ENVIRONMENTAL ASSESSMENT (EA)

FOR THE

DOWNTOWN ESTES LOOP PROJECT

(ROADWAY, BRIDGE AND CHANNEL/FLOODPLAIN IMPROVEMENTS)

CO FLAP 34(1) & 36(1) MORAINE AVENUE AND RIVERSIDE DRIVE

TOWN OF ESTES PARK, CO

PREPARED BY:

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

CENTRAL FEDERAL LANDS HIGHWAY DIVISION

LAKEWOOD, COLORADO

Volume 1 of 3

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12300 West Dakota Avenue

Lakewood, CO 80228-2683

Prepared by:

AECOM

6200 South Quebec Street

Greenwood Village, CO 80111

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WHAT'S IN THIS DOCUMENT

The Federal Highway Administration (FHWA), Central Federal Lands Highway Division (CFLHD) has prepared this Environmental Assessment, which examined the potential environmental impacts of the alternatives being considered for the proposed project located in the Town of Estes Park, Colorado. The EA document describes why the project is being proposed, alternatives for the project, the existing environment that could be affected by the project, the potential impacts from each of the alternatives, and the proposed avoidance, minimization and/or mitigation measures. FHWA-CFLHD is the lead agency for the National Environmental Policy Act (NEPA) compliance.

For individuals with sensory disabilities, this document can be made available in an alternate format; if special accommodations are needed, please write to James Herlyck at James.Herlyck@dot.gov or 12300 West Dakota Avenue, Suite 380, Lakewood, CO 80228.

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VIEWING LOCATIONS

Copies of the Environmental Assessment (EA) and the technical reports referenced in this EA are available for review at the locations listed below during the 30-day public comment period.

Town Hall
Town Clerk's Office
170 MacGregor Avenue, Room 130
Estes Park, Colorado 80517
970.577.4777

FHWA, Central Federal Lands Highway
Office (Front Desk)
12300 West Dakota Avenue
Lakewood, Colorado 80228
720.963.3000

Estes Valley Library
335 East Elkhorn Avenue
Estes Park, Colorado 80517
970.586.8116

CDOT Region 4
10601 West 10th Street
Greeley, Colorado 80634
970.350.2148

Estes Park Visitor Center
500 Big Thompson Avenue
Estes Park, Colorado 80517
970.577.9900

CDOT Headquarters
4201 East Arkansas Avenue
Denver, Colorado 80222
303.757.9011

Project website: [redacted]

Ways to Comment on the EA

Written comments will be accepted until August 5th, 2016 by the following ways:

- Through the project website at [redacted]
- By email to [redacted]
- By mail or drop off:

Mail to:
Felsburg Holt & Ullevig
Attention: Estes Project Team
6300 South Syracuse Way, Suite 600
Centennial, CO 80111

Or drop off at:
The Town of Estes Park
Public Works Department
170 MacGregor Avenue
Estes Park, CO 80517

Oral comments will be accepted and recorded only at the public hearing that will be held on July 20th, 2016 at the Estes Park Events Center (1125 Rooftop Way) from 4:30-8:30 PM.

****Please note that names and addresses provided become part of the public record****

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U.S. Department of Transportation
Federal Highway Administration
Central Federal Lands Highway Division

ENVIRONMENTAL ASSESSMENT (EA)

Submitted Pursuant to:

(Federal) 42 U.S.C. 4332(2)(c) and 49 U.S.C. 303

for the

DOWNTOWN ESTES LOOP PROJECT
(ROADWAY, BRIDGE AND CHANNEL/FLOODPLAIN IMPROVEMENTS)
CO FLAP 34(1) & 36(1)
TOWN OF ESTES PARK, CO

Additional information may be obtained from the following individuals:

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Project Manager
Federal Highway Administration
12300 West Dakota Avenue, Suite 380
Lakewood, CO 80228
James.Herlyck@dot.gov

C. D. R. Scott

FHWA-CFLHD
Director of Project Delivery

6/29/2016

Date

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A Federal agency may publish a notice in the Federal Register, pursuant to 23 USC §139(l), indicating that one or more Federal agencies have taken final action on permits, licenses, or approvals for a transportation project. If such notice is published, claims seeking judicial review of those Federal agency actions will be barred unless such claims are filed within 150 days after the date of publication of the notice, or within such shorter time period as is specified in the Federal laws pursuant to which judicial review of the Federal agency action is allowed. If no notice is published, then the periods of time that otherwise are provided by the Federal laws governing such claims will apply.

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LIST OF ACRONYMS AND ABBREVIATIONS

ADT	Average Daily Traffic
APE	Area of Potential Effect
AST	Aboveground Storage Tank
ATPPL	Alternative Transportation in the Parks and Public Lands Program
ATR	Automatic Traffic Recorder
BMPs	Best Management Practices
CAQCC	Colorado Air Quality Control Commission
CDOT	Colorado Department of Transportation
CDPHE	Colorado Department of Public Health and Environment
CDPS	Colorado Discharge Permit System
CEQ	Council on Environmental Quality
CFLHD	Central Federal Lands Highway Division
CFR	Code of Federal Regulations
CLOMR	Conditional Letter of Map Revision
CPW	Colorado Parks and Wildlife
COSTIS	Colorado Storage Tank Information System
CWA	Clean Water Act
CWCB	Colorado Water Conservation Board
DHV	Design Hourly Volume
DOI	Department of Interior
DOT	Department of Transportation
EA	Environmental Assessment
EDC	Economic Development Corporation
EPA	U.S. Environmental Protection Agency
EPSD	Estes Park Sanitation District
EPVC	Estes Park Visitor Center
ESA	Endangered Species Act
EVRPD	Estes Valley Recreation and Park District
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FLAP	Federal Lands Access Program
FTA	Federal Transit Administration
HCM	Highway Capacity Manual
IPAC	Information, Planning, and Conservation System
ITS	Intelligent Transportation Systems
Leq(h)	one-hour equivalent sound level
LOMR	Letter of Map Revision
LOS	Level of Service

LUST	Leaking Underground Storage Tank
LWCF	Land and Water Conservation Fund
MAP-21	Moving Ahead for Progress in the 21st Century
MBTA	Migratory Bird Treaty Act
MLRA	Major Land Resource Area
mph	Miles Per Hour
MSAT	Mobile Source Air Toxics
MUTCD	Manual on Uniform Traffic Control Devices
NAAQS	National Ambient Air Quality Standard
NAC	Noise Abatement Criteria
NCHRP	National Cooperative Highway Research Program
NEPA	National Environmental Protection Act
NFRMPO	North Front Range Metropolitan Planning Organization
NH_3	Ammonia
NHPA	National Historic Preservation Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NPS	National Park Service
OHWM	Ordinary High Water Mark
OPS	Colorado Division of Oil & Public Safety
OWUS	Other Waters of the United States
PDC	Program Decision Committee
PID	Photoionization detector
$PM_{2.5}$	Particulate Matter 2.5 microns in diameter
ppm	Parts per million
RAMP	Responsible Acceleration of Maintenance and Partnerships
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Conditions
RMNP	Rocky Mountain National Park
ROG	Reactive organic gases
ROW	Right-of-Way
RTP	Regional Transportation Plan
SH	State Highway
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO_2	Sulphur dioxide
SPF	Safety Performance Functions
SWMP	Stormwater Management Plan
TAC	Technical Advisory Committee
TDM	Travel Demand Management
TMDL	Total Maximum Daily Load

TVC	(Estes Park) Transportation Visioning Committee
UFR	Upper Front Range (Transportation Planning Region)
ULI	Urban Land Institute
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
US 36	United States Highway 36
UST	Underground Storage Tank
UTSD	Upper Thompson Sanitation District
VOC	Volatile Organic Compounds
vpd	Vehicles Per Day
vph	Vehicles Per Hour
Xbk	Knotted mica schist
YgLP	Longs Peak granite

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TABLE OF CONTENTS

Volume 2: Appendices

Volume 3: Technical Reports

LIST OF FIGURES

LIST OF TABLES

Page

ES EXECUTIVE SUMMARY

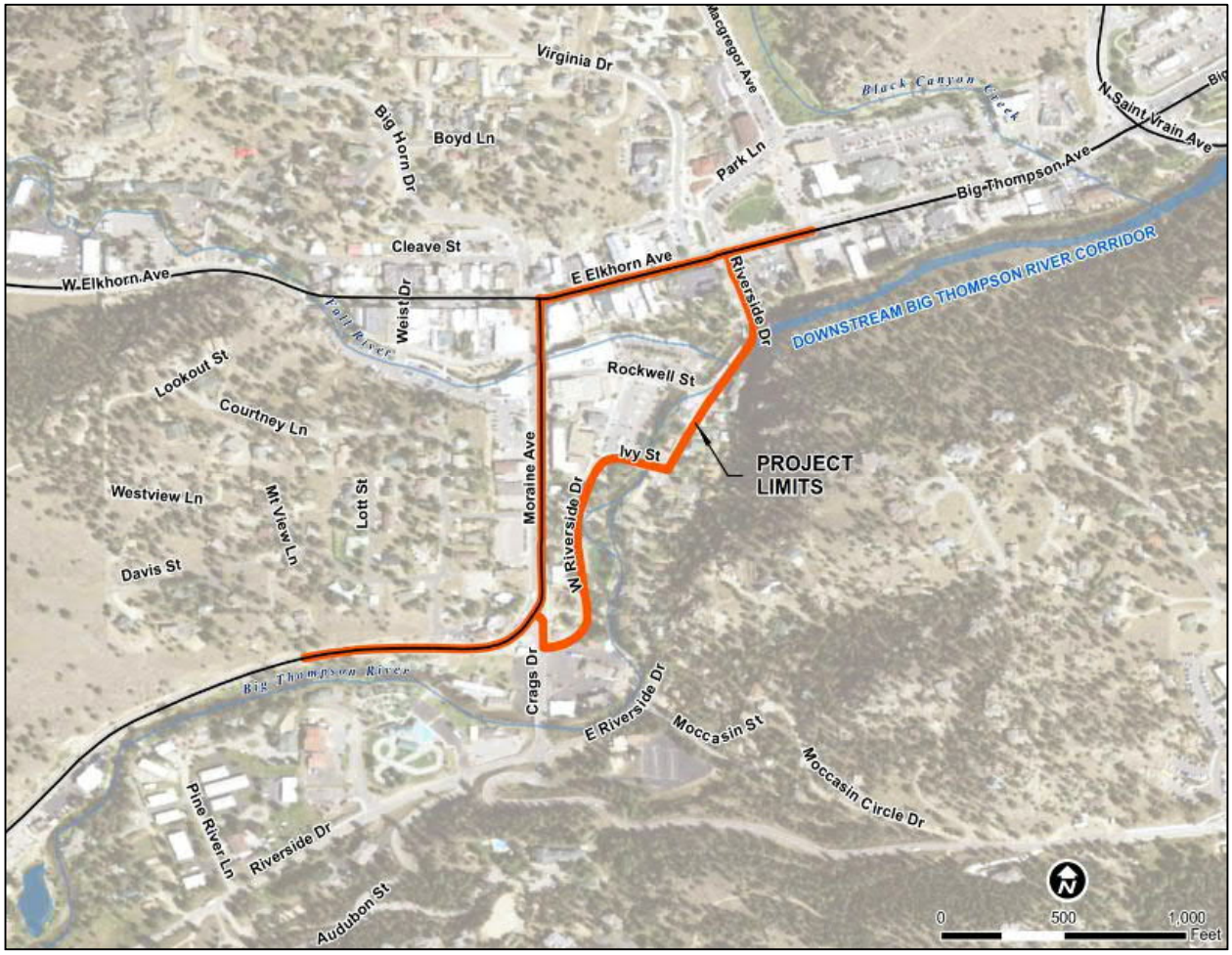
ES.1 What is this Project?

The Downtown Estes Loop project is being proposed to alleviate congestion and improve mobility in downtown Estes Park, Colorado. The project proposes conversion of Elkhorn Avenue, Moraine Avenue and Riverside Drive from the existing two-way configuration to a one-way couplet. The study area is shown in Figure ES-1.

