Team with comments at any time.



- CDOT's social media accounts were used to provide project updates and announce upcoming public open houses; a press release was also distributed to advertise public open houses. TAC and EC members were provided a project flyer for each milestone and were encouraged to distribute the flyers using each community's distribution list and social media accounts.



Sample post card sent to residents

### Public Outreach: Public Open Houses



- Each round of public open houses included one meeting on the eastern side of the planning corridor and another on the western side. Each meeting was an open-house format with the same information being presented at each set of meetings. This allowed interested members of the public to select the location and a time that worked best for their schedules.
  - April 2017 Open Houses** — Had approximately 55 attendees and introduced the public to the study and existing corridor conditions. The Project Team distributed questionnaires asking the public to characterize the role of SH 66 through their community, to identify their top concerns regarding travel on SH 66, and to identify their expectations of the study. **Appendix G1** includes supporting documentation for these open house meetings.
  - April 2019 Open Houses** — Had approximately 110 attendees, presented the Level 2b transportation alternatives, and provided information about CDOT's risk and resiliency assessment. The ACP was also introduced during these open house meetings. Using a questionnaire, the community was asked to provide feedback on which Level 2b recommendations they supported and which ones concerned them. Attendees were also asked to identify which improvements they felt should be completed on the corridor first. The same survey, along with meeting materials, was also posted on the project website for two weeks following the last open house. **Appendix G2** includes supporting documentation for these open house meetings.
  - September 2019 Open Houses** — Had approximately 60 attendees and presented Level 3 recommended projects along the entire corridor, along with the potential environmental impacts. Attendees were also able to view a list of future access changes. Attendees were again provided a questionnaire to submit feedback; the same questionnaire was also posted on the project website. Questions focused on prioritizing intersection/interchange options at major intersections and identifying the priority transportation need for each section along the planning corridor. **Appendix G3** includes supporting documentation for these open house meetings.
- To support the concurrent ACP development, an open house was held on July 25, 2019, which had approximately 90 attendees. ACP information was displayed, including which access points might be consolidated, closed, and/or moved. Other traffic movement alternatives were presented.
- Open Houses were advertised through CDOT's (and local agencies') websites and newsletters, CDOT's social media accounts, press releases, posting of flyers in local communities (at the local agencies' discretion), email distribution, and postcard notifications to residents within one-half mile of the planning corridor.

### Public Comments

- The project team tracked and compiled public comments from several sources, including public open houses, project website, letters, email correspondence, and telephone conversations. At key project milestones, public comments were summarized and included in the analysis and planning process.
- April 2017 PEL Kickoff Public Comment Themes** (31 completed questionnaires):
  - The most important roles that SH 66 plays in the community – access to businesses, serving as a regional highway, and access to Rocky Mountain National Park.
  - Top three concerns regarding travel on SH 66 – difficult or dangerous to get onto and off SH 66, safety, and too much traffic.
  - The top three problems to be addressed in the future – adding turn lanes, making turn lanes longer, and accommodating bicycles and pedestrians with safe crossings.
- April 2019 Level 2b Analysis Public Comment Themes** (77 completed questionnaires):
  - Respondents emphasized the need to widen SH 66, to control access, to restrict turning and to include safety improvements in the final plan.
  - Residents along the corridor are concerned about noise levels and how the options will contribute to the problem.
  - The overall theme of safety is clearly expressed in the comments, specifically making a left-hand turn onto SH 66 or from SH 66 is challenging at all hours.
  - Speed was also mentioned often as a contributing factor to safety. Although most felt it would be appropriate to lower the speed limit, others felt that increasing the speed limit would help traffic move more smoothly along SH 66 resulting in fewer accidents.
- September 2019 Level 3 Analysis Public Comment Themes** (49 completed questionnaires):
  - Safety was identified as the highest transportation need for all sections of SH 66 within the planning corridor.
  - Noise along the corridor continues to be a concern for corridor residents. Some residents also expressed concern about how the various options may impact air quality and their property values.
  - Respondents generally support the expansion of SH 66 to 4-lanes for the length of the planning corridor.
  - Considerable feedback was received regarding the area of McCall Drive and North 66<sup>th</sup> St.
- Comments were also accepted throughout the planning process via the “submit feedback” link on the project website. The Project Team reviewed comments received from the website and sent a response to each individual. **Appendix G4** includes these comments.



## 7. Additional Next Steps

This chapter highlights additional requirements that would be necessary as PEL options are advanced and implemented.

### Access Control Plan

- ▶ Upon completion of the ACP, an Intergovernmental Agreement (IGA) will be developed for all agencies in the SH 66 study limits. This will include Boulder County, Weld County, Town of Lyons, City of Longmont, Town of Mead, and Town of Firestone.
- ▶ After receiving approval by each entity, the IGA will be approved, signed, and adopted by each agency. The plan ultimately will be approved by CDOT's State Access Manager, and the plan will become law. To implement recommendations of the ACP, there will need to be continuing coordination among agencies.
- ▶ As development occurs along the corridor, apply ACP recommendations in collaboration with local agencies. Some initial disruption may occur; with further implementation of the ACP, a net access control benefit will be realized.
- ▶ The ACP process and final recommendations are detailed in **Appendix H**.

### Scoping, Design, and Construction

- ▶ Once a project is included in the TIP, funding requirements are confirmed for ROW, utility, environmental, design, and construction needs. A project scoping meeting can be held to confirm project delivery method, project objectives, funding sources, and schedule.
- ▶ CDOT's project delivery process includes standard milestones for scoping, design, and construction. Projects sponsored by local agencies that involve federal funding and/or CDOT oversight must follow CDOT's local agency process. In terms of bicycle/pedestrian considerations, the proposed bicycle and pedestrian path and ARWAS must be accommodated with safety in mind through whatever intersection types are implemented.
- ▶ Projects are designed and built according to a project delivery method:
  - *Design-Bid-Build* — Includes survey, cost estimating, and preliminary and final design to confirm construction plans and specifications that are released for bid to construction contractors once design is complete
  - *Design-Build* — Plans are developed to 30 percent design to select a team of designers/contractors to complete the project. Factors used in team selection include qualifications, duration, price, and innovation.
  - *Construction Management/General Contractor* — The agency contracts separately with a designer and a construction manager. A contractor is selected to provide construction management input during the design process and to perform construction management services and construction work. If the Construction Management/General Contractor and agency cannot reach a mutually agreeable negotiated contract amount or they choose not to negotiate, the project will be advertised for competitive bid.

### Acquisition of Property for Right of Way

- ▶ When acquisitions are necessary based on record information and field surveys, a title report is ordered and used to prepare property descriptions, exhibits, and ROW plans. The process includes property appraisal and then acquisition negotiations.
- ▶ Typically, the timeframe between identification and transfer of ownership takes about 18 months to meet all Uniform Relocation Act requirements. However, it may be possible to obtain possession earlier based on project needs.
- ▶ Implementation of projects that involve acquisition of property for ROW must comply with the Uniform Relocation Act.

### Managed Lanes

- ▶ FHWA defines managed lanes as "Highway facilities or a set of lanes where operational strategies are proactively implemented and managed in response to changing conditions."
- ▶ The Colorado Transportation Commission approved the *Managed Lanes Policy Directive 1603.0* on December 28, 2012. The purpose of the policy directive (CDOT 2013) is "to ensure use of managed lanes is strongly considered during planning and development of capacity improvements on state highway facilities within Colorado."
- ▶ As projects are implemented, reference CDOT's [Managed Lanes Guidelines](#) (CDOT 2019) for more information.

### How is CDOT thinking about transportation technology for SH 66?

Throughout the course of the SH 66 PEL study, CDOT has considered current technologies and is working to make the corridor ready for emerging technologies that would advance purpose and needs of SH 66, along with corridor goals.

Figure 19. Technology Examples for SH 66



Communications duct sidewalk



Adaptive lighting

### Innovative and Emerging Transportation Technologies

- ▶ For existing innovative technology, CDOT understands its potential uses and benefits, which makes decision making for existing technology investments more tangible. Conversely, emerging or future technologies can be moving targets in terms of standards, protocols, systems, business processes, etc. As a result, this PEL aims to strike a balance by:
  - Planning flexibility in infrastructure so that emerging and future technology needs can be accommodated easily and so that early investments are possible while not investing in uncertain infrastructure along SH 66.
  - Planning actionable PEL outcomes so that CDOT and local agencies can take advantage of technology today, while actively preparing for the future.
- ▶ This list summarizes existing technologies that offer current and future benefits. These technologies can be implemented now, but they also provide infrastructure and systems needed to accommodate future connected vehicle and automated vehicle (CV/AV) applications:
  - Adaptive Traffic Signal Control — Adaptive traffic signals have been used effectively in CDOT Region 4 for many years. These signals dynamically adjust signal timing, coordination, and progression based on traffic demand and can result in improved traffic flow and safety when used in proper locations. A previous CDOT study shows SH 66 between Colorado Boulevard and US 287 could benefit from adaptive traffic signal control (Atkins 2016). Adaptive signal controls will benefit from emerging CV technologies and will communicate with AVs in the future to optimize traffic flows.
  - Smart/Adaptive Streetlights — Light emitting diode and new communications capabilities allow streetlights to become "smart" and to adapt to current conditions. Benefits include improved safety and improved sustainability through energy and dark sky savings. Lights can change brightness based on the presence or absence of vehicles, pedestrians or other factors (**Figure 19**); can include remote video and audio monitoring by staff; can include Wi-Fi connectivity, can include warning sirens for severe weather or emergencies. With their communications capabilities, these lights will be important with emerging CV/AVs.
  - Blank Out Signs for Pedestrian Crossings — Blank out signs restrict right or left turns at signalized intersections when pedestrians are crossing and improve safety for pedestrians. Signs are activated with pedestrian push buttons and/or can use passive systems like infrared, video, LiDAR, etc., to detect the presence of crossing pedestrians. This information will be valuable to share with CV/AVs to alert them to crossing pedestrians.
  - Variable Speed Limits — Variable speed limits can be used to improve safety and smooth traffic by alerting drivers of slower traffic flow from weather, congestion, accidents, etc. They will be used in the future by CV/AVs to regulate speed for optimal traffic flow.
- ▶ Communications and power will be increasingly important for emerging technologies. Future smart cities and CV applications require closer spacing of physical infrastructure than currently exists.
  - For example, the multi-use side path along the corridor can be constructed with removable planes over a communications duct (**Figure 19**).
  - This feature would provide easy access, increase communications capacity, and allow future connections involving new infrastructure/technology.
  - This feature improves safety for maintenance crews, getting them off the roadway, plus closures require less extensive traffic control.