The National Environmental Policy Act of 1969 (NEPA) requires that federal agencies use a systematic, interdisciplinary approach to decision-making when actions may affect the quality of the human environment. This Environmental Assessment (EA) documents the NEPA process for this project. Central Federal Lands Highway Division (CFLHD) is the Federal Lead Agency for this EA. One of CFLHD's functions is to administer the Federal Lands Access Program (FLAP) established under the transportation bill called Moving Ahead for Progress in the 21st Century (MAP-21, §1119; 23 USC 201, 204). FLAP provides project funds for roads that provide access to Federally owned properties that are owned and/or maintained by non-Federal Government agencies with an emphasis for projects facilities accessing high use recreation areas and economic generators. Matching funds are required in order for projects to be eligible for FLAP program funds.

The Town of Estes Park applied for this project and committed the required matching funds in 2013. The Colorado FLAP Program Decision Committee (PDC) approved funding to include this project in the Colorado FLAP program. The Proposed Action is administered by CFLHD in cooperation with the Town of Estes Park and the Colorado Department of Transportation (CDOT).

Figure ES-1: Project Study Area



While the original EA process began with a study area that included only improvement to Elkhorn Avenue, Moraine Avenue, and Riverside Drive, the study was expanded to include future phases that could occur in the general area by others. More information is provided in Section ES.6 below and in *Chapter 2: Alternatives Considered*. The Proposed Action analyzed in this EA consists of the following:

- Funded Phase 1 – CFL project CO FLAP 34(1), 36(1) Moraine Avenue and Riverside Drive – reconstruction and realignment of Riverside Drive, reconstruction of the Ivy Street Bridge and associated transportation improvements along Elkhorn and Moraine could be built as part of the currently funded FLAP project (Phase 1). These improvements are funded.
- Future reconstruction of the Rockwell and Riverside Bridges – This will likely occur at some point in the future; however, these activities are not currently planned and programmed "projects". There is no identified funding source; CDOT involvement is likely as they will own and maintain the newly constructed Riverside Drive.
- Future channel/floodplain improvements – There is not a currently planned or programmed project that includes these activities; they are not yet funded but are likely to be built in subsequent phases.

ES.2 How is this Project Funded?

In September 2013, the Downtown Estes Loop Project was selected for inclusion in the FLAP for Preliminary Engineering, right-of-way, and construction costs up to $13 million. FLAP provides funding for work on public facilities that are located on, are adjacent to, or provide access to federal lands. In addition, the Town received funding ($4.2 Million) under the CDOT Responsible Acceleration of Maintenance and Partnerships (RAMP) Program. The RAMP Program funding is designed to promote public-private partnerships including the transfer of ownership of certain CDOT roadways to a local agency with demonstrated support and willingness to take ownership and maintenance. Under this program, the Town accepted ownership and maintenance from CDOT of West Elkhorn Avenue (from Moraine Avenue west to US 34), and the $4.2 Million will constitute the local match for the larger FLAP project. Neither the RAMP nor FLAP funding are in the form of loans that would require repayment to the state or federal government.

ES.3 What is the Purpose of this Project?

The purpose of the FLAP project is to improve access to Federally-owned properties that function as major economic generators and provide vast public recreational opportunities. The program intent is to provide improved access while maintaining environmental and economic viability of the adjacent communities. This project is intended to improve access to and from Rocky Mountain National Park (RMNP) by reducing travel time, congestion, and pedestrian/vehicle conflicts through downtown Estes Park as well as the associated negative impacts to visitor experience.

ES.4 Why is this Project Needed?

The project is needed to improve system management and reduce severe congestion of the existing roadway network for both motorized and non-motorized users accessing RMNP. During the peak summer visitor season, traffic demand at the two main project intersections (Elkhorn/ Moraine and Elkhorn/Riverside) used to access the RMNP Beaver Meadows entrance exceeds capacity, which contributes to extensive delay, safety concerns and community impacts.

Pedestrian/Vehicle Conflicts at Elkhorn/Moraine Intersection

The primary project needs depend highly on a broad range of issues and are discussed as follows:

- For many years, travel into and out of downtown Estes Park combined with traffic to and from RMNP has created severe weekend congestion in downtown Estes Park for

several months of the year. This congestion limits access to and from the park's highest use entrance (Beaver Meadows).

- Visitor experience along this corridor is diminished by the extreme congestion which causes increased vehicle/pedestrian conflicts and poor air quality in the business district and heavy delays to visitors of RMNP.
- In the future (2016 – 2040), anticipated traffic increases are expected to increase the severity of delays and cause delays to occur on more days per year and for longer periods of time.
- In 2014, capacity was exceeded approximately 40 days per year for periods of 2 hours or more creating 262 hours of congestion on those 40 days.
- Traffic forecasts for 2040 indicate that capacity will be exceeded for two hours or more on approximately 147 days per year creating 1,189 hours of congestion on those 147 days.
- On high traffic days, the number of hours of severe congestion in a given day will increase as the peak demand is spread out during the day.
- In 2040, some of the days when congestion is predicted are not associated with peak visitor season. Congestion on these days is caused by growth forecasts in employment and housing. As a result, congestion in 2040 will also occur on weekdays and during off season weekends.
- Existing and future congestion at the Elkhorn/Riverside, Elkhorn/Moraine and Moraine/Crags intersections causes motor vehicle, bicycle and pedestrian safety issues, restricts access, limits bus transit service efficiency, extends emergency response times for police, fire and ambulance services, and limits future economic growth in Estes Park and the surrounding area by discouraging travel when congestion is occurring or anticipated.

ES.5 How Were Alternatives Developed and Evaluated?

The project alternatives were developed based upon the project Purpose and Need, as well as through issues identified during the public scoping process and evaluation of existing conditions. The alternatives were screened through a two-tiered screening process, beginning with preliminary screening (Level 1). Four initial alternatives (including the one identified in the original FLAP application from the Town to CFL) were included in Level 1, as well as a number of alternatives brought forward by the public. Evaluation criteria were developed consistent with the primary components of the purpose and need. These criteria were qualitative, with the intent of comparing each alternative based on a general understanding of the function of each (without the availability of detailed design).

The No Action alternative and five build alternatives were carried from Level 1 into Level 2 for more detailed screening against a broader set of criteria. The Level 2 screening process involved more detailed analysis of design and traffic conditions, project costs, potential impacts to natural resources and a number of other factors. Data was compiled and utilized in the screening based on the best available data at the time.

ES.6 What is the Proposed Action?

Transportation Improvements

The alternatives development and evaluation process resulted in identification of a Build Alternative (referred to as the Proposed Action) that meets the project Purpose and Need. The Proposed Action involves conversion of existing roadways from two-way to one-way for a total length of 0.92 miles. The project begins at the Elkhorn Avenue/Riverside Drive intersection, continues west on Elkhorn Avenue (US 36) to the intersection of Moraine Avenue/Big Horn Drive for 0.15 miles, then turns south on Moraine Avenue (US 36) for 0.3 miles to the intersection of Moraine Avenue and Riverside Drive/Crags Drive. These two-way roadway segments would be converted into one-way roads, west and south, respectively. The two-lane one-way couplet is completed in the returning northerly direction via a reconstructed Riverside Drive. This segment begins at the Moraine Avenue/West Riverside Drive/Crags Drive intersection then follows near West Riverside Drive, Ivy Street and East Riverside Drive for 0.40 miles back to the beginning of the project at the East Riverside Drive/Elkhorn Avenue intersection, completing the loop.

New signals would be added at the two main intersections (Elkhorn/Riverside, Elkhorn/Moraine). A new signal or roundabout will be added at the Moraine/Crags/West Riverside intersection. New sidewalk, on street bike lanes and trail connection improvements would be installed. Directional signage along the corridors will be installed, as well as landscaping.

Channel/ Floodplain Improvements

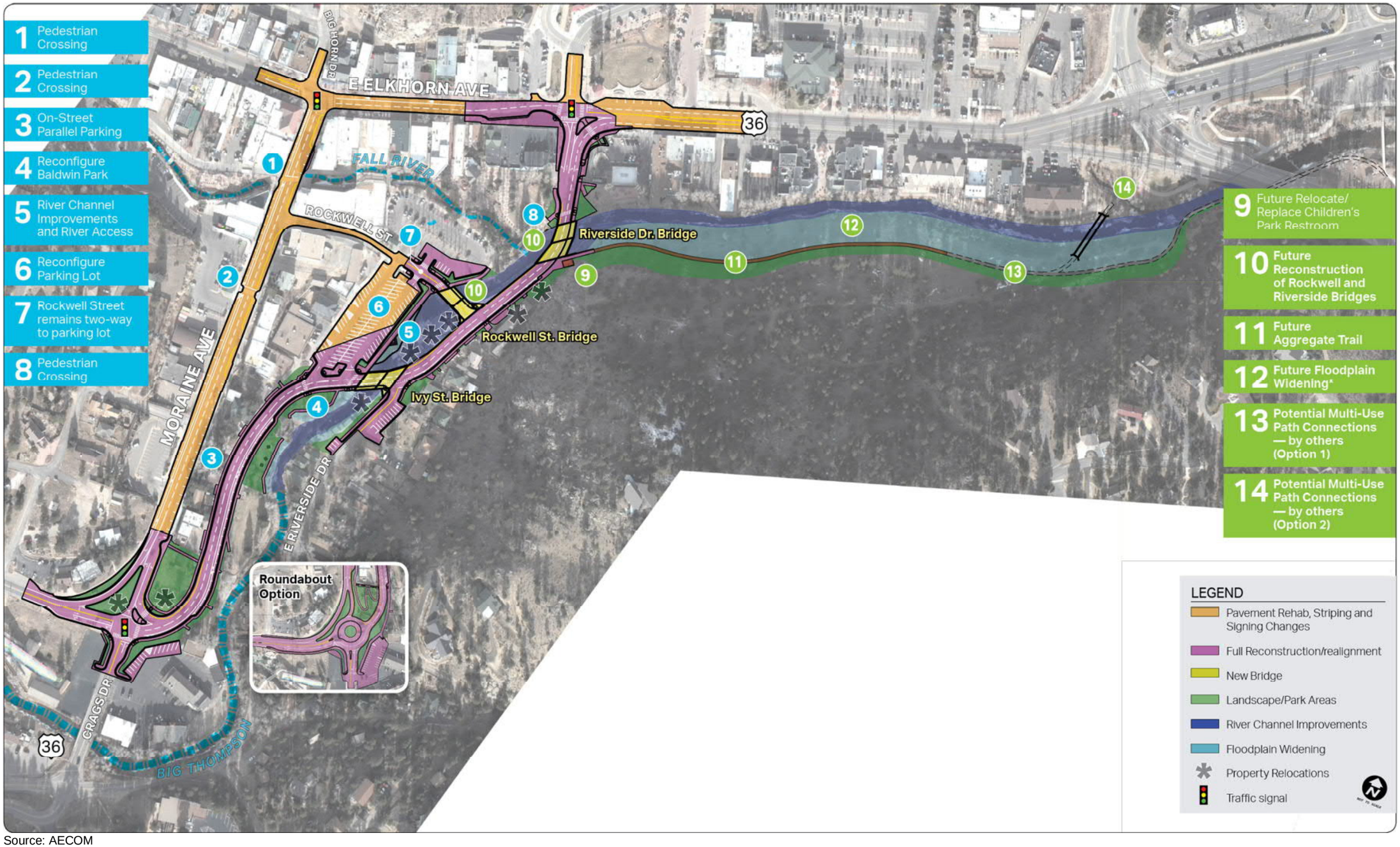
The initial review and estimates for transportation improvements within downtown Estes Park were developed in the Spring of 2013 and included in the Colorado FLAP program. Afterwards a significant flooding event occurred in September 2013 that impacted the project study area. This event began a series of studies by regulatory agencies and local floodplain administrators. The initial studies that have occurred indicate changes to the predicted 100-year flood levels in downtown Estes Park and surrounding areas. Results of these studies, released in 2014 and determined to be the best available data, indicate major increases to floodplain boundaries in downtown Estes Park. CFLHD determined that the results of the best available data are to be incorporated into this NEPA study as the best available regulatory flow volumes, which directly affect the criteria for bridge and drainage design within the project boundaries.