## 8. References

AEM. 2018. Final Criticality Map and Model for Colorado. Data Received by email March 1.

Atkins. 2016. Region 4 Adaptive Signal Prioritization. Prepared for CDOT Region 4. October 25.

Colorado Department of Transportation (CDOT). 2013. Managed Lanes Policy Directive 1603.0. January.  
<https://www.codot.gov/about/governmentrelations/news-publications/policy-briefs/cdot-s-managed-lanes-policy-directive>

CDOT. 2016. PEL Handbook Version 2. January.  
<https://www.codot.gov/programs/environmental/planning-env-link-program/pel-handbook-january-2016/view>

CDOT. 2017. NEPA Manual Version 5. August.  
<https://www.codot.gov/programs/environmental/nepa-program/nepa-manual>

CDOT. 2019. Managed Lanes Guidelines. February.  
<https://www.codot.gov/library/traffic/traffic-manuals-and-guidelines/traffic-guidelines-info/managed-lane-guidelines.pdf>



**COLORADO**

**Department of Transportation**

*Draft Final*

# **SH 66 Access Control Plan**

**October 31, 2019**

*Prepared by:*

**ATKINS**

Member of the SNC-Lavalin Group

# Table of Contents

<b>1.</b>	<b>Introduction .....</b>	<b>1</b>
1.1.	Overview of Project .....	1
1.2.	Study Limits .....	2
1.3.	Purpose .....	4
1.4.	Objectives .....	4
1.5.	ACP Process .....	5
<b>2.</b>	<b>Corridor Conditions .....</b>	<b>7</b>
2.1.	Existing Corridor Access .....	7
2.2.	Existing Corridor Traffic .....	9
2.3.	Crash History .....	12
2.4.	2040 No Action Corridor Traffic .....	12
<b>3.</b>	<b>Public Involvement .....</b>	<b>16</b>
<b>4.</b>	<b>Access Control Methods .....</b>	<b>17</b>
<b>5.</b>	<b>Access Recommendations .....</b>	<b>19</b>
5.1.	Level of Service Analysis .....	19
<b>6.</b>	<b>Next Steps .....</b>	<b>22</b>
6.1.	Approval Process .....	22
6.2.	Plan Implementation .....	22
6.3.	Plan Modification .....	23

## Appendices

Appendix A.	Existing Access Maps
Appendix B.	US 36 / SH 66 Inter-Governmental Agreement
Appendix C.	SH 66 Access Table
Appendix D.	Proposed Access Maps
Appendix E.	Public Involvement Material
Appendix F.	2040 Synchro Analysis

## List of Tables

Table 1. Summary of Highway Analysis Sections.....	2
Table 2. Existing Access Conditions with Study Area.....	9
Table 3. Proposed Number of Accesses.....	19
Table 4. 2040 Operational Analysis .....	20

## List of Figures

Figure 1. Study Area Limits .....	3
Figure 2. Existing Operational Classification and Laneage .....	8
Figure 3. Existing Traffic Volumes .....	10
Figure 4. Existing Corridor Operations.....	11
Figure 5. Crash History Along SH 66 .....	13
Figure 6. 2040 Projected Traffic Volumes.....	14
Figure 7. 2040 No Action Traffic Operations on SH 66.....	15
Figure 8. Methods of Access Control .....	17
Figure 9. Access Road with Advisory Shoulder Concept.....	18

## List of Acronyms

ACP	Access Control Plan
CDOT	Colorado Department of Transportation
DRCOG	Denver Regional Council of Governments
GIS	Geographic Information System
IGA	Inter-Governmental Agreement
LOS	Level of Service
mph	miles per hour
NR-A	Non-Rural Regional Highway
PEL	Planning and Environmental Linkages
R-A	Regional Highway
SH 66	State Highway 66
TTI	travel time index
US 287	U.S. Highway 287
US 36	U.S. Highway 36
WCR	Weld County Road

# 1. Introduction

## 1.1. Overview of Project

The Colorado Department of Transportation (CDOT) is conducting a Planning and Environmental Linkages (PEL) study for approximately 20 miles of State Highway 66 (SH 66) between McConnell Drive in Lyons, Colorado, and Weld County Road (WCR) 19 near Platteville, Colorado. SH 66 is an east-west principal arterial roadway under CDOT jurisdiction. The SH 66 PEL is being conducted to identify existing conditions, identify challenge areas, analyze safety and operational needs along this section of SH 66, and determine its short-term and long-term transportation priorities. As part of the PEL, CDOT concurrently completed an Access Control Plan (ACP) along the corridor to address the future access needs. The ACP involved seven stakeholders (including CDOT), who ultimately will sign the Inter-Governmental Agreement (IGA) with CDOT: Boulder County, Weld County, Town of Lyons, City of Longmont, Town of Mead, and Town of Firestone.

Recent growth along the corridor has resulted in an increase in traffic on SH 66. Looking to the future, traffic volumes are expected to increase in the range of 25 percent to 50 percent along the corridor by the year 2040. Without changes to the highway, the projected increase in traffic volumes will result in increased delay, higher levels of congestion and pollution, an increase in the number of crashes, and consumers potentially choosing to conduct their business in other communities.

The approved ACP will guide the agencies' decisions regarding the future access conditions while supporting the planning objectives of the Towns, City, Counties, and CDOT. The ACP was developed by building on the efforts of the PEL process through an extensive collaborative effort between the stakeholders, a significant public outreach effort to ensure all concerns were heard and appropriately addressed, and informational presentations to the corridor's coalition of staff and elected officials.

The final recommendations of the ACP provide benefit to four primary areas of the transportation system: operations, safety, multi-modal, and future improvements. Some of the major findings and benefits of the ACP include:

- Changes in access conditions are identified, such as the elimination of an access or restriction on the type of turn movements allowed at a specific location. These recommendations will result in a reduction in the number of conflict points (locations where vehicles and/or pedestrians cross paths with each other), which will improve overall safety for all transportation modes.
- Intersections are identified that may warrant the need for a traffic signal, roundabout, or conversion to an interchange in the future. Clearly identifying the locations where a signal can be installed if warranted prevents the corridor from becoming too congested with signals that are spaced too closely. While the locations where signals may be installed are established in the plan, no signal will be installed until warrants are met, which means that some intersections may remain unsignalized. Alternative intersections, such as a full and partial displaced left-turn intersection and grade-separated interchanges, have been proposed at multiple intersections as future recommended improvements in the PEL. The intersections that may require grade separation are noted in the ACP.
- A shared road concept, called an Access Road with Advisory Shoulders, was developed for the PEL recommendations. It would parallel SH 66 along either the north or south side of the highway between Highland Drive East and 87th Street. The Access Road would provide a shared vehicle, bicycle, and pedestrian path approximately 16 feet wide that provides entrance/exit for a short distance to a handful of parcels and directs the vehicles to intersections to reach SH 66. The Access Road would run for a short segment, but the entire route would be connected by a bicycle and pedestrian path that would travel the entire section length. The portions of the Access Road that allow vehicles are anticipated to be low volume and low speed, as the roads typically only

provide access to a small number of parcels. Implementing this concept would reduce the number of direct accesses to SH 66 through rural Boulder County by a significant number and would allow the resulting accesses to provide deceleration and acceleration lanes and formalized intersections.

- The recommendations and conclusions contained in the ACP collaborated with the PEL process and do not prohibit future improvements to the transit, bicycle, and pedestrian facilities along the corridor.
- The recommendations and conclusions contained in the ACP follow the recommendations from the PEL for the future laneage and footprint of SH 66. The recommendations and conclusions do not prohibit future improvements to the roadway system along the corridor or on adjacent nearby streets. Efforts were made to identify possible future connectivity via roads that can alleviate the need for many direct accesses to the highway.

## 1.2. Study Limits

The ACP study limits, shown in Figure 1, are approximately 20 miles in total length along SH 66 and include a small portion of U.S. Highway 36 (US 36) from the intersection with SH 66 to McConnell Drive in Lyons. The western boundary of the study is the US 36/McConnell Drive intersection and the eastern boundary of the project is the SH 66/WCR 19 intersection near Platteville. The study area passes through the Town of Lyons, City of Longmont, Town of Mead, Town of Firestone, Boulder County, and Weld County. A review of the highway characteristics—such as daily traffic volumes, development density, speed limits, and jurisdictional boundaries—revealed five distinct sections as part of the PEL efforts. Within those five sections, Section 1 and Section 5 were further sub-divided based on future projected land use and highway characteristics. These sections are summarized in Table 1 below.