Hydrology and hydraulics analysis indicates that the Ivy Street, Rockwell and Riverside Bridges need to be completely rebuilt and elevated to provide additional hydraulic capacity for the Big Thompson River. The analysis also indicated that rebuilding, enlarging, and elevating bridges alone will not fully mitigate the flooding risks; flooding issues currently extend downstream of the Big Thompson River and Fall River confluence along the Riverwalk park. This increased the study boundaries, the scope of the proposed build alternative, and a plan for phasing the construction of the build alternative. Thus, this EA includes the study of additional elements related to the hydraulic design features that are not required to provide the transportation improvements and improved access to RMNP. This includes the replacement of a bridge on Rockwell Street, the replacement of the bridge on Riverside Drive, and channel/floodplain

improvements along the Big Thompson River between the Riverside Bridge and US 36. The Proposed Action is shown in Figure ES-2.

This EA documents the environmental impacts and opportunities associated with downtown Estes Park roadway, bridge and channel/floodplain improvements. It has been determined that the cost of these improvements exceeds the available funding and the project will be completed in several construction phases. The first phase of construction also known as the Downtown Estes Loop and CO FLAP 34(1), 36(1) Moraine Avenue and Riverside Drive, meets the original project Purpose and Need to improve access to RMNP and could be built as part of the currently funded FLAP project. Phase 1 includes reconstruction and realignment of Riverside Drive, reconstruction of the Ivy Street Bridge and associated transportation improvements along Elkhorn and Moraine. The future bridge replacements along Rockwell Street and Riverside Drive and the future channel/floodplain improvements do not have a funding source or anticipated dates for implementation.

Figure ES-2: Proposed Action



Source: AECOM

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ES.7 What is the No Action Alternative?

The No Action Alternative would leave existing 2015 roadway and other study area conditions as they are through 2040. No roadway capacity, safety, mobility or accessibility improvements would be built within the downtown involving Elkhorn Avenue, Moraine Avenue or Riverside Drive.

ES.8 How Were the Impacts Analyzed?

Potential beneficial and adverse effects of the Build Alternative and the No Action Alternative were analyzed in this EA for direct, indirect, and cumulative impacts to resources.

- Direct impacts are caused by the action and occur at the same time and place.
- Indirect impacts are caused by an action and are later in time or further removed in distance but are still reasonably foreseeable.
- Cumulative impacts result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions.

Specific impacts are described in Chapter 3, as well as mitigation measures identified to address impacts.

ES.9 How will the Project be Phased?

Phase 1

- Funded Phase 1 – CFLHD project CO FLAP 34(1), 36(1) Moraine Avenue and Riverside Drive – reconstruction and realignment of Riverside Drive, reconstruction of the Ivy Street Bridge and associated transportation improvements along Elkhorn and Moraine could be built as part of the currently funded FLAP project (Phase 1). These improvements are funded.

Future Phases

- Future reconstruction of the Rockwell and Riverside Bridges – This will likely occur at some point in the future, however these activities are not currently planned and programmed "projects". There is no identified funding source; CDOT involvement is likely as they will own and maintain the newly constructed Riverside Drive.
- Future channel/floodplain improvements – There is not a currently planned or programmed project that includes these activities; they are not yet funded but are likely to be built in subsequent phases.

ES.10 How has the Public Been Involved To-Date?

The project team implemented a multi-pronged outreach process beginning with a public involvement plan. This plan identified a broad set of engagement tools to gather input, from a project-specific website to in-person meetings. Through the EA process, the project team held public and small group meetings, established a Technical Advisory Team (TAC), and met one-on-one with resource agencies, stakeholder representatives and individual property owners. The public information program provided information about the project and public meetings

through mailings, a project website, advertisements in local newspapers, social media, and a telephone hotline. The Town Public Information Office also helped distribute information about the project through Town communication channels.

ES.11 What Are the Next Steps in this Process?

In accordance with federal regulations, a 30-day review period is required for an EA. The comment period for this project will extend from July 5th through August 5th). During the review period, a public hearing will be held with the opportunity to provide written and verbal comments. Details are as follows:

Downtown Estes Loop EA Public Hearing

July 20, 2016

Estes Events Center, 1125 Rooftop Way, Estes Park, CO 80517

4:30-8:30 P.M., Presentation at 5:00 P.M.

The public is encouraged to review and comment on the EA and/or attend the public hearing. Comments on the EA will be accepted during the 30-day public review period via email, mail, at the public hearing, and through the project website: [redacted].

After consideration of public comments, CFLHD, together with the Town of Estes Park and CDOT, will make a final decision about the project. If CFLHD determines that the project would not result in significant impacts to the environment a Finding of No Significant Impact (FONSI) would be issued. It is anticipated that CFLHD would issue a NEPA Decision only on Phase 1, unless funding becomes available for future phases. Final design, right-of-way acquisition, permitting and construction can begin following the issuance of the NEPA decision.

1 PURPOSE AND NEED

1.1 Introduction

The U.S. Department of Transportation (DOT), Federal Highway Administration's (FHWA) Central Federal Lands Highway Division (CFLHD) is the federal lead agency for this Environmental Assessment (EA). One of CFLHD's functions is to administer the Federal Lands Access Program (FLAP) established under the transportation bill Moving Ahead for Progress in the 21st Century, and continued under the Fixing America's Surface Transportation (FAST) Act (FAST Act § 1120; 23 U.S.C. 201, 204). FLAP provides funds for projects on federal lands access transportation facilities. Project funds for roads that provide access to Federally owned properties that are owned and/or maintained by non Federal Government agencies with an emphasis for projects facilities accessing high use recreation areas and economic generators. Matching funds are required in order for projects to be eligible for FLAP program funds. The Town of Estes Park applied for this project and committed the required matching funds in 2013. The Colorado FLAP Program Decision Committee (PDC) approved funding to include this project in the Colorado FLAP program. The Proposed Action is administered by CFLHD in cooperation with the Town of Estes Park and the Colorado Department of Transportation.

While the original EA process began with a study area that included improvement to Elkhorn Avenue, Moraine Avenue, and Riverside Drives, the study was expanded to include future phases that could occur in the general area. More information is provided in *Chapter 2: Alternatives Considered*. The Proposed Action analyzed in this EA consists of the following:

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- Future channel/floodplain improvements – There is not a currently planned or programmed project that includes these activities; they are not yet funded but are likely to be built in subsequent phases.

The project design is required to meet a wide range of federal, state and local design standards and requirements. The EA has been prepared in compliance with applicable federal, state and local regulations involving the National Environmental Protection Act (NEPA), environmental laws, permit requirements and procedural guidance. The discussions in *Chapter 3: Affected Environment, Environmental Consequences and Mitigation Measures*, provide additional details. The project decision-making process involves analysis of a variety of engineering considerations and the findings of this EA.

As noted above, the FLAP award met a wide range of design standards and requirements. It also evaluated a robust range of transportation alternatives, which is not ordinarily completed for an EA.

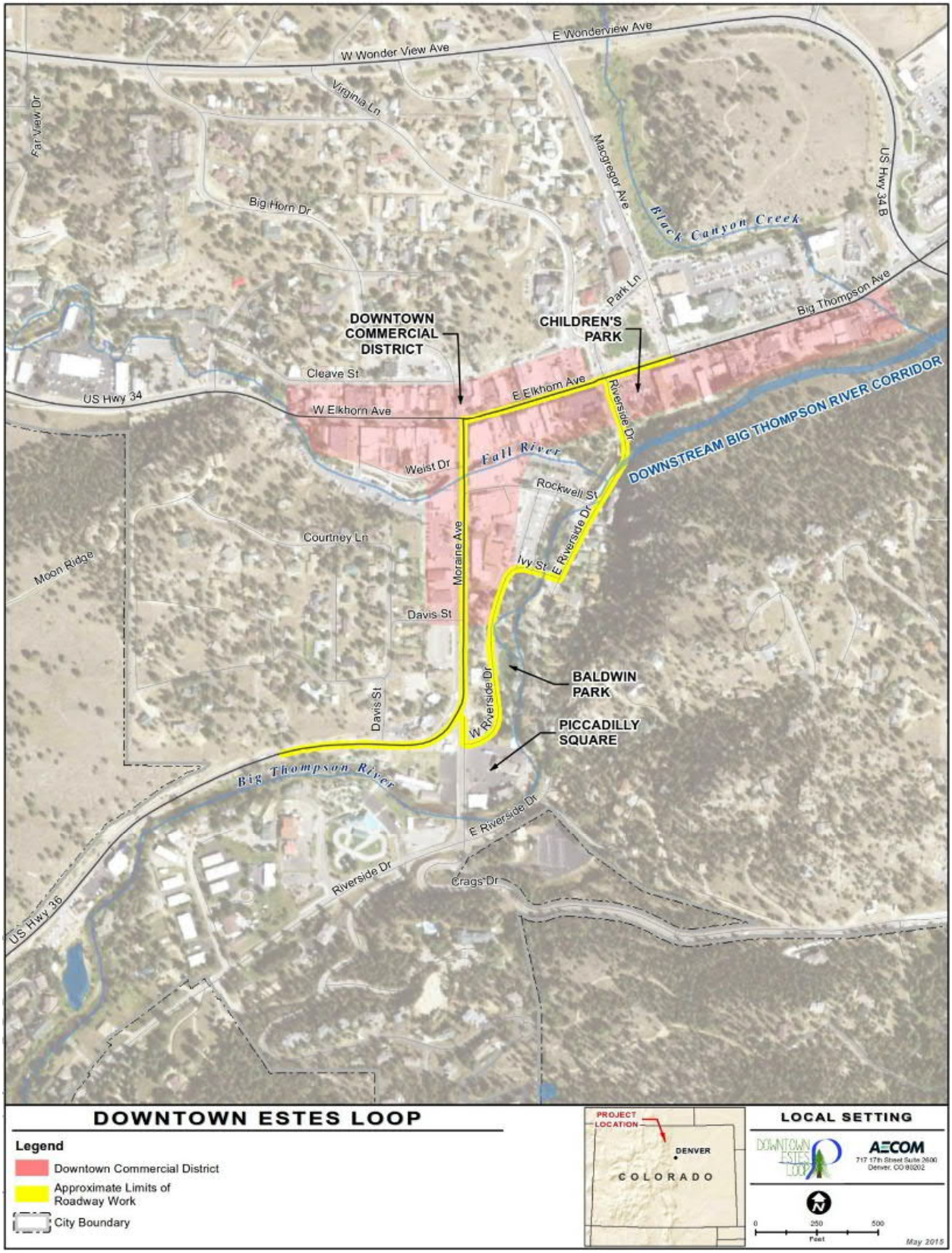
1.2 Local and Regional Setting

The project site (See Figure 1-1) is located about 65 miles northwest of Denver, Colorado in the Town of Estes Park in Larimer County near Rocky Mountain National Park (RMNP). Estes Park is a gateway community to RMNP through which all visitors approaching the east side of the park travel. The local setting of the project site is Downtown Estes Park (See Figure 1-2).

The project study area includes a vibrant retail commercial district along Elkhorn Avenue (Elkhorn) and Moraine Avenue (Moraine) and additional commercial, lodging and recreational uses along East and West Riverside Drives. Traffic along Elkhorn within the downtown generally flows west. Traffic along Moraine and East and West Riverside generally flows north and south. However, the primary movements from outside of the Estes Valley through the Downtown to RMNP are referred to as “inbound.” The traffic movements in the other direction are referred to as “outbound.” The Big Thompson River flows generally from west to east, but flows north along Riverside through the project site. The Downtown retail environment is supported by on-street and off-street surface parking lots and multiple parks provide recreational opportunities near the Big Thompson and Fall Rivers. Residential neighborhoods exist along East Riverside Drive. The Piccadilly Square commercial complex is located near the Riverside/Crags intersection.

Figure 1-1: Regional Setting of the Project Site

Figure 1-2: Local Setting of the Project Site



1.3 Project Background and History

1.3.1 Transportation, Access and Parking

United State Highway 36 (US 36), through downtown Estes Park, is the main access route to the Beaver Meadows Entrance on the east side of RMNP. This entrance receives the highest number of visitors and provides access to the Bear Lake Road shuttle station and the Bear Lake parking area. During peak visitation season at RMNP, the downtown Estes Park area experiences heavy congestion due to the volume of vehicles and pedestrians within the project limits. The congestion has been a documented source of RMNP visitor dissatisfaction and has complicated traffic management for the Town. The Town of Estes Park has been analyzing land use, traffic, parking, and economic development conditions in the Downtown area for many years. Several reports, going back to a 1984 Downtown Estes Park Access Report, identified multiple scenarios to improve traffic flow through downtown Estes Park. The 1984 access report was the first to document the severe seasonal congestion issues on US 36 through downtown and identify alternative routes, including one-way configurations, along the Riverside Drive routes. In the decades that followed, the National Park Service, CDOT Region 4 and the Town of Estes Park have completed additional studies to identify ways to improve traffic, access, and parking. The following provides a chronology of transportation planning studies since 2000:

- In 2000, RMNP prepared a Transportation Study that evaluated and recommended several transportation options to provide congestion relief through alternative modes of transportation.
- In 2003, CDOT Region 4, in association with the Town of Estes Park, Larimer County and RMNP, prepared the Estes Valley Transportation Alternatives Study. This study identified a package of multimodal enhancements to address transportation issues in the region, including potential improvements to the downtown street network. One of those improvements was a one-way couplet system utilizing Elkhorn, Moraine and Riverside roadways. The study also recommended many transit and parking improvements, which have been advanced and implemented over the last decade (transit service; parking improvements, and the planned visitor center parking structure).
- In 2005, the Town obtained six recommendations to address parking issues in Downtown Estes Park from Republic Parking Systems in their Town of Estes Park Parking Study.
- In 2008, the Town prepared the Estes Park Downtown Circulation Study which reviewed existing circulation and developed alternatives to address congestion.
- In 2011, RMNP prepared an Evaluation of an Intelligent Transportation System (ITS) for the park and the Town. This evaluation provided the results of a pilot ITS program.
- In 2012, the Town's Transportation Visioning Committee prepared the Town's "Roadmap to the Future." This was a citizen-led committee to develop a vision for Estes Park's transportation system 20 years in the future. The report identified nine roadway scenarios including a full reroute of US 36 to West Riverside with creation of one-way couplets on existing roadways and reconfiguration of the Moraine/Riverside/Crags intersection to facilitate more use of West Riverside Drive. The report also suggested

transit and parking improvements, specifically a new parking facility near the Visitor Center.

- In the spring of 2013, the Town initiated a public outreach process to gather input on the community's priorities for improving transportation downtown. The public weighed in on several transportation-related project options, one of which was the conversion of traffic through the core downtown area from two-way to one-way. This one-way couplet option was the majority of the participating public's preferred roadway solution to improve traffic flow. The Town Board voted to proceed with a competitive federal funding application for the one-way couplet to be included in the FLAP program. The project was approved to enter into the project development phase by the FLAP PDC in July of 2013.
- In December of 2013, the Town completed the Estes Park Transit & Parking Study funded by a Federal Transit Administration (FTA) grant under the Alternative Transportation in the Parks and Public Lands Program (ATPPL).
- In the summer of 2015, the Town worked with CDOT to change the striping and lane configuration for the northbound leg of US 36 to US 34 (Wonderview). The previous configuration was 2-northbound left turn lanes and a single through lane. The revised configuration implemented in June 2015 is a single left turn lane, left/through option lane, and single through lane. This effectively provides two through lanes to Wonderview Avenue. Based on agency and public feedback, this configuration will remain. The Town is currently working with CDOT to provide additional informational signing on the routes to RMNP in advance of the US 36/US 34 intersection.
- In July 2015, CDOT and the Town completed a demonstration project comparing the Barnes Dance pedestrian walk phase to the existing concurrent traffic and pedestrian phases for each leg of the intersection at the Elkhorn and Moraine intersection. The demonstration project concluded that the Barnes Dance operation resulted in higher vehicular delays and longer vehicle queues than the existing traffic signal operations. While the demonstration project was focused on vehicular delays, the all walk signal phase allows pedestrians to cross intersections without the threat of vehicular traffic, providing a higher level of perceived pedestrian convenience. However, it can disallow pedestrian movements to occur during vehicle only phases, adding wait time to certain pedestrian movements that were allowed previously. The Barnes Dance was reintroduced on May 27, 2016 at the Elkhorn/Moraine and Elkhorn/Riverside intersections.

Previous transportation studies completed by the Town of Estes Park can be referenced at: www.estes.org/transportationstudies.

The North Front Range Metropolitan Planning Organization's (NFRMPO) transportation model includes the Estes Park area, but Estes Park is not within the formal boundaries of the NFRMPO. Estes Park is within the formal boundaries of the Upper Front Range Transportation Planning Region (UFRTPR – TPR #12). The funded Phase 1 of the Proposed Action is in the State of Colorado Transportation Improvement Plan (STIP) identified as SUF4001, Estes Park Loop. The adopted UFR 2040 Regional Transportation Plan includes the funded Phase 1 in their Priority Project Ranking List. The UFR supports a future modification to the Priority Project Ranking List to include future phases of the project.

Town projects to address identified transportation planning needs have included extensive roadway network and operational improvements, transit services, parking improvements and studies (on-street parking, surface parking lots, and structured parking), new private sector development approvals, and various Downtown enhancements. The Town's ability to provide improvements requires integrated and comprehensive decision-making and adequate funding.

Local funding for project improvements is available, but the needs often exceed the Town of Estes Park budget limitations. In these instances, the Town seeks assistance from state government, federal government, the private sector and other sources.

The Town's FLAP application was selected and funded by the Central Federal Lands Highway Division (CFLHD) of FHWA. A total of $13 million was awarded for a specifically defined project. The proposed project funded from the FLAP was the one-way, counter-clockwise, couplet through Downtown Estes Park involving portions of Elkhorn, Moraine, East Riverside, and West Riverside roads with Big Thompson crossings near Ivy Street and Riverside at the Fall River confluence area. A requirement of the FLAP Program is for the local partnering agency to contribute a matching portion toward the project. For Colorado projects, this is 17.21% of the total implementation cost.

To obtain these funds, The Town has also applied for and received $4.2 million funding under the Colorado Department of Transportation (CDOT) Responsible Acceleration of Maintenance and Partnerships (RAMP) Program for the "devolution" of US 34 Business Route (West Elkhorn) back to Town ownership and maintenance between the Elkhorn/Moraine intersection and Wonderview. The RAMP Program funding is designed to provide local flexibility. The RAMP funds received from CDOT will be used for the required local agency matching funds for the FLAP program.

The Town has also applied for and obtained funding from the FTA, separate from the FLAP project, for parking improvements on the east edge of downtown at the Town's Visitor Center near the intersection of US 36 and US 34. This new Estes Park Transit Facility Parking Structure would ultimately include 296 new parking spaces on the site.

The "Downtown Estes Loop" project builds on previous transportation planning studies and public outreach activities for improving transportation in Downtown Estes Park.

1.3.2 Flooding

Downtown Estes Park was established on and around the banks of the Fall River and Big Thompson River. The confluence of these two Rivers is in the middle of the project area. Approximately half of the buildings in the commercial downtown corridor are less than fifty feet from either Big Thompson River or Fall River; many are less than ten feet away from river channels. Over the last 100-years, both rivers have experienced several significant flood events, including: the June 1965 Flood; the 1976 Big Thompson Canyon Flood; the 1982 Lawn Lake Dam Flood; and the September 2013 floods throughout Colorado's north Front Range. Of these events, the 1965, 1982 and 2013 floods produced flows that breached the river banks onto adjacent properties and streets.

- The June 1965 flood was a rain on snow event over two days which caused out-of-bank flows and property damage.

- The 1976 Big Thompson Canyon Flood took place primarily east of the Town in the canyon with limited direct impacts on Estes Park.
- The 1982 Lawn Lake Dam flood was a result of an upstream dam failure on Lawn Lake to the Roaring River, and then into Fall River, which sent a rapid rushing wall of water down Fall River into downtown causing significant property damage and loss of life.
- The recent September 2013 event damaged bridges, severely undermined retaining walls, created bank undercutting and destroyed the riparian environments along both river corridors. The inability of bridges crossing Fall River and the Big Thompson River in the downtown area to convey floodwaters caused backwatering and overtopping, which resulted in widespread flooding throughout the downtown corridor and required road closures and emergency detours around downtown.

As a result of the September 2013 flood event, hydrology studies were completed in order to determine if the regulatory flows and regulated flood boundaries need to be updated. In the fall of 2014, the Town adopted interim floodplain guidance and regulations using flood flows developed as part of a hydrology study completed by the Colorado Water Conservation Board (CWCB). These were the best available flows for a 1% annual event (100 year). The CWCB Best Available flows are around 2.5 times the current regulatory flows. This guidance has influenced the development of the EA and resulted in an expanded study area and identification of additional flood improvement needs. The Town is currently undertaking a detailed hydrologic study to determine revised peak discharge flows for the 1% annual event (100-year) along Fall River, Big Thompson River, Black Canyon Creek and Dry Gulch. This work is expected to be complete in 2016, at which time the CWCB will use this hydrology data to begin detailed hydraulic modeling to establish the new 100-year floodplain, which will be the baseline for updates to Flood Insurance Rate Maps (FIRM). As data becomes available and regulatory flows are updated, it would be incorporated into final design of any build improvements for this project.

1.4 Project Scoping

The NEPA Scoping process defines the scope of the major and important issues that should be considered in relation to a proposed action and alternatives. The Scoping process is open and occurs at the beginning of a project. The Scoping process involves the public and federal, state and local agencies. Public involvement and agency coordination continues throughout the entire process.

The project's formal Scoping process began with a public meeting on October 8, 2014. The formal public agency scoping letter was dated December 16, 2014. Additional public meetings were held later in 2014 and early 2015 where the public and public agencies were able to provide input.

Appendix D: Public Outreach Materials presents the primary Scoping process documents and summaries of public and agency input.

The key issues to be addressed in the EA were determined as an outcome of the public scoping process, initial field investigations and analysis of the requirements of the Proposed Action and alternatives. The key issues discussed in Chapter 3 include:

- Transportation
- Land Use Planning and Public Policy
- Air Quality
- Noise
- Biological Resources
- Water Resources
- Wetlands and Waters of the U.S.
- Cultural Resources
- Soils and Geology
- Hazardous Materials
- Public Services and Utilities
- Visual Quality, Aesthetics and Community Design
- Parks, Recreation and Open Space
- Social Conditions
- Economics
- Energy

This list of issues does not include impacts on farmland or paleontological resources because no farmland is present in the study area and because paleontological resources are not anticipated in the Big Thompson River corridor where earthwork is anticipated. Cycles of river scour and deposition over time are likely to have eliminated paleontological resources in this area. If paleontological resources are encountered, standard practices for their protection would be applied.

1.5 Project Context

Rocky Mountain National Park, located generally west of the Town of Estes Park in Colorado, provides 415 square miles of public recreation opportunities. In 2014, National Geographic named RMNP as one of its best trips in the world. In 2015, RMNP was the 3rd most visited national park in the U.S. based on annual visitation. Visitation by month between 2011 and 2015 is presented in Table 1-1.