**Table 1. Summary of Highway Analysis Sections**

Section #	Limits	Characteristics
1A, 1B, 1C	McConnell Drive to 87th Street	Primarily rural, higher speed, lower volume, lower density of access points, lower truck volumes
2	87th Street to County Line Road	Primarily urban, high-density development, high density of access points, higher volumes, lower speeds, moderate truck volumes
3	County Line Road to WCR 7/3rd Street	Primarily rural, higher volumes, higher speeds, lower density of access points, moderate truck volumes
4	WCR 7/3rd Street to WCR 11	Primarily centered on the I-25 interchange, higher density of access points, moderate truck volumes
5A, 5B	WCR 11 to WCR 19	Primarily rural, higher speed, lower volume, lower density of access points, higher truck volumes



### 1.3. Purpose

The purpose of the ACP is to identify the location, type, and basic design elements of future access points within the study limits to provide reasonable access to adjacent properties while maintaining safe and efficient movement of all modes of transportation (vehicles, bicyclists, and pedestrians) along, adjacent to, or on alternative routes for SH 66. The improvements should be resilient, accommodate developing technologies, and strive to complement adjacent community context.

According to the *State Highway Access Code (March 2002)*, CDOT is required to provide access to individual properties when reasonable alternative access to the general street system does not exist and is not obtainable. CDOT can modify existing access points for safety and operational reasons and recommend restricting the number of allowable vehicle movements.

Changes in access are discussed in Section 2.6, Changes in Land Use and Access Use, in the *State Highway Access Code*:

*The Department or issuing authority may, when necessary for the improved safety and operation of the roadway, rebuild, modify, remove, or relocate any access, or redesign the highway including any auxiliary lane and allowable turning movement. The permittee and or current property owner will be notified of the change. Changes in roadway median design that may affect turning movements normally will not require a license modification hearing as an access permit confers no private rights to the permittee regarding the control of highway design or traffic operation even when that design affects access turning movements (p. 25, paragraph 7).*

Furthermore, the ACP establishes when to implement access control from an operational standpoint and what types of access will be allowed, based on the standards set forth in the *State Highway Access Code*. According to Section 2.12, Access Control Plans, of the *State Highway Access Code*:

*The access control plan shall indicate existing and future access locations and all access related roadway access design elements, including traffic signals, that are to be modified and reconstructed, relocated, removed, added, or remain (p. 30, paragraph 2).*

### 1.4. Objectives

Proper application of an ACP will allow all forms of transportation to move efficiently and safely along the study roadway by controlling the design, location, and frequency of access points and by better using the secondary or local roadway network to reduce future strain on the highway. The following goals are specific to the SH 66 ACP:

- Identify improvements to the local transportation network that promote safety and provide appropriate level of access to properties adjacent to the highway.
- Blend the corridor vision from the PEL with the requirements of the CDOT *State Highway Access Code*.
- Assist future development and redevelopment along SH 66 by identifying the locations and types of accesses.
- Provide efficient movement for all modes of transportation along SH 66.
- Provide the appropriate level of access to properties adjacent to the study roadway.
- Provide safer circulation routes for all forms of transportation.

Based on the projected traffic growth on the corridor, without better access control, the number of conflicts, amount of delay, and level of congestion will increase. Proper control of the frequency, number, and location of access points on the study roadway can lead to the following benefits:

- Reducing the number of conflict points where a crash may occur on the highway; this is applicable not only for vehicles, but also for pedestrians and bicyclists having to cross multiple driveways on the corridor
- Creating fewer locations for vehicles to brake or turn onto or off of the highway, resulting in more efficient travel for through traffic
- Making the corridor more visually appealing to drivers and visitors by reducing the number of driveways
- Reducing pollution created by congested traffic conditions

Along the SH 66 corridor, both the existing operational classifications as well as the future desired classifications developed as part of the PEL process were considered when developing the ACP. The existing and future context of the highway, such as whether it would be a rural or urban corridor, also were considered. Frontage roads and shared vehicular and multimodal roads were considered and/or recommended to reduce the frequency of direct accesses to the highway. Consolidating the driveways with direct access to the highway by using local streets allows the opportunity to provide deceleration and acceleration lanes at the intersections, which removes slowing traffic from the mainline of the highway, which improves safety and operations.

A safety analysis was conducted as part of the *SH 66 PEL Corridor Conditions Report*. There were more than 900 reported crashes on the 20-mile-long corridor over the five-year period for which data were analyzed, which result in a higher than expected number of crashes on this corridor.

There are several ways to reduce the number and severity of crashes that occur on a roadway. First, crashes often occur at locations where two vehicles or a vehicle and a pedestrian conflict with each other. A potential conflict occurs each time vehicles turning at an access point cross paths with other roadway users (vehicle, cyclist, or pedestrian). If the number of conflict points (access locations) is reduced, the number of crashes typically decreases.

Second, some of the most severe crashes typically involve left-turn movements by vehicles attempting to enter or exit the roadway without the protection of traffic control devices, such as a traffic signal. With an ACP, most of the vehicle left-turn movements can be redirected to locations where, under the protection of a green phase, the vehicles can either turn left onto or off of the highway. Additionally, pedestrians can safely cross the highway at high-volume intersections under the protection of the “Walk” and “Do Not Walk” phases of a traffic signal. Other options for reducing the potential for left-turn crashes are the use of roundabouts,  $\frac{3}{4}$ -movement, or right-in, right-out only intersections.

To reduce vehicle congestion and delay, it is important to control the number of access points along the roadways as traffic increases. By allowing fewer accesses, vehicles do not have to slow as much or stop as often to turn into an access or allow vehicles to enter the roadway from access points. Additionally, by allowing fewer accesses, deceleration and acceleration lanes can be provided to remove slower traffic from the highway mainline. By reducing the friction along the roadway through reducing the number of access points, the roadway will not become strained by congestion and delay. Motorists will experience acceptable travel times and an overall better driving experience, which may translate into maintaining return service for local businesses. Another benefit to reducing congestion on the study roadway is a reduction in the level of vehicle emissions, which reduces the level of air pollution along the corridor.

## 1.5. ACP Process

Much of the existing conditions data collection and analysis efforts were performed as part of the PEL process. All access locations were identified; crash data were analyzed, corridor traffic volumes were collected; 2040 volumes were developed based on the regional Denver Regional Council of Governments (DRCOG) model; and copies of relevant traffic/planning studies for the roadway and/or the Towns, City, or Counties were gathered. When the data were collected, a safety report and operational analyses were

completed for the existing and No Action conditions, which are documented in the *SH 66 PEL Corridor Conditions Report*. As part of the Level 2 analysis of the PEL and prior to the ACP beginning, the PEL developed future cross-sections for each Section along the corridor, which included the laneage, presence of medians, and recommended location of sidewalks or shared-use paths. During the Level 3 analysis, possible intersection options to carry forward were determined for key areas along the corridor.

During the Level 3 analysis of the PEL, the ACP portion of the project began. The recommendations of the PEL and ACP became an iterative process, where the recommendations of one would inform the results of the other.

The draft ACP alternatives were developed based on the requirements of the *State Highway Access Code*. The project team presented the existing and proposed conditions to the public at several open houses, which is documented in Chapter 3. Presentations to each agency's public works staff and/or elected officials were held during the process to ensure that each agency was included in the process. Based on the comments received, the ACP was revised to develop a preferred alternative. Throughout the PEL and ACP process, the project team gave multiple presentations to the SH 66 Coalition, which consists of local planning and engineering staff as well as elected officials.

The SH 66 ACP is referenced in the final SH 66 PEL Report. The plan adoption process is anticipated to be completed in early 2020. Appendix B contains the IGA necessary to complete the adoption process. Implementation of the SH 66 ACP will occur in phases or incrementally over time based on the development and redevelopment process, available funding, and traffic or safety needs.

## 2. Corridor Conditions

### 2.1. Existing Corridor Access

All access points can be separated into two categories: public ways or private driveways. Definitions relating to types of access are covered in 1.5, Definitions and Abbreviations, of the *State Highway Access Code*:

*“Public Way” means a highway, street, or road, open for use by the general public and under the control or jurisdiction of the appropriate local authority of Department and includes private roads open to the public.*

*“Driveway” means an access that is not a public street, road, or highway (pages 2-8).*

The study area includes a small portion of US 36, about 0.7 mile from McConnell Drive to SH 66, and 19.3 miles of SH 66 from US 36 to WCR 19 in Platteville. A review of the *State Highway Access Code* indicates that all portions of the study area are classified as either Regional Highway (R-A) or Non-Rural Regional Highway (NR-A), as summarized in Figure 2. The sections shown in yellow in Figure 2 are R-A, and the NR-A sections are shown in green.

Per the *State Highway Access Code*, Regional Highways (R-A) are governed by the following characteristics:

- The capacity to handle medium to high travel speeds and relatively medium to high traffic volumes in a safe and efficient manner.
- Provides interregional, intra-regional, and intercity travel needs.
- Provides service to through traffic movements with a lower priority on providing direct access to adjacent properties.