Existing Traffic Congestion on East Elkhorn in Downtown Estes Park

Downtown Estes Park – Elkhorn Avenue

Big Thompson River and East Riverside Drive Corridor

Table 1-1: Monthly Visitation to Rocky Mountain National Park in 2011 – 2015 (Visitors)

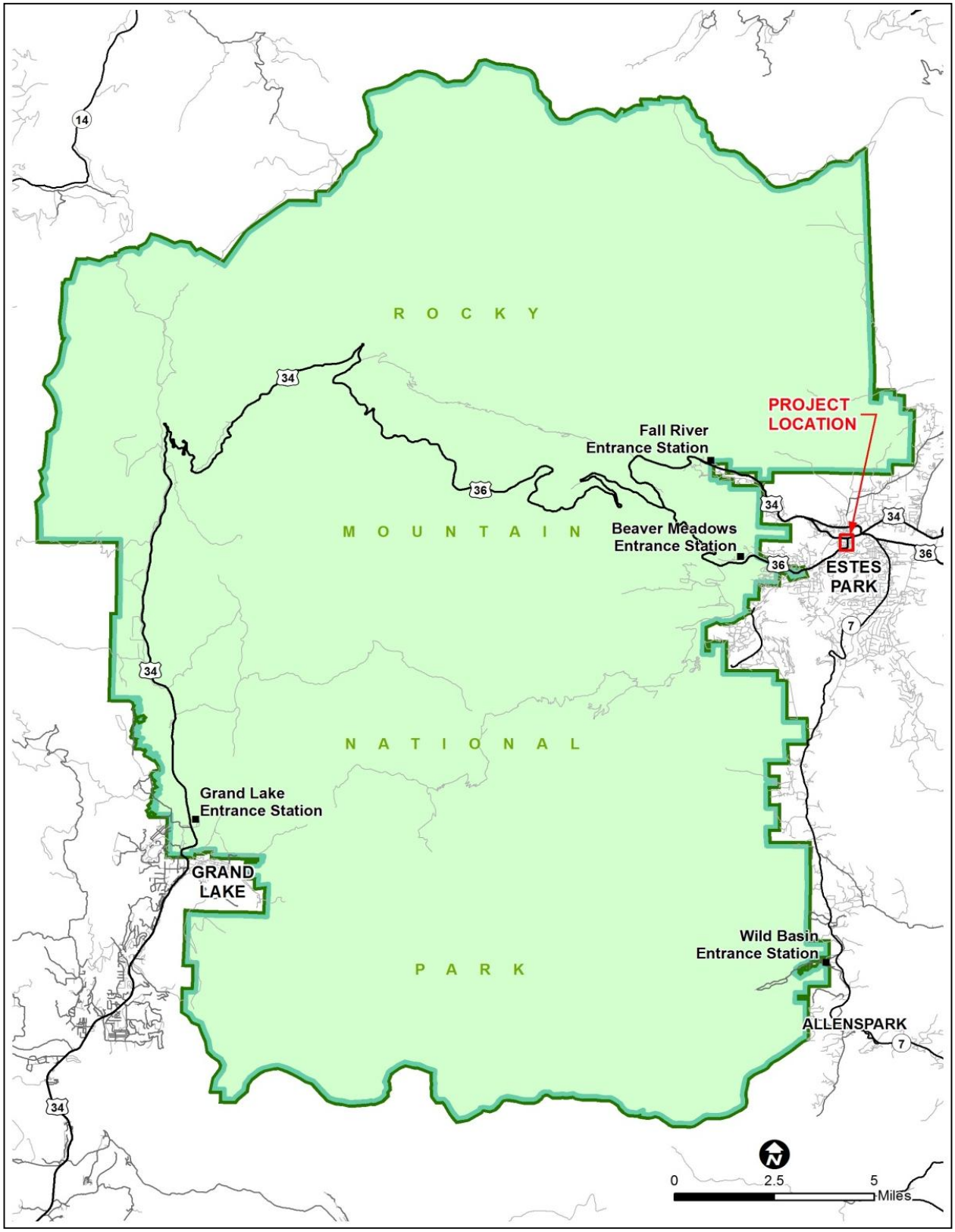
Month	2011	2012	2013*	2014*	2015
January	68,641	68,537	78,022	77,633	98,928
February	50,540	62,036	68,831	76,881	85,123
March	73,760	104,374	89,691	99,077	134,304
April	77,183	117,053	90,379	97,100	116,959
May	163,587	228,950	239,184	220,532	259,711
June	500,733	500,206	605,508	538,725	608,796
July	743,741	651,722	712,583	693,685	858,426
August	620,534	589,131	621,852	616,826	756,579
September	483,780	527,172	253,467*	537,694	644,350
October	264,617	219,946	66,275*	305,651	371,558
November	68,076	93,714	86,379*	90,915	118,398
December	61,749	66,776	81,970*	80,032	93,784
Total	**3,176,941**	**3,229,617**	**2,991,141***	**3,434,751**	**4,155,916**

* Visitation data for 2013 are unusual due to the mid-September 2013 flood event and may have influenced September 2013 through early 2014 visitation totals.
Source: RMNP, 2014.

Between 2000 and 2015, National Park Service annual visitation statistics for RMNP reflect an average of about 3 million visitors with variation between 2,743,676 visitors (low in 2006) and 4,155,916 (high in 2015). Visitation fluctuates heavily due to weather conditions in a given month or year. Visitation records indicate that the number of visitors is increasing during the peak and off-peak seasons. Year 2015 visitation numbers set records for RMNP in part due to lower gasoline prices and celebration of the RMNP's 100-year anniversary. 2016 marks the 100-year anniversary of the National Park Service.

Visitors enter the core area of RMNP through three primary roadway entrances: US 36 Beaver Meadows and US 34 Fall River on the east side and US 34 Grand Lake on the west side (See Figure 1-3).

Figure 1-3: Regional Roadway Network and Motor Vehicle Entrances Serving RMNP



Based on data collected from the National Park Service, the Beaver Meadows Visitor Center entrance has the highest traffic volume. Annual vehicle volumes entering the park at the three main entrances in 2012 are shown in Table 1-2.

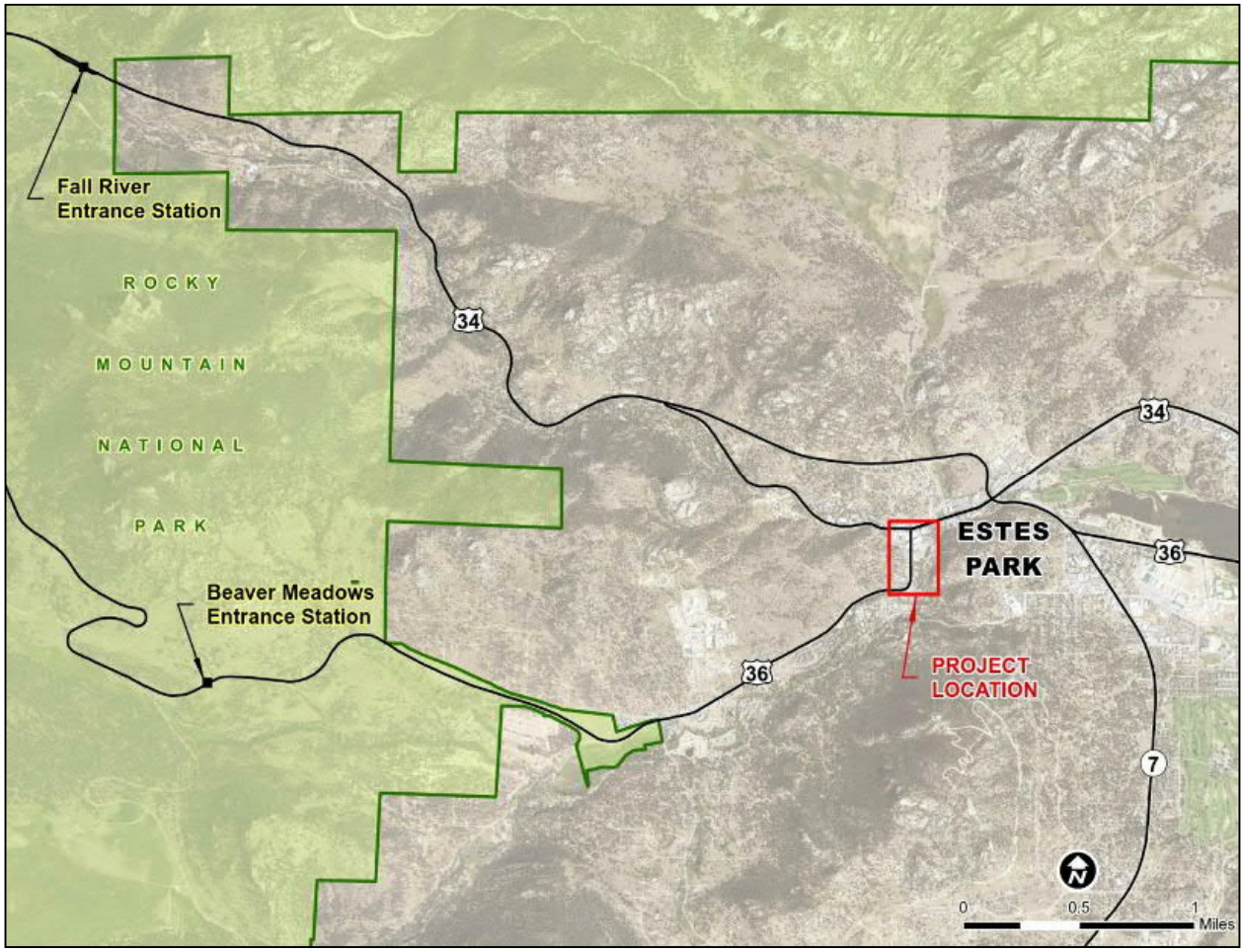
Table 1-2: Monthly Visitation to Rocky Mountain National Park by Entrance (2012 Traffic Counts)

Month	Beaver Meadows (US 36)	Fall River (US 34)	Grand Lake (US 34)
	Eastside Entrances		Westside Entrance
January	13,649	6,543	1,811
February	11,132	4,721	2,029
March	19,166	10,734	1,899
April	22,538	12,355	2,745
May	38,903	23,528	10,726
June	68,506	42,166	30,770
July	85,444	50,581	42,610
August	76,898	41,512	38,930
September	82,840	52,734	36,576
October	33,386	25,078	8,502
November	15,333	8,963	1,800
December	10,953	6,007	1,563
Total	**478,748**	**284,922**	**179,961**

Note: 2012 Traffic counts provide the most recent and reliable data for entrance activity. The 2013 and 2014 data were influenced by post-flood conditions, and 2015 was influenced by the RMNP 100-year anniversary.
Source: RMNP, 2012

The primary routes to the Beaver Meadows and Fall River entrances pass through the Town of Estes Park. The primary route to the Beaver Meadows (US 36) entrance passes directly through the Town's downtown (central business district) via Elkhorn and Moraine. The primary route to the Fall River entrance via Wonderview (US 34) does not pass through Downtown Estes Park. Traffic from US 34 destined for the Beaver Meadows entrance passes through the US 34/US 36 intersection just east of Downtown Estes Park. Figure 1-4 presents the primary roadway network serving the east side entrances to RMNP.

Figure 1-4: Primary Roadway Network Serving East Side Entrances to RMNP



The *Economic and Fiscal Impact of Tourism on the Estes Park, Colorado Economy* Report prepared for Visit Estes Park in 2012 showed that almost three-quarters of all tourists who visit Estes Park also visited RMNP. Estes Park provides many accommodations for visitors to the park including hotels, restaurants, shopping, emergency services and public transportation.

Downtown Estes Park has developed and benefited from tourists who visit the downtown area or who stop to use the amenities as they pass through town in motor vehicles, on bicycles, and on foot. However, high traffic and pedestrian volumes conflict, resulting in heavy congestion within the study area. This congestion decreases mobility through town and to and from RMNP. Based on the Estes Park 2010 Visitor Study results, the negative impacts associated with the congestion have resulted in a decrease in visitor experience that is of growing concern to visitors to RMNP and the Town of Estes Park.

1.6 Purpose and Need

1.6.1 Project Overview

The project is needed to improve system management and reduce severe congestion of the existing roadway network for both motorized and non-motorized users accessing RMNP. During the peak summer visitor season, traffic demand at the two main project intersections (Elkhorn/Moraine and Elkhorn/Riverside) used to access the RMNP Beaver Meadows entrance exceeds capacity, which contributes to extensive delay, safety concerns and community impacts.