Non-Rural Regional Highways (NR-A) are governed by the following characteristics:

- The capacity to handle medium to high travel speeds and medium to high traffic volumes over long distances in a safe and efficient manner.
- Provides for interregional, intra-regional, intercity, and intra-city travel needs in suburban and urban areas.
- Provides service to through traffic movements rather than direct access service to abutting land.

If an access meets established signal warrant criteria, it has the potential to become signalized in the future. According to the *State Highway Access Code*, the preferred spacing between signalized intersections is 0.5 mile for highway categories NR-A and R-A. Not all public roadways that currently access SH 66 are appropriate locations for traffic signals if the roadway is to remain in compliance with the *State Highway Access Code*. Hence, an ACP identifies locations where signals can be installed if warrants are met. Without the proper planning, such as the development of an ACP, signals may end up being placed at inappropriate locations, which may preclude the ability to provide appropriate traffic control at needed intersections in the future to benefit the entire system.

**Figure 2. Existing Operational Classification and Laneage**

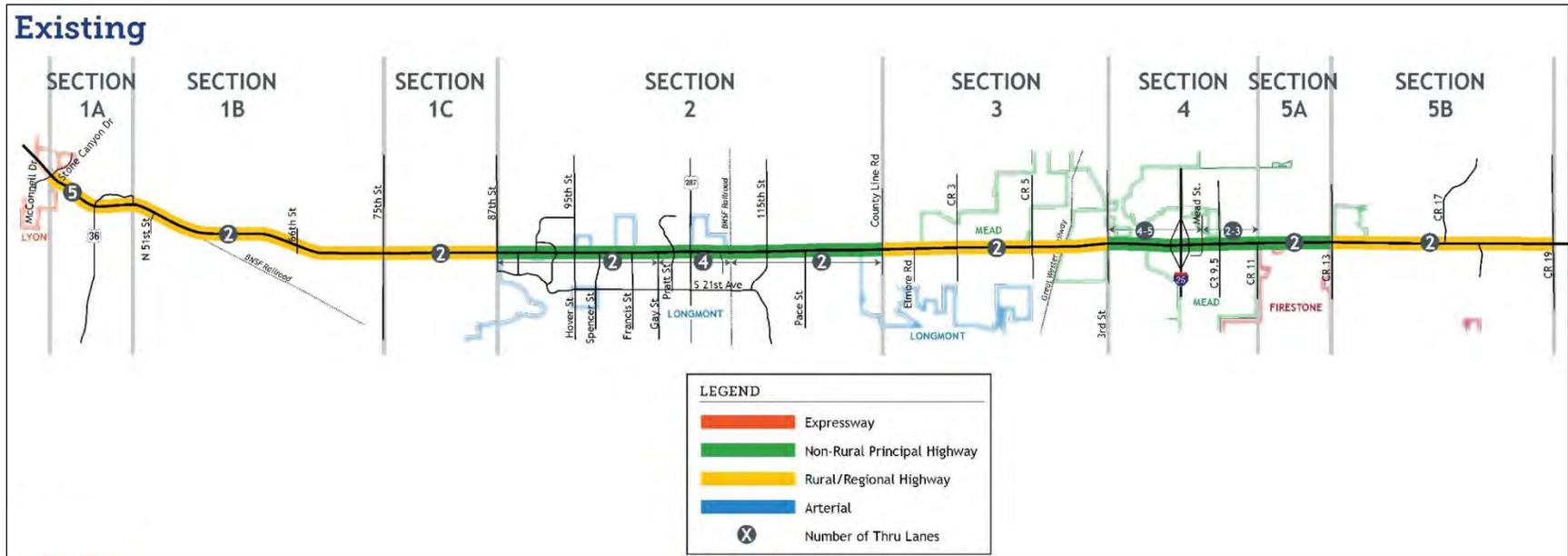


Table 2 summarizes the existing accesses in each of the PEL sections, and includes the access type, average spacing between accesses, and the access density. Today there are more than 370 access locations within the study area, including 346 full-movement intersections and 27 partial-movement (some turning movements are restricted) or other intersection types (such as a railroad crossing). Most unsignalized accesses are driveways providing movement to residential homes and the many businesses that have frontage along the highway. Some access locations are not defined with curb and gutter and may have undefined dirt or paved openings that span the full length of the property. The existing access conditions maps can be found in Appendix A.

**Table 2. Existing Access Conditions with Study Area**

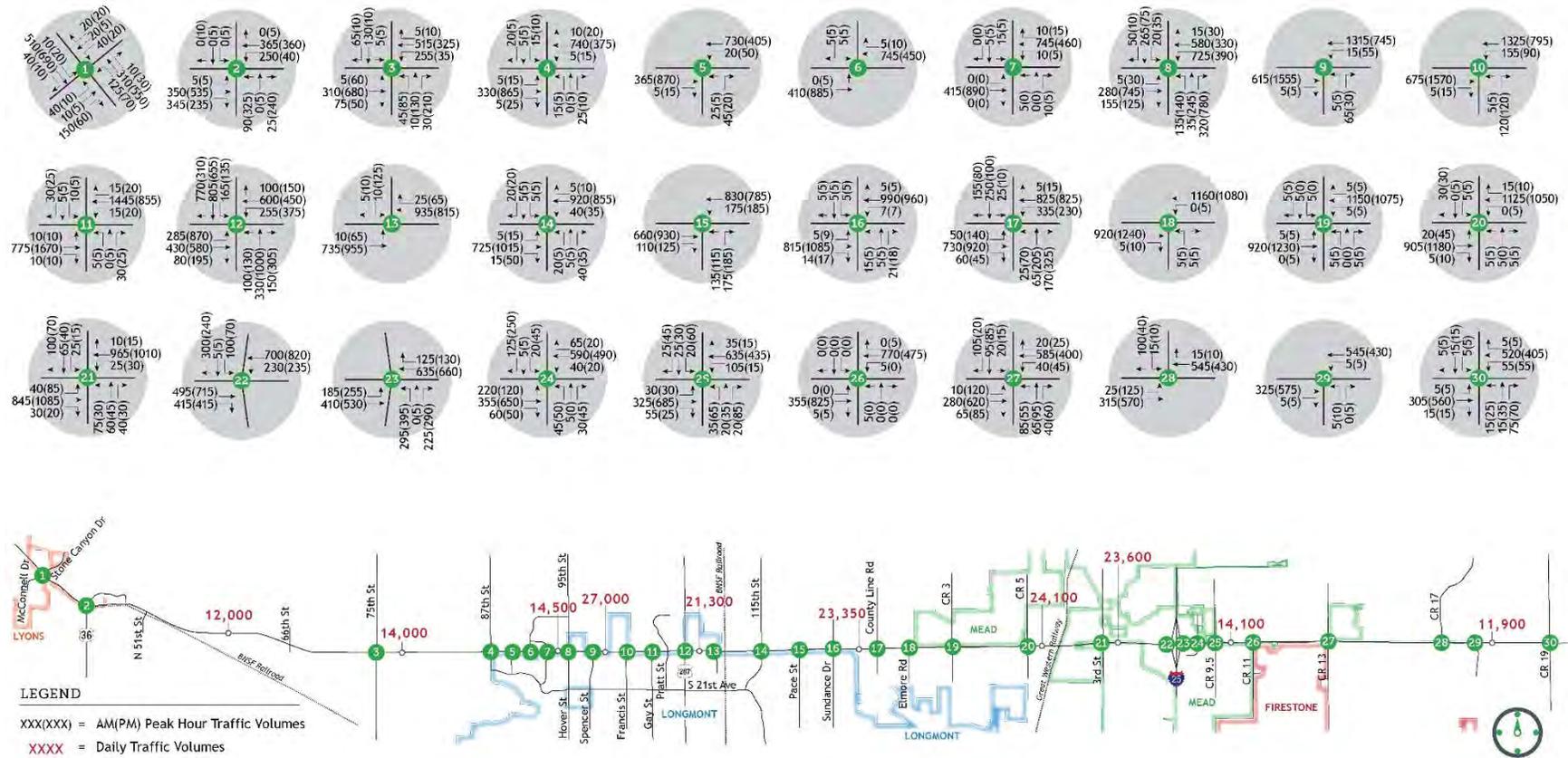
Section	Number of Accesses				Segment Length (miles)
	Full Movement	Partial Movement	Other	Total	
McConnell Dr to 87th St	145	15	0	160	5.8
87th St to County Line Road	74	7	2	83	5.0
County Line Road to WCR 7	45	0	2	47	3.0
WCR 7 to WCR 11	21	1	0	22	2.0
WCR 11 to WCR 19	61	0	0	61	3.9
<b>Totals</b>	<b>346</b>	<b>23</b>	<b>4</b>	<b>373</b>	<b>19.9</b>