The primary project needs depend highly on a broad range of issues and are discussed as follows (additional information may be found in the *Traffic Conditions Report*, Volume 3:

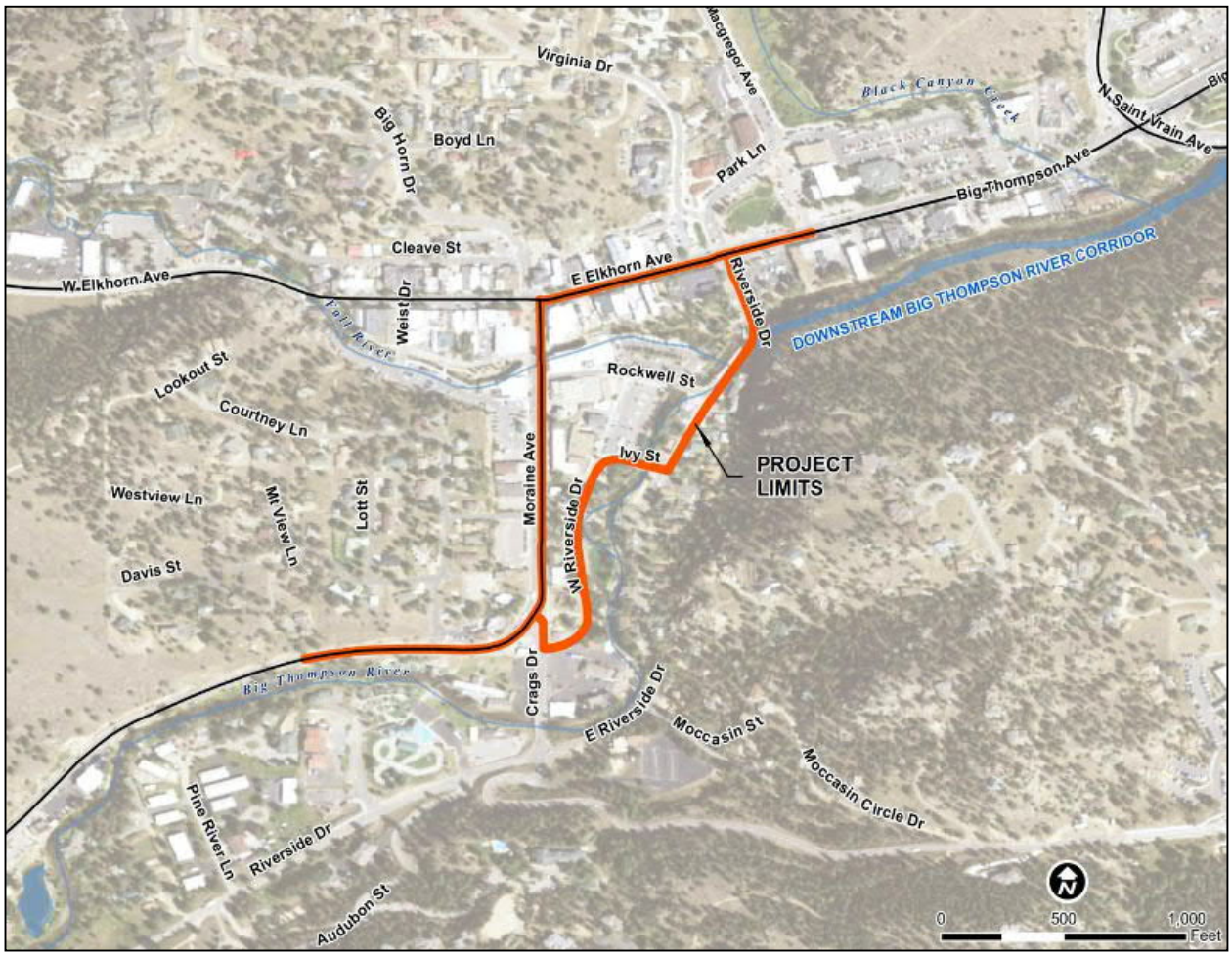
- For many years, travel into and out of Downtown Estes Park combined with traffic to and from RMNP has created severe weekend congestion in Downtown Estes Park for several months of the year. This congestion limits access to and from the park's highest use entrance (Beaver Meadows).
- Visitor experience along this corridor is diminished by the extreme congestion which causes increased vehicle/pedestrian conflicts and poor air quality in the business district and heavy delays to visitors of RMNP.
- In the future (2015 – 2040), anticipated traffic increases are expected to increase the severity of delays and cause delays to occur on more days per year and for longer periods of time.
- In 2014, capacity was exceeded approximately 40 days per year for periods of 2 hours or more creating 262 hours of congestion on those 40 days.
- Traffic forecasts for 2040 indicate that capacity will be exceeded for two hours or more on approximately 147 days per year creating 1,189 hours of congestion on those 147 days.
- On high traffic days, the number of hours of severe congestion in a given day will increase as the peak demand is spread out during the day.
- In 2040, some of the days when congestion is predicted are not associated with peak visitor season. Congestion on these days is caused by growth forecasts in employment and housing. As a result, congestion in 2040 will also occur on weekdays and during off season weekends.
- Existing and future congestion at the Elkhorn/Riverside, Elkhorn/Moraine and Moraine/Crags intersections causes motor vehicle, bicycle and pedestrian safety issues, restricts access, limits bus transit service efficiency, extends emergency response times for police, fire and ambulance services, and limits future economic growth in Estes Park and the surrounding area by discouraging travel when congestion is anticipated.

1.6.2 Project Purpose

The purpose of the FLAP project is to improve access to federally-owned properties that function as major economic generators and provide vast public recreational opportunities. The program intent is to provide improved access while maintaining environmental and economic viability of the adjacent communities. The purpose of this project is to improve access to and

from RMNP by reducing travel time, congestion, and pedestrian/vehicle conflicts through Downtown Estes Park as well as the associated negative impacts to visitor experience. The improvements will be developed in a context sensitive manner that will minimize environmental impacts, parking impacts, and support the Town's economic development objectives through improved guide signs and consideration of possible future projects. The project limits are shown in Figure 1-5.

Figure 1-5: Project Limits



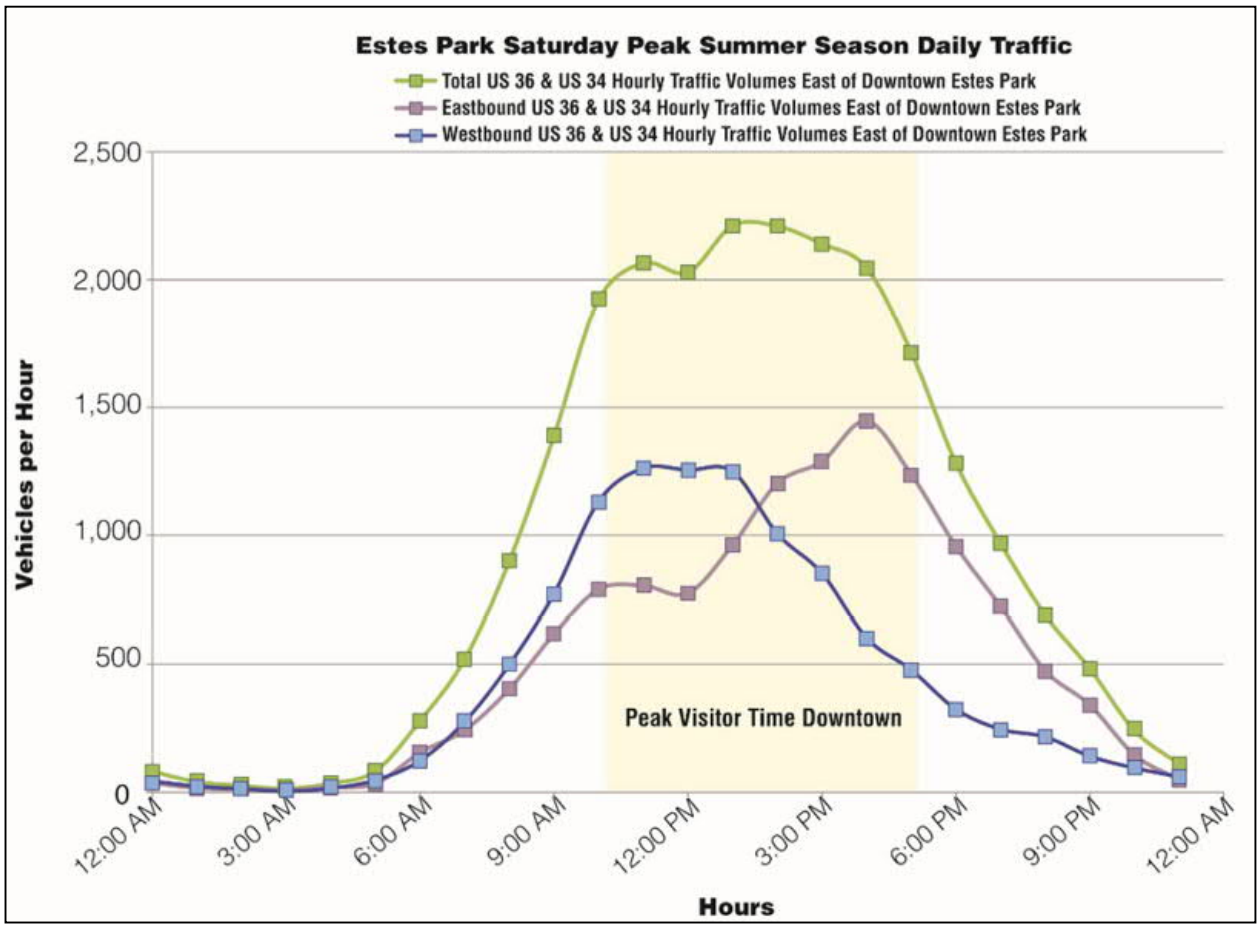
1.6.3 Project Needs

Motor Vehicle Travel Time and Congestion

East of Downtown Estes Park (east of the intersection US 34/US 36), existing average daily traffic (ADT) along US 34 is approximately 17,000 vehicles per day (vpd) and US 36 has approximately 15,000 vpd. Future ADTs are expected to be 26,200 vpd along US 34 and 27,000 vpd along US 36 by 2040. Existing traffic information on this project is stated in either year 2012 or 2014 throughout this EA. Both are considered the existing condition. Traffic data from 2012 was used as it provides the most recent year with a complete set of yearly data not affected by fires, floods, or RMNP 100-year event traffic. When presented as 2014 existing conditions, 2012 traffic data has been factored up by two years. Existing ADT levels on Moraine and Elkhorn in

the downtown range from 10,000 to 16,000 vpd. In 2040, ADT in this location is expected to increase to approximately 13,600 to 22,600. Total daily truck volumes in downtown Estes Park are approximately 3% of the total daily traffic and during peak hours about 1% of the hourly traffic volumes. Seasonal ADT increases traffic approximately 25% to 55% with a concentration of inbound/ outbound vehicles from 10:00 AM to 5:00 PM. The peak period is from about 1:00 to 2:00 PM as shown in Figure 1-6.

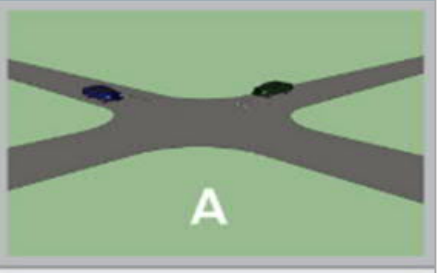
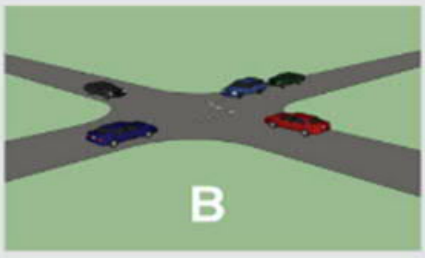
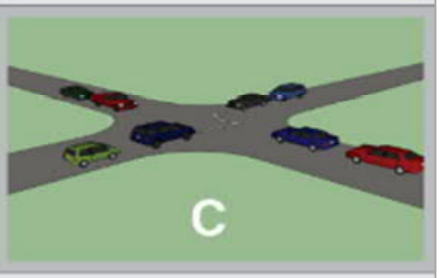
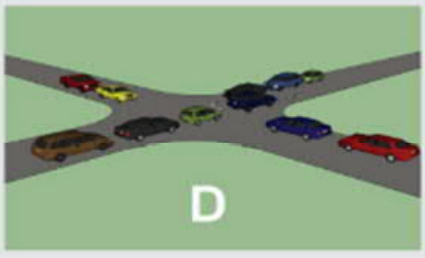
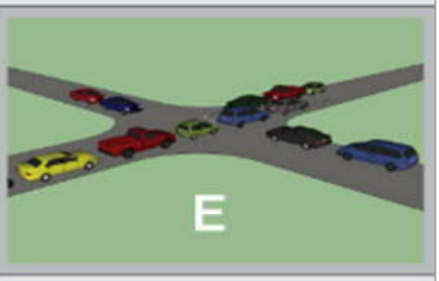
Figure 1-6: Traffic Distributions on a Saturday in the Peak Summer Season in Downtown Estes Park (Over 24 Hours) (2012)



Source: FHU

Congestion is characterized as “Level of Service.” Level of Service for signalized intersections is explained in Figure 1-7.