## 2.2. Existing Corridor Traffic

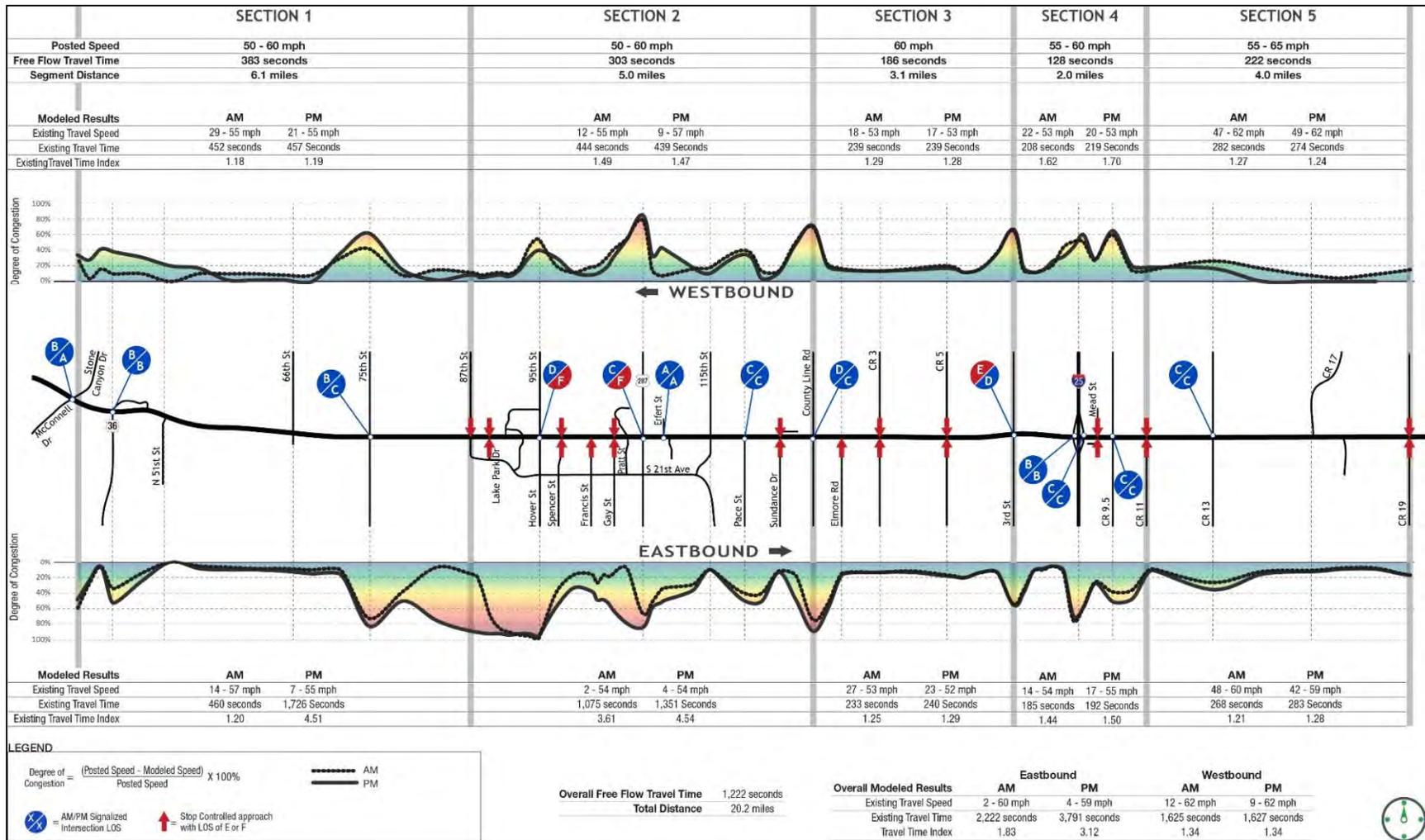
The *SH 66 PEL Corridor Conditions Report* documents the existing traffic volumes and operational analysis in detail, which is not repeated in this ACP report. It should be noted that the existing traffic volumes along the corridor already exceed capacity at some intersections, resulting in congestion and delays. Traffic volumes range from about 12,000 vehicles per day at either end of the study area to a high of 27,000 vehicles per day within Section 2 (the most urbanized section of the study area). The existing operational analysis shows that the three signalized intersections, 95th Street/Hover Street, U.S. Highway 287 (US 287), and WCR 7/3rd Street, currently operate at a failing Level of Service (LOS). The existing turning movement counts and average daily traffic are summarized in Figure 3.

Under existing conditions, the highway users across most of the SH 66 study area (68 percent eastbound to 91 percent westbound) experience low levels of congestion, while the highway users experience heavy to significant congestion on a small amount of the study area (4 percent westbound to 16 percent eastbound). The travel time index (TTI) was calculated for the corridor, which is a measure of the ratio of travel time during peak conditions to the travel time under free flow conditions. The existing TTI for the entire SH 66 study area ranges from 1.3 to 3.1 depending on the time of day (AM or PM) and direction of travel (eastbound or westbound), with the higher values experienced for eastbound traffic in both time periods. These values are consistent with moderate to high levels of delay caused by congestion along the corridor. Individual sections experience a TTI as high as 4.5 (Section 2, eastbound during the PM) consistent with high delays and congestion through the more urbanized portion of the corridor where there are higher volumes, more access locations, and a greater number of traffic signals. See Figure 4 for more information.

**Figure 3. Existing Traffic Volumes**



**Figure 4. Existing Corridor Operations**



## 2.3. Crash History

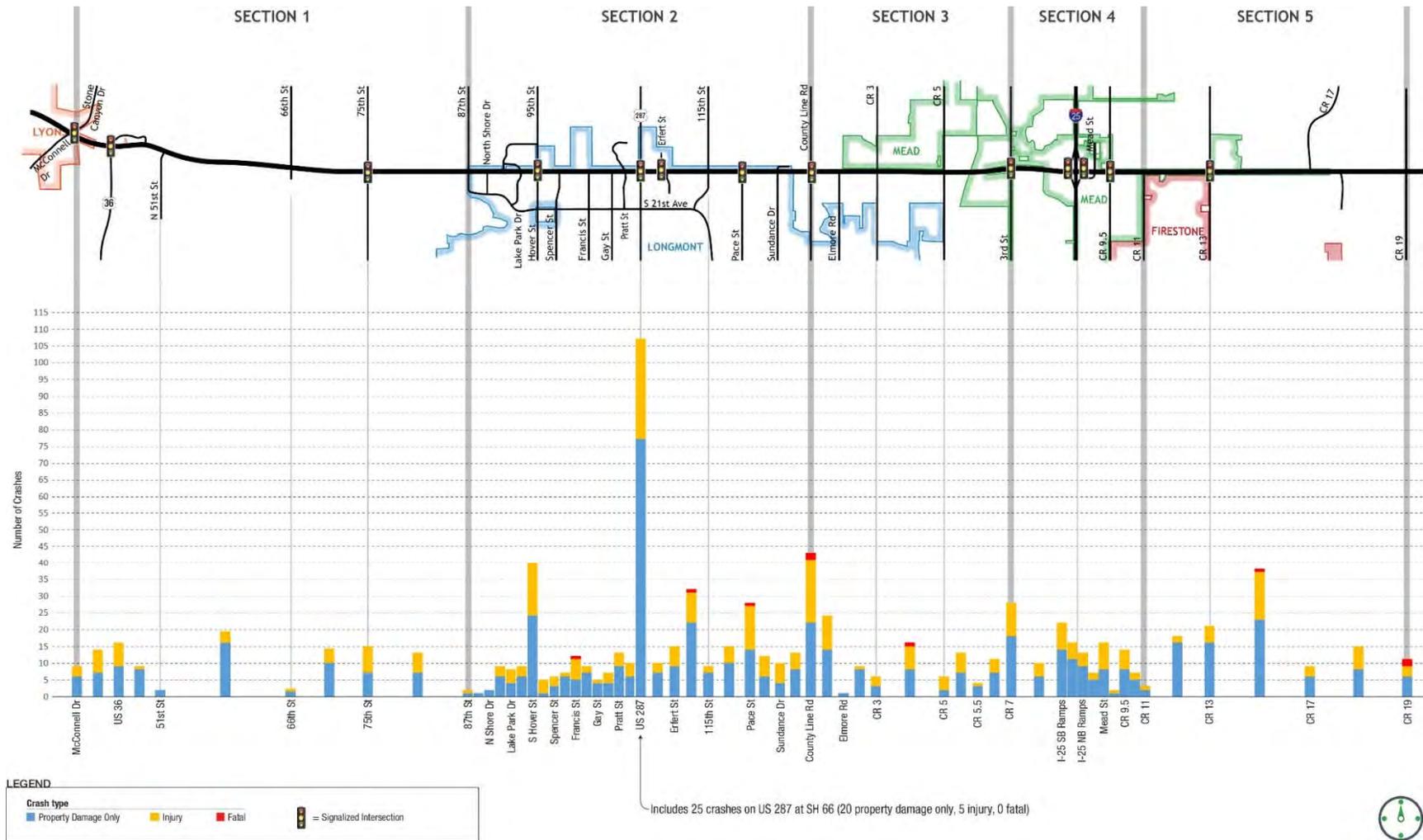
The five-year crash data also are discussed in detail in the *SH 66 PEL Corridor Conditions Report*, as well as the stand-alone *SH 66 Safety Analysis Report* that was developed. Highlights of those reports indicate that a total of 903 crashes occurred in the five-year period analyzed, with approximately 65 percent of all crashes occurring at intersections or driveways, and about 37 percent of the total crashes resulting in injuries or fatalities. Approximately 50 percent of all crashes occurred in Section 2 of the study area, which is primarily urbanized—with a higher density of development, intersections, and access points—and it has higher volumes compared to other sections of the study area. The data also indicate that rear-end crashes accounted for nearly 45 percent (403 crashes) and crashes involving a turning vehicle accounted for another 21 percent (191 turning-related crashes) of all crash events within the study area. One factor that contributes to crashes on this corridor is the high number of access locations that do not have turn lanes (left and/or right), which results in vehicles slowing in the main travel lanes of SH 66 to enter these access locations. In many locations on SH 66, there are only two travel lanes (one in each direction), which, coupled with high travel speeds (higher than 50 miles per hour [mph]), exacerbates the speed differential between turning vehicles and through traffic. See Figure 5 for additional crash data information.

## 2.4. 2040 No Action Corridor Traffic

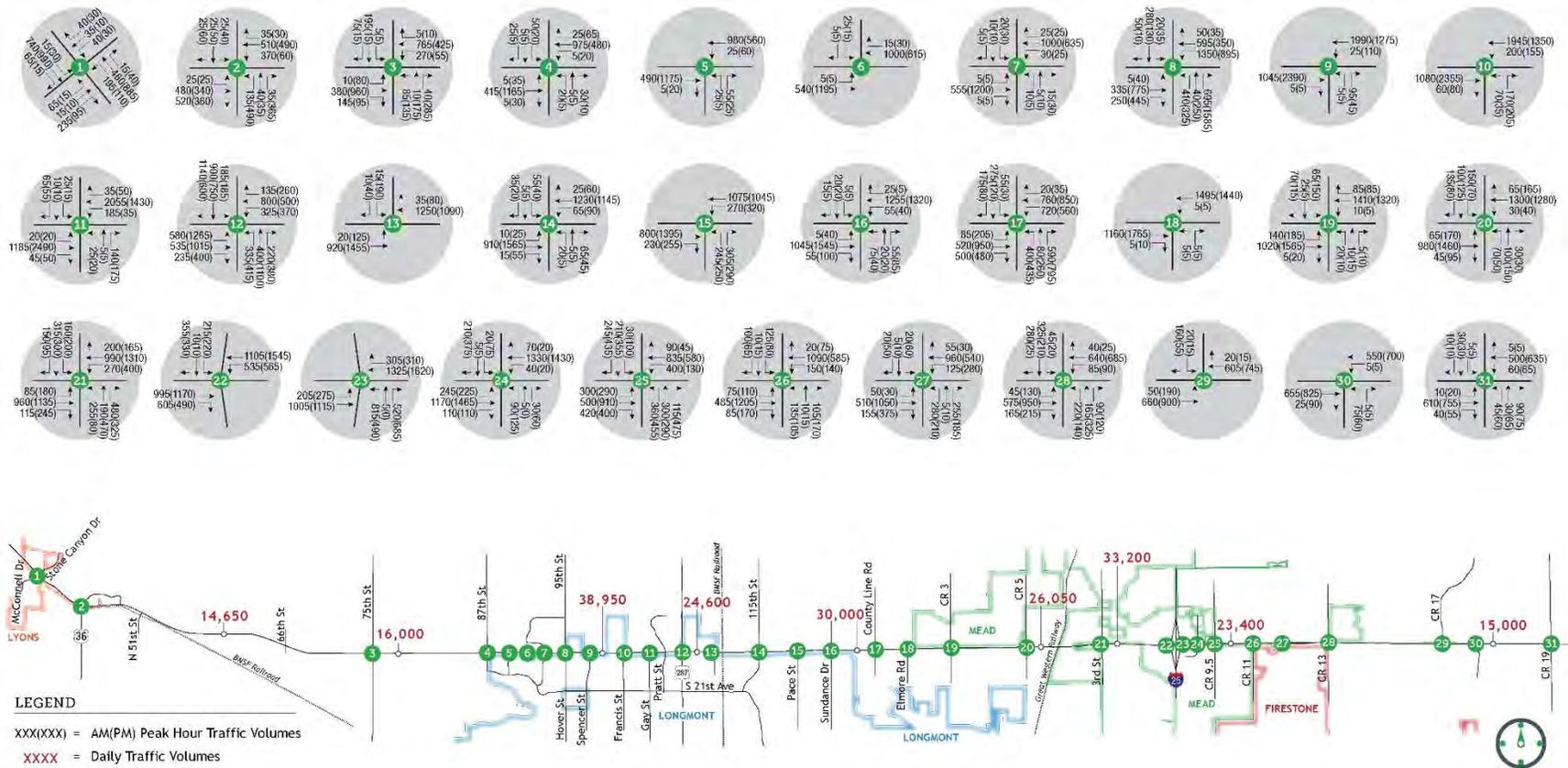
The projected future No Action scenario for traffic and operations is discussed in greater detail in the *SH 66 PEL Corridor Conditions Report*. The report states that daily traffic volumes on SH 66 are expected to increase between 25 percent and 50 percent by the year 2040. The future increase in traffic volumes will result in more congestion and delay. The 2040 No Action volumes and projected daily traffic are shown in Figure 6.

The projected future 2040 No Action operational analysis (see Figure 7) shows that multiple signalized and unsignalized intersections will fail with the existing geometry. As volumes increase along the corridor, the number of acceptable gaps in SH 66 traffic for vehicles to safely turn into or across is anticipated to further decrease. As is the case currently, vehicles that do turn onto SH 66 will, at many locations, enter the only available lane of travel and will do so at slow speeds. This situation may result in vehicles on SH 66 having to slow, producing additional delay and congestion and potential safety issues. In the 2040 No Action scenario, the highway users are expected to experience low to minor levels of congestion on a smaller portion of the study area (54 percent eastbound and 71 percent westbound) and heavy or significant congestion on a higher portion of the study area (25 percent westbound and 32 percent eastbound). The expected increase in congestion in 2040 is consistent with the projected growth in traffic volumes and degradation in operations at most intersections, which may result in increased delays, longer queues, and motorists taking longer than expected or anticipated while using SH 66 to commute to work, conduct business, or travel to recreation activities and destinations. By 2040, the end-to-end travel time indices are expected to increase by as much as 158 percent and by more than 400 percent on some individual sections. The projected increase in traffic volumes will result in longer delays and trips for all motorists using all or part of SH 66, indicating the need for improvements to help reduce delay and provide more efficient and reliable mobility.

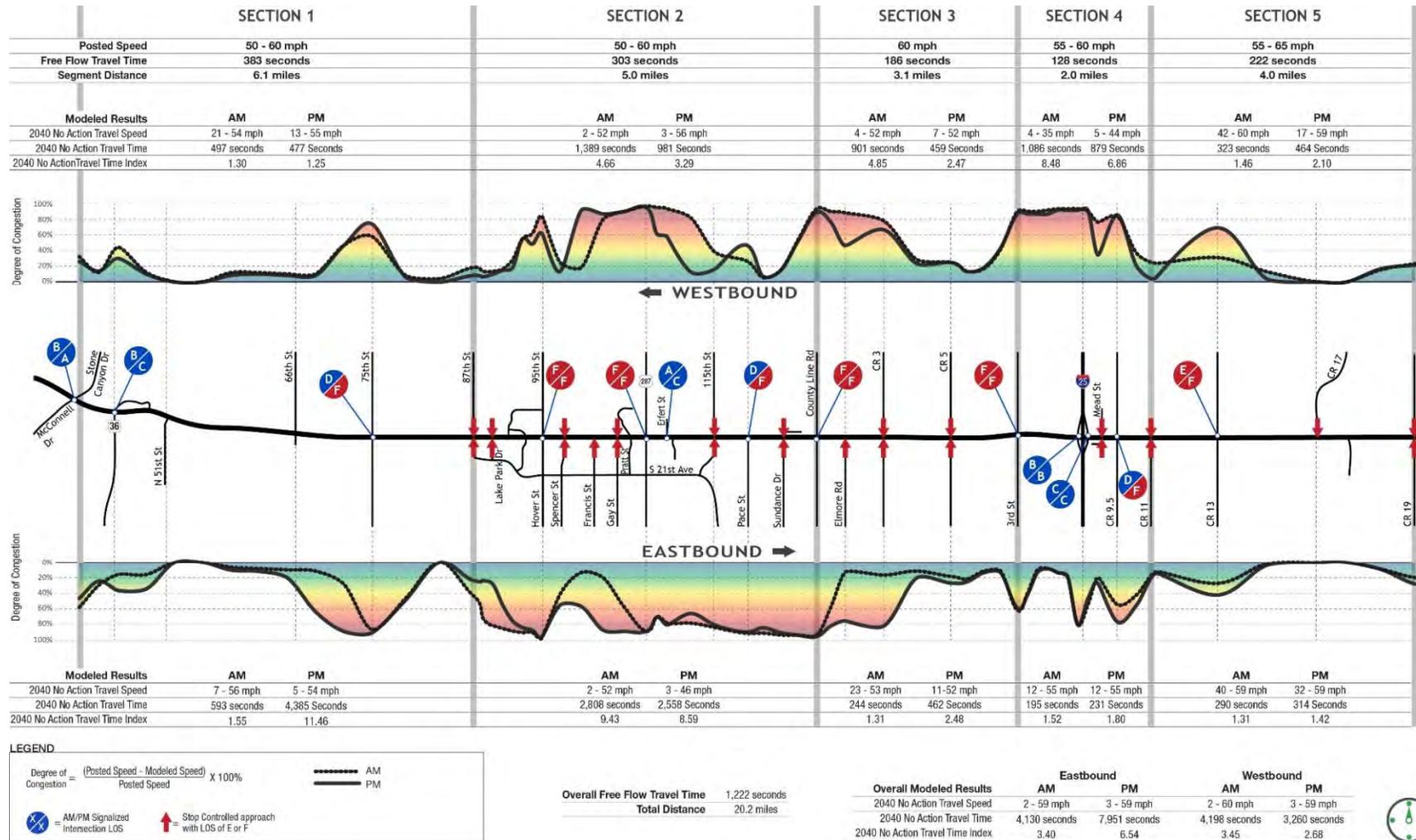
**Figure 5. Crash History Along SH 66**



**Figure 6. 2040 Projected Traffic Volumes**



**Figure 7. 2040 No Action Traffic Operations on SH 66**



### 3. Public Involvement

The *State Highway Access Code* requires at least one advertised public meeting be held during the development of an ACP. For the SH 66 ACP, an extensive public involvement process was used, including:

- Coordination with outreach efforts as part of the PEL project
- Website postings on the PEL website
- Initial public open house to present existing conditions and introduce the public to the ACP process in April 2019
- Presentations to the SH 66 Coalition, which is comprised of local agency planning/engineering staff and elected officials in March 2019 and June 2019
- Meetings with local agency public works staff and/or presentations to elected officials
- Stand-alone ACP Open House presenting the draft plan recommendations in July 2019
- Final public open house held jointly with the PEL to present the final plan in September 2019

Property ownership data were obtained from the Boulder and Weld County assessors' online databases and Geographic Information System (GIS) data files as part of the PEL public outreach efforts. Postcards were mailed to residents and businesses within one-half mile of the SH 66 corridor prior to each open house. Additionally, advertisements for the open houses were posted on CDOT's website and social media, as well as on several of the stakeholder agencies' websites and social media accounts. The mailing list used for the public involvement portion of this study can be found in the PEL report appendices.

The first open house to present the existing conditions and to introduce the concept of access control to the public was held on April 16 and April 18, 2019, at a joint PEL open house. The second public meeting to present the draft SH 66 ACP to the public occurred as a stand-alone meeting on July 25, 2019, at the Longmont Senior Center. Participants could provide feedback through comment cards at the open house or through a questionnaire posted on the project website. The final set of public meetings to present the PEL and ACP recommendations occurred September 25 and September 26, 2019, in Longmont at the Weld County Southwest Service Complex and Longs Peak Middle School. The purpose of the open house was to introduce the project team; identify the study's purpose, process, and schedule; provide information about the methods and benefits of access control; present the ACP; and receive comments from stakeholders and the public. Representatives from the Towns, City, Counties, CDOT, and the PEL and ACP consulting teams were on hand to answer questions from those in attendance. A copy of the meeting materials is in Appendix E of this report. The comments received at all of the Open Houses are documented in the final SH 66 PEL Report. The comments were taken into consideration during the development of the recommended ACP.

As part of the public involvement for this study, two access control plan presentations to the SH 66 Coalition were made, which is comprised of local agency planning and engineering staff as well as elected officials. The purpose of the presentations was to provide information to the elected officials and to keep them informed about the progress of the project.

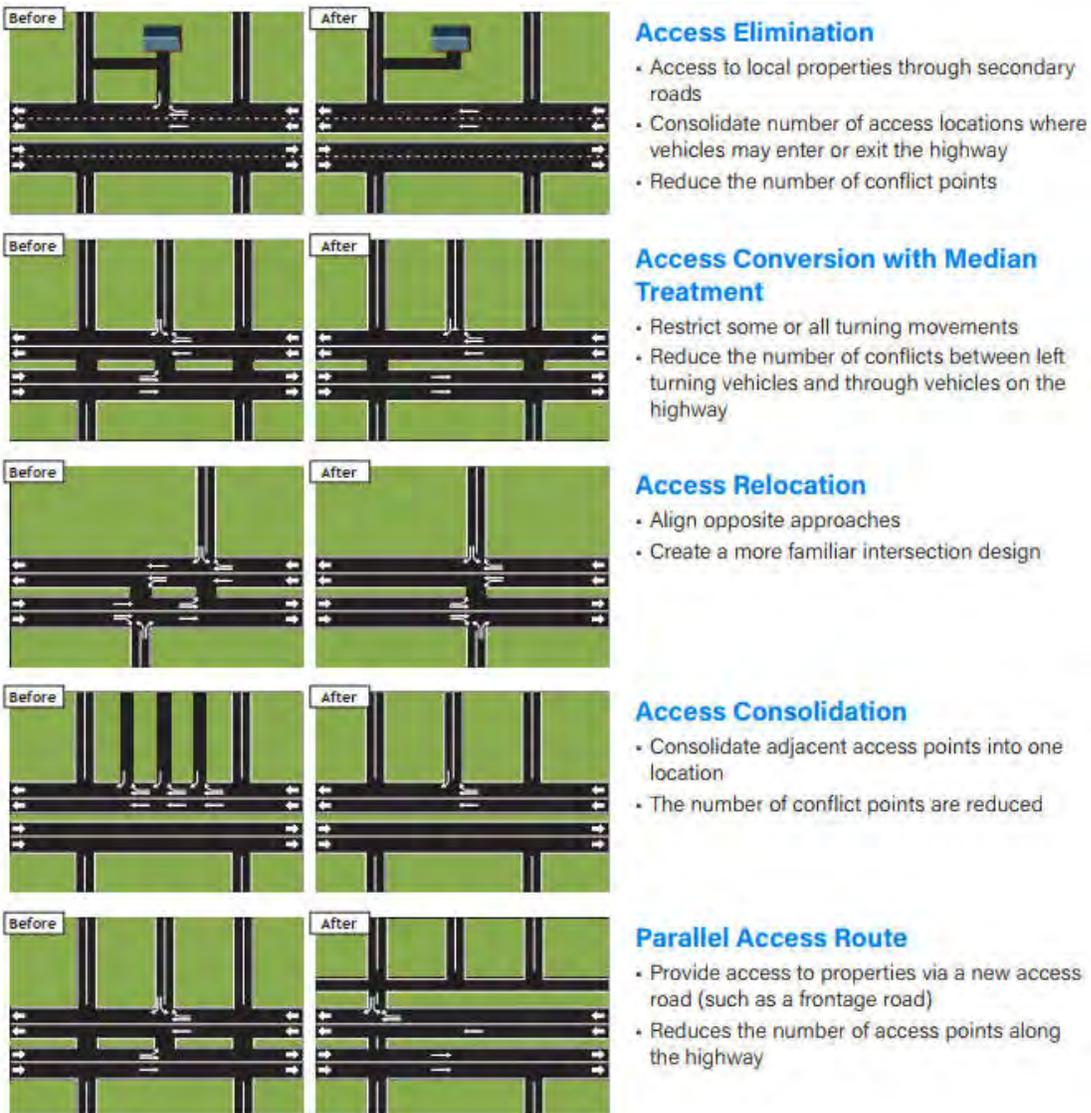
A project website for the PEL project was developed for posting information regarding the status of the project, open house materials, and advertisements for upcoming open house meetings. The ACP also posted its information to this website at <https://www.codot.gov/library/studies/co-66-pel>.

## 4. Access Control Methods

There are several options that allow changes to the existing roadway configuration or geometry to assist in the management of the number, frequency, and location of intersections/driveways along a roadway. Each option provides a different means to manage access along a roadway. In addition, each option has unique benefits and can be used in conjunction with other options to help improve traffic flow, operations, and safety while maintaining adequate access to the adjacent land uses. The following access control methods, shown in Figure 8, are the most common:

- Access Elimination
- Access Conversion/restriction with median treatment
- Access Relocation
- Access Consolidation
- Parallel Access Route

**Figure 8. Methods of Access Control**



Access elimination typically is used at locations where a property has more than one access point. To meet the objectives of an ACP to reduce the number of access points for safety and operational reasons, all properties adjacent to SH 66 should be limited to a single access where reasonable access to secondary roads is not possible.

The purpose of access conversion through the use of median treatments is to eliminate some or all turning movements to reduce the number of conflicts between left-turning vehicles and through vehicles on the highway. By creating three-quarter movement accesses (left turns are allowed into the driveways, but not out), the number of conflicts will be reduced.

Access relocation is an access control method that would either align opposite approaches to create a more familiar intersection design or move an existing access point to a new location. Properties that are situated close to existing or planned future roads that currently have driveways with direct access to SH 66 will be closed as development occurs or as new roads are constructed. Many of these direct connection driveways can be closed and moved to align with the new roads.

Access consolidation is used to reduce the number of access points along the roadway. Multiple driveways could be consolidated into a single point that is shared by adjacent properties to reduce conflicts, improve operations, and maintain adequate access to all properties.

A parallel access route provides access to properties via a new access road, such as a frontage road. This method reduces the number of access points directly along the highway. The proposed Access Road with Advisory Shoulder concept developed in the PEL is one example of a unique parallel access route. The shared paths would provide access for short stretches to vehicles, while providing a continuous path separate from SH 66 between East Highland Drive East and 87th Street for pedestrians and bicyclists. The concept of the shared path is shown in Figure 9.

**Figure 9. Access Road with Advisory Shoulder Concept**



## 5. Access Recommendations

The proposed ACP, when fully implemented, recommends 122 access locations within the study area, including 59 full-movement intersections proposed compared to the 346 full-movement intersections that exist today. Table 3, below, shows the total number of existing and proposed accesses within each segment. The proposed access control plan maps can be found in Appendix D.