Figure 1-7: Level of Service (LOS) Thresholds at Signalized Intersections

LOS	Signalized Intersections	
A	No vehicle waits longer than one signal indication. AVERAGE VEHICLE DELAY OF 0-10 SECONDS.	
B	On a rare occasion, vehicles wait through more than one signal indication. AVERAGE VEHICLE DELAY OF 10-20 SECONDS.	
C	Intermittently, vehicles wait through more than one signal indication, occasionally backups may develop, traffic flow still stable and acceptable. AVERAGE VEHICLE DELAY OF 20-35 SECONDS.	
D	Delays at intersections may become extensive, but enough cycles with lower demand occur to permit periodic clearance, preventing excessive backups. AVERAGE VEHICLE DELAY OF 35-55 SECONDS.	
E	Very long queues may create lengthy delays. AVERAGE VEHICLE DELAY OF 55-80 SECONDS.	
F	Backups from locations downstream restrict or prevent movement of vehicles out of approaching creating a "gridlock" condition. AVERAGE VEHICLE DELAY OF MORE THAN 80 SECONDS.	

Source: Highway Capacity Manual 2010 (HCM)

Table 1-3 presents Level of Service and delay results for existing and future (forecast year) conditions. In summary, Table 1-3 shows that all of the intersections within the project area and the US 34/US 36 intersection are failing in 2014 and delay by 2040 will increase substantially given predicted traffic volumes at peak hour on the "design day."

When the highest peak demand levels occur infrequently and/or irregularly, traffic engineers do not analyze performance or design facilities for the highest peak demand levels because addressing these volumes could require excessive infrastructure for conditions that are not present most of the year. To address this issue, engineers apply a concept called the "Design Hourly Volume (DHV)". DHV is often defined as the number of vehicles that pass over a given section of a lane or a roadway during the 30th highest hourly volume of the design year. The design year for the project is 2040.

Table 1-3: Intersection Level of Service and Delay for Existing and Future Conditions (2014 and 2040)

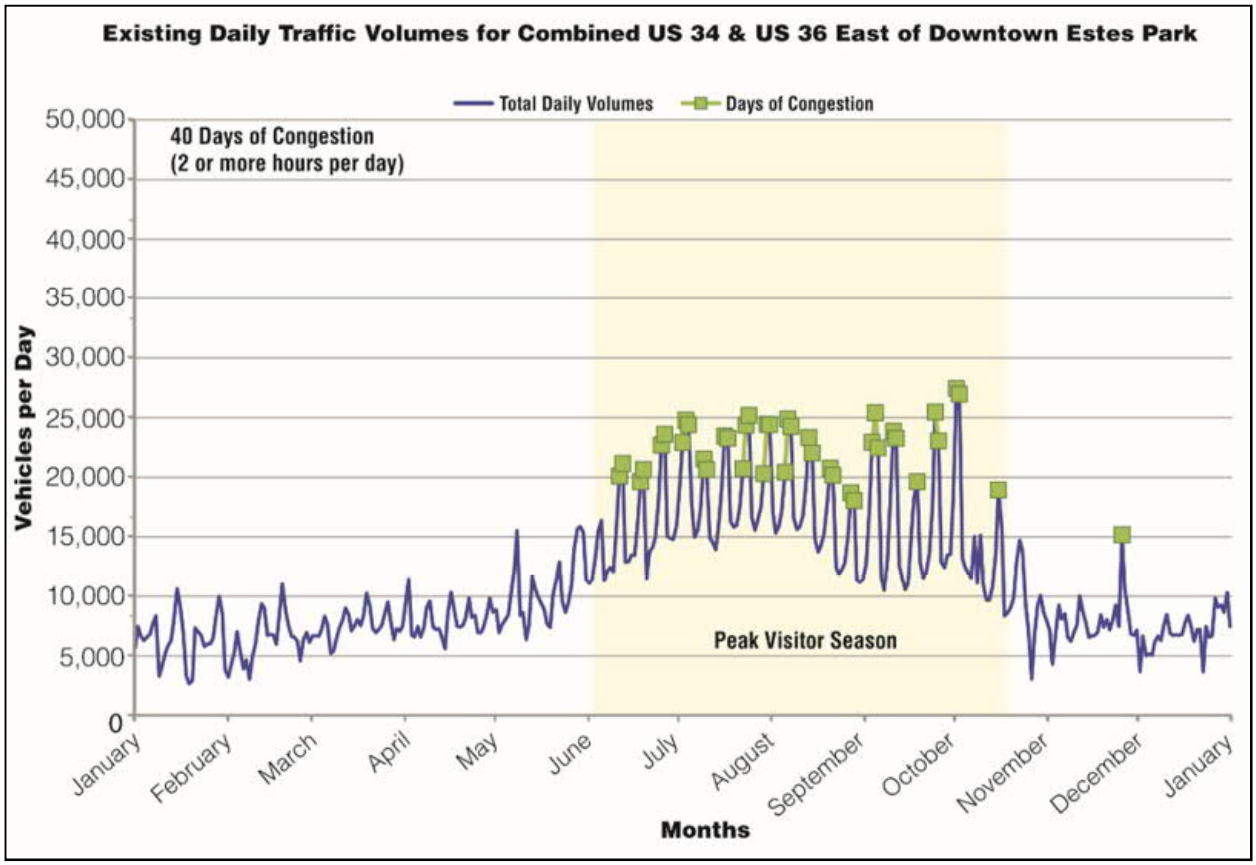
Intersection	2014 Existing	2040 No Action
Elkhorn / Riverside		
Overall Traffic Operations* **	LOS E (77.7)	LOS F (86.5)
Total Intersection Volumes (vehicles)	2,855	3,955
Hours of Delay***	62	325
Elkhorn / Moraine		
Overall Traffic Operations* **	LOS F (121.3)	LOS F (298.9)
Total Intersection Volumes	1,935	2,685
Hours of Delay***	65	223
Moraine / Crags (Riverside)		
Overall Traffic Operations* **		
Total Intersection Volumes	NA	NA
Hours of Delay***	1,875	2,635
Total Delay: Riverside + Moraine	**127 Hours**	**312 Hours**

* Peak Hour (2-3 PM) on Design Day: (30th Highest Day)
** Approach Delay in Seconds per Vehicle
*** Hours of Delay = Overall Seconds per Vehicle x Volume / 3600
NA = Not a signalized intersection, so LOS calculation is not available.
Source: FHU

The selected design day peak hour volume represents the approximately 85th percentile of the maximum estimated demand and is the 30th highest hourly volume of the year. This means that level of service and delay will be worse at peak periods on days where traffic demand is higher (approximately 40 days per year – primarily Saturdays and Sundays).

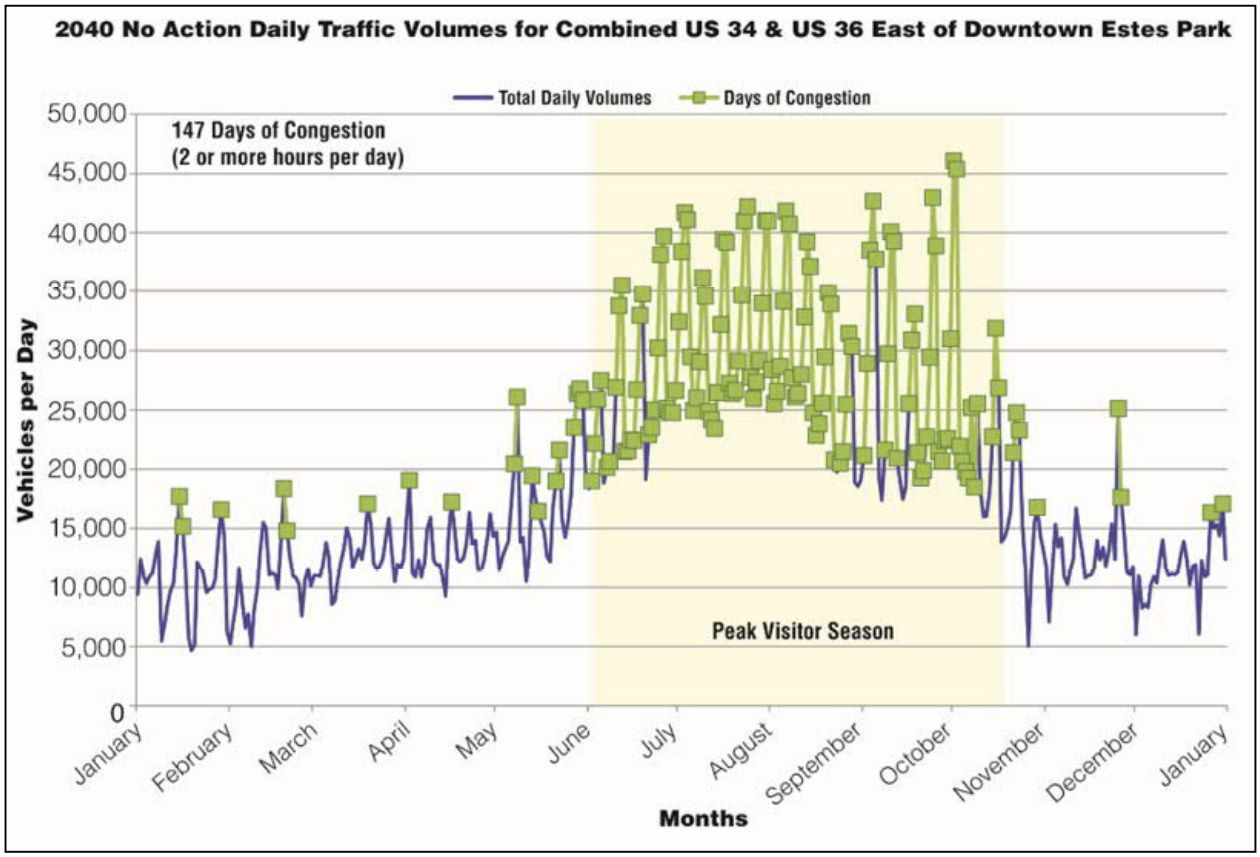
Existing (2012) and future (2040) combined daily traffic volumes for US 34 and US 36 east of Estes Park are illustrated in Figure 1-8 and Figure 1-9. These figures clarify high seasonal and weekend peak period traffic conditions and the anticipated increase in the number of days of congestion per year. These traffic conditions generally coincide with peak traffic conditions within Downtown Estes Park.

Figure 1-8: Existing (2012) Daily Vehicle Volumes for Combined US 34 and US 36 East of Downtown Estes Park (Estimated Days of Congestion in Downtown Estes Park)



Source: FHU

Figure 1-9: Future (2040) Daily Traffic Volumes for Combined US 34 and US 36 East of Downtown Estes Park (Estimated Days of Congestion in Downtown Estes Park)



Source: FHU
Note: In 2040, the performance of the US 34/US 36 intersection will also be a capacity constraint.

As stated in the introduction to the Town's Transportation Visioning Committee's (TVC) Roadmap to the Future (April 24, 2012), traffic congestion has been one of the concerns of the Town of Estes Park and millions of annual visitors for many years. These concerns are echoed in multiple visitor surveys over the past decade. This concern reflects community issues involving motor vehicle traffic and bicycle/pedestrian conflicts. In addition, public input in recent years has included expressions of community member and visitor frustration. This frustration and well-known traffic conditions support the public perception that emergency response times for police, fire, and ambulance services are also adversely impacted by congestion and travel delays. In addition, congestion creates localized impacts on air quality and degrades outdoor aesthetics. Accelerating, decelerating and idling trucks on Elkhorn within the Downtown negatively impact the pedestrian experience and local activity.