**Table 3. Proposed Number of Accesses**

Section	Segment Length (miles)	Number of Existing Accesses			Total	Number of Accesses with ACP Implemented			Total
		Full Movement	Partial Movement	Other		Full Movement	Partial Movement	Other	
McConnell Dr to 87th St	5.8	145	15	0	160	10	28	0	38
87th St to County Line Road	5.0	74	7	2	83	15	13	2	30
County Line Road to Weld County Rd 7	3.0	45	0	2	47	6	10	2	18
Weld County Rd 7 to Weld County Rd 11	2.0	21	1	0	22	10	3	0	13
Weld County Rd 11 to Weld County Rd 19	3.9	61	0	0	61	16	5	2	23
<b>Total</b>	<b>19.9</b>	<b>346</b>	<b>23</b>	<b>4</b>	<b>373</b>	<b>57</b>	<b>59</b>	<b>6</b>	<b>122</b>

### 5.1. Level of Service Analysis

When the final configuration for each access point was determined, another LOS analysis was conducted for the 2040 Build Scenario that used the laneage and cross-sections developed as part of the PEL recommendations for the entire study area. This LOS analysis reflects the proposed access changes to the study roadway. Table 4 contains the intersection LOS and detailed analysis of the future LOS with the recommended access changes as provided in Appendix F.

**Table 4. 2040 Operational Analysis**

Section	Intersection	2040 No Action Conditions				2040 Proposed Future Conditions			
		AM		PM		AM		PM	
		LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
<b>1A</b>	McConnell Dr	C	21.8	D	46.2	C	20.6	B	13.7
	US 36	B	16.0	C	23.5	C	29.3	C	28.3
<b>1C</b>	75th St	B	14.0	D	40.8	C	23.5	D	43.1
<b>2</b>	Airport Rd/ 87th St	F	102.1*	F	148.5*	B	10.6	A	8.6
	Shore Dr	C	16.1*	D	26.0*	B	10.6*	B	14.3*
	Anhawa Ave	E	47.0*	F	74.0*	B	13.1*	B	10.8*
	Lake Park/Jotipa Dr	F	116.7*	F	>500*	B	13.3*	B	14.8*
	Hover St/95th St (East Int)	F	147.8	F	403.2	B	17.1	D	43.4
	Hover St/95th St (West Int)					B	11.0	D	39.2
	Spencer St	F	>500*	F	>500*	C	23.0*	E	41.3*
	Francis St	F	>500*	F	>500*	B	13.8	C	34.9
	Gay St	F	351.0*	F	>500*	E	41.8*	F	348.3*
	US 287 SBR	F	109.2	F	178.2	A	8.7	B	11.9
	US 287 NBL					A	3.8	A	8.5
	US 287 SBL					A	4.8	A	1.0
	US 287 NBR					A	6.1	A	4.9
	Erfert St	A	3.2	B	11.0	B	14.6	B	17.8
	Alpine Dr	F	>500*	F	>500*	B	13.7	B	15.9
Pace St	E	57.2	F	167.9	B	14.3	C	29.0	
<b>3</b>	County Line Rd	F	165.3	F	153.4	D	40.6	D	48.0
	Elmore Rd	F	199.4*	F	>500*	B	13.8*	C	19.4*
	Weld County Rd 3	F	>500*	C	19.8*	B	13.2	B	16.1
	Weld County Rd 5	B	14.7*	C	20.9*	B	18.7	B	18.4

Section	Intersection	2040 No Action Conditions				2040 Proposed Future Conditions			
		AM		PM		AM		PM	
		LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
<b>4</b>	Weld County Rd 7/3rd Street	F	458.8	F	>500	C	29.5	D	52.4
	I-25 SB ramps	B	16.8	B	17.1	A	9.8	B	15.4
	I-25 NB ramps	B	14.7	C	20.9	C	25.7	C	20.8
	Mead St	F	>500*	F	>500*	F	76.9*	F	455.5*
	Weld County Rd 9.5	F	197.5	F	>500	B	16.9	C	23.5
<b>5A</b>	Weld County Rd 11	F	>500*	C	16.8*	D	40.8	C	30.0
	Weld County Rd 11.5	-	-	-	-	C	22.7	C	24.2
<b>5B</b>	Weld County Rd 13	F	156.1	F	185.7	B	19.3	C	21.3
	Weld County Rd 17 North	D	26.8*	F	76.5*	A	7.5	A	6.9
	Weld County Rd 17 South	E	43.9*	F	91.4*	B	12.9	B	12.6
	Weld County Rd 19	F	154.1*	F	>500*	B	11.9	B	12.4

\* Denotes unsignalized intersection; worst-movement LOS and delay are reported

The results of the analysis of the future LOS with the recommended ACP show that most of the intersections and the SH 66 arterial are projected to operate with less delay than if the ACP is not implemented. With the ACP implemented, many of the intersections are proposed to be converted to a right-in, right-out or three-quarter movement to minimize the left-turn movements out from side streets onto the highway. Side street delay from vehicles trying to enter SH 66 is greatly reduced when turn restrictions are implemented. Additional intersections are identified as locations where a signal may be constructed, which minimizes the overall intersection delay by servicing all turning movements within each cycle length. Due to high volumes at several intersections, the LOS fails even with conventional signalized intersections, so full and partial displaced left intersections and grade separated intersections were identified as feasible to build at Hover Street/95th Street, US 287, WCR 9.5, and WCR 13.

## 6. Next Steps

There are several important steps that need to occur in the short term and long term to ensure the study roadway realizes the maximum benefit of the recommended ACP. These next steps start with the approval process.

### 6.1. Approval Process

Before the study roadways can begin to benefit from the recommendations of the ACP, a few important events must occur:

- IGA—All parties must agree to an IGA. (See Appendix B for a copy of the IGA.)
- Plan Approval—The ACP must be approved by each stakeholder entity and adopted by resolution. This includes each agency's Council or Board of Commissioners.
- Plan Adoption—The Towns, City, and Counties must sign the IGA.
- Plan briefing to the State Transportation Commission.
- Approval by the State Access Manager of CDOT, which puts the plan into law.

After the ACP is officially adopted by the Towns, City, Counties, and CDOT, the adopted ACP becomes the basis for future decisions on site access. The current SH 66 ACP, as identified in this document, does not have any implementation timing or schedule.

### 6.2. Plan Implementation

It is important to remember that the ACP is intended to represent a long-range plan for the study roadway. Implementation of the full plan will occur over the long term as a phased approach based on when:

- A safety need is identified
- New development or redevelopment occurs
- Funding for improvements is available
- Traffic needs arise

When intersections or access points have operational or safety concerns, the Towns, City, Counties, and CDOT will look for ways to address these issues. These projects most likely would incorporate portions of the ACP, such as implementing turn restrictions or improving adjacent intersections/access locations, to improve operations or increase safety along the corridor.

The most common trigger for the phased approach relates to when a property along SH 66 develops/redevelops or if a driveway experiences a traffic volume increase of 20 percent or more (per the *State Highway Access Code*). Under this scenario, a new CDOT access permit is required, and the Town or City, County, and CDOT would work with the property owner or the developer to make the access changes and highway improvements in the area directly impacted by the development/redevelopment. Coordination through the development process is critical to the ultimate success of the plan. If the ultimate ACP cannot be implemented when a property redevelops, the property should develop in such a way as to not prohibit the plan implementation. For example, buildings should be constructed in such a manner as to use a future access location shown on the plan.

Another method to implement access control is through a publicly funded project by any combination of Towns, City, Counties, and/or CDOT. A future public project would include the access changes described in the ACP that could be implemented at the time of the project. With a roadway improvement project, the government would be responsible for making the access changes to the highway. Even with the planned project, all recommendations of the plan may not be implemented at one time because access must still

be provided to each property on the corridor. For example, if a property has not redeveloped, it might not be feasible to relocate the driveway, or if a planned future adjacent street has not yet been constructed, alternative access may not be available. In cases like this, an interim access to the property would be maintained until the ultimate access configuration could be achieved. Continuing coordination must occur between the Town of Lyons, City of Longmont, Town of Mead, Town of Firestone, Boulder County, Weld County, and CDOT to ensure proper implementation of the plan in the future.

Another important aspect of the implementation process is how access is granted to new developments. Each property along the study roadway must be provided with reasonable access. The Town, City, or County and CDOT should work with the owner/developer to ensure projects are designed with consideration to where access will be permitted in the ultimate ACP. Access will be provided to the property as shown on the ACP unless it is not feasible to implement at the time of the development. Then, an interim access will be permitted, which will change when the ultimate access conditions can be achieved. Coordinating with the owner/developer throughout the project development process will ensure the final design of the property does not preclude the implementation of the final ACP configuration on the study roadway.

### **6.3. Plan Modification**

The outcome of this study is the SH 66 ACP, which identifies the number, location, and type of access points that will be allowed on SH 66 within the study limits. Future changes to the plan are allowed based upon the guidelines of the *State Highway Access Code*, according to Section 2.12, Access Control Plans:

*The plan must receive the approval of both the Department and the appropriate local authority to become effective. This approval shall be in the form of a formal written agreement signed by the local authority and the Chief Engineer of the Department. After an access control plan is in effect, modifications to the plan must receive the approval of the local authority and the Department. Where an access control plan is in effect, all action taken in regard to access shall be in conformance with the plan and current Code design standards unless both the Department and the local authority approve a geometric design waiver under the waiver subsection of the Code (p. 30, paragraph 3).*