Pedestrian/Vehicle Conflicts at Elkhorn/Moraine Intersection

Improve Motor Vehicle Safety

The project team completed a safety assessment for the EA for a five-year period from January 1, 2009 to December 31, 2013 (included in the *Traffic Conditions Technical Report*, Volume 3). The safety assessment covers the seven main intersections within the study area. The safety assessment focused on understanding the magnitude and nature of any safety problems within the project limits and related crash causality and severity. The assessment evaluated roadway geometrics, roadside features, traffic control devices, traffic operations, driver behavior, and vehicle type. Table 1-4 presents a summary of crash totals, outcomes and types.

Table 1-4: Motor Vehicle Safety Assessment Crash Data: Totals Number, Typed and Causes (January 1, 2009-December 31, 2013)

INTERSECTION	CRASH TOTALS OUTCOME	CRASH TYPE
US 34/US 36	**25** 20 Property Damage 5 Injury 0 Fatal	Rear End: 32% Approach: 16% Broadside: 16% Fixed Object: 12% Parked Vehicle: 12% Other: 12% (3 total – Animal, Sideswipe, Overtaking Turn)
Elkhorn/Riverside	**20** 19 Property Damage 1 Injury 0 Fatal	Rear End: 35% Fixed Object: 25% Sideswipe: 25% Other: 15% (3 total – Pedestrian, Broadside, Pedestrian/Vehicle)
Elkhorn/Moraine	**33** 31 Property Damage 2 Injury 0 Fatal	Rear End: 30 % Fixed Object: 18% Sideswipe: 37% Parked Vehicle: 15%
Moraine/Rockwell	**1** 1 Property Damage 0 Injury 0 Fatal	Fixed Object: 100%
Moraine/Crags	**3** 3 Property Damage 0 Injury 0 Fatal	Fixed Object: 67% Rear End: 33%
East Riverside/Rockwell	**2** 2 Property Damage 0 Injury 0 Fatal	Rear End: 50% Unknown: 50% (reported as unknown type)
East Riverside/West Riverside	**0**	NA

Source: FHU

Relative to statewide crash rates on similar CDOT roadways, the crash rates at the seven intersections are relatively low. The proportion of rear end and sideswipe accidents at Elkhorn/Riverside and Elkhorn/Moraine reflect conditions associated with congested intersections.

Enhance Bicycle and Pedestrian Facilities, Mobility and Safety

The Elkhorn/Moraine and Elkhorn/Riverside intersections are congested due to simultaneous presence of high vehicle and pedestrian volumes. They also provide the two primary locations for pedestrian crossings in the Downtown. Pedestrians often spill into the green signal time, and cross at mid-block locations, which increases the pedestrian/vehicle conflicts and delays vehicle movements accessing RMNP. Many of the residents and visitors crossing in these areas are elderly or have small children making crossing under crowded conditions a challenge. During peak periods, high traffic volumes result in lower motor vehicle speeds and reduce the severity

of crashes. However, the congestion does increase the rate of vehicle to vehicle and vehicle to pedestrian/cyclist incidents and may also generate road rage and reduce bicycle use.

Off-street pedestrian pathways are available along Fall River (Riverwalk Corridor) and the Big Thompson River. However, bicycles are prohibited from the Riverwalk Corridor making Elkhorn/Riverside/Moraine the only option for cyclists. Continuous routes for pedestrians and cyclists are still needed to accommodate local demand and demand from visitors.

1.6.4 Project Goals

Project goals were derived from local, state and federal requirements, past community planning efforts, a wide range of public input obtained over years of planning and citizen engagement, and a wide range of environmental considerations. The project goals are as follows:

- **Congestion and Delay**: The improvements should adequately address future traffic volumes at key downtown intersections and reduce travel times for motorists, transit vehicles, and emergency vehicles passing through downtown.
- **Access**: The improvements should provide access to RMNP as well as, adequate business access for property owners, residents, tourists and business operators, and information signing to downtown destinations and parking.
- **Parking**: Minimize loss of permanent parking spaces and temporary loss of parking spaces during peak tourist seasons. Provide improved guide signs to available parking.
- **Alternative Modes**: The project should provide facilities, to the maximum extent practicable, that accommodate pedestrians, cyclists and transit service.
- **Safety**: The improvements should reduce motor vehicle, bicycle and pedestrian conflicts.
- **Visitor Experience**: The improvements should minimize construction disruption to visitors during peak visitation seasons, minimize impacts on heavily used pedestrian areas and amenities, and improve the visitor experience traveling to RMNP and within Downtown Estes Park by reducing congestion and idling vehicles adjacent to heavy pedestrian use areas.
- **Economics**: The improvements should minimize construction disruption, address the need for business visibility, accommodate more vehicle volumes, minimize impacts on parking and provide accessibility to existing parking lots.
- **Right-of-Way**: The improvements should minimize full and partial commercial and residential private property acquisitions.
- **Environmental**: The improvements should minimize adverse impacts on parks, cultural resources, and vegetation and improve floodplain and air quality conditions.
- **Cost**: The improvements should minimize construction and right-of-way costs.

1.6.5 Independent Utility and Logical Termini

The term “independent utility” refers to the requirement that a project should be fully functional on its own and meet defined project needs without being dependent upon other improvements to operate or generate the anticipated benefits. The term “logical termini” refers to the endpoints or spatial limits of a project in relation to independent utility. In other words, a project’s limits should fit based on functional requirements. The reason for considering these concepts is

rooted in meeting a project's purpose and need and making sure potential effects of a project are not missed by reviewing a smaller action when more realistically a larger action is truly necessary to address a defined project need.

The Proposed Action and the previously considered alternatives have independent utility and logical termini because they could be implemented to address the major components of the project's purpose and need. The US 34/US 36 intersection is beyond the limits of logical termini for this project because that intersection has specific and separate future capacity needs beyond the boundaries of Downtown Estes Park and the primary operational constraint in the Downtown, which is the Elkhorn/Moraine intersection. The performance of the US 34/US 36 intersection would serve to some degree as a meter for traffic into and out of Downtown Estes Park if the Elkhorn/Moraine intersection operational constraints are resolved. In this role, the US 34/US 36 intersection is connected to the Downtown, but the Proposed Action stands on its own as a fully operational capacity improvement without making improvements at the US 34/US36 intersection. It should be noted that the Town is also pursuing funding for improvements on US 36 between Crags and Mary's Lake Road.

Similarly, the need for parking in the Downtown, while well-known and formally documented by previous studies, could provide some additional congestion relief by reducing the amount of circulating traffic, but does not adequately address the purpose and need for this project. Also, it is not directly connected to operations at the Elkhorn/Moraine intersection and is rooted in the Town's economic development needs rather than congestion relief to and from RMNP, as defined by the funding agreement between FHWA and the Town in the FLAP project approval.

Reconstruction of the Rockwell and Riverside Bridges is proposed as part of this project and will likely occur at some point in the future, however these activities are not currently planned and programmed "projects". These improvements would help with other floodplain issues that are upstream from this project, protecting the investment made with this project and improving the resiliency of the transportation infrastructure.

Channel/floodplain improvements are also proposed downstream. These are not funded but are likely to be built in subsequent phases, by others. This project would also serve to aid in protecting the investment in this project, improving resiliency to infrastructure, as well as add flood control measures for the town in general.

2 PROJECT ALTERNATIVES

This chapter describes the alternatives development and screening process, and the features and characteristics of the alternatives that were developed and then advanced for further analysis. A comprehensive description of the alternatives analysis and associated screening process is included in *Appendix A: Alternative Screening Process Technical Report*.

While the original EA process began with a study area that included improvement to Elkhorn Avenue, Moraine Avenue and Riverside Drives, the study was expanded to include future phases that could occur in the general area. The Proposed Action analyzed in this EA consists of the following:

- Funded Phase 1 – CFLHD project CO FLAP 34(1), 36(1) Moraine Avenue and Riverside Drive – reconstruction and realignment of Riverside Drive, reconstruction of the Ivy Street Bridge and associated transportation improvements along Elkhorn and Moraine could be built as part of the currently funded FLAP project (Phase 1). These improvements are funded.
- Future reconstruction of the Rockwell and Riverside Bridges – This will likely occur at some point in the future, however these activities are not currently planned and programmed "projects". There is no identified funding source; CDOT involvement is likely as they will own and maintain the newly constructed Riverside Drive (US 36 eastbound).
- Future channel/floodplain improvements – There is not a currently planned or programmed project that includes these activities; they are not yet funded but are likely to be built in subsequent phases.

As shown above, this project began as a transportation study to provide RMNP visitors improved access to the park. As the project progressed, floodplain elements were added to both provide additional flood control measures for upstream flooding and to protect the investment, improve resiliency of this project from future flooding events.

2.1 Alternatives Development and Evaluation

The alternatives development and screening process was initiated following the formation of the purpose and need (See *Chapter 1: Purpose and Need*) and initial scoping meetings held in October of 2014. The purpose of alternatives screening process is to develop a reasonable range of alternatives to be evaluated in the NEPA process. These alternatives typically arise through a combination of previous studies, agency and design team input and public input.

The Downtown Estes Loop project alternatives evolved through a two-tiered screening process. A multi-tiered screening process is common in studies of this type due to the complexity of the overall project and the ability to incorporate more detailed design analysis as the project proceeds.

The first step in each phase of screening was to develop screening criteria. These criteria were developed initially by the project team, and confirmed with the project Technical Advisory Committee (TAC) composed of CFLHD, the Town of Estes Park and CDOT. Each alternative was then compared against the approved criteria. Alternatives that met most or all of these

criteria were advanced from Level 1 to Level 2, and then one proposed build alternative was advanced to more detailed environmental and technical analysis in the EA.

2.1.1 Level 1 Preliminary Screening

Alternatives: As part of the initial public scoping meetings held in October 2014, a set of alternatives identified previous to this study were presented to the community for input. These alternatives were either part of the initial Federal Lands Access Program (FLAP) application or had been discussed in prior reports and studies as potential solutions for alleviating congestion and improving access to RMNP. These alternatives included:

- No Action Alternative
- Couplet concept along portions of Elkhorn, Moraine and Riverside Drives (which became "Alternative 1"),
- A variation of Alternative 1 referred to as "Alternative 1A" which would maintain the one-way couplet concept except for the stretch of East Elkhorn between Moraine and Riverside Drive and;
- "Alternative 2," which would maintain two-way travel on East Elkhorn and Moraine and Riverside Drive would become a four lane two-way travel roadway.

These four alternatives were taken into Level 1 screening. In addition, the public identified other roadway/transportation improvement design ideas that met the purpose and need (both at the October public meetings and subsequent small group meetings) which the project team translated into individual alternatives for purposes of screening. These, along with new alternatives introduced as part of the design process, included:

- Alternative 2A: Four-Lane Riverside Drive with Pedestrian Mall on Elkhorn
- Alternative 3: One-Way Couplet, Clockwise Direction
- Alternative 4: Three Lane Riverside Drive (2 Lanes WB/1 EB) – Elkhorn and Moraine 2-Way
- Alternative 5: Reversible One-Way on Riverside Drive, Elkhorn/Moraine Two-Way
- Alternative 6: One-Way Couplet Counter-Clockwise and Four Lane Riverside Drive
- Alternative 7: One-Way Couplet Counter Clockwise Using Rockwell
- Alternative 8: Two-Way, Two-Lane Riverside Drive, One-Way Elkhorn (West) and One-Way Moraine (South)
- Alternative 9: Traffic Diversion around Downtown through Signage and Intersection Modifications

The public identified parking as a major issue throughout the October 2014 public meetings and subsequent small group meetings. Standalone parking alternatives were not considered as they did not meet the purpose and need of improving access to RMNP. No standalone parking alternatives were included in the level 1 primary screening.

Criteria: Evaluation criteria were developed consistent with the primary components of the purpose and need. These criteria were qualitative, with the intent of comparing each alternative based on a general understanding of the function of each (without the availability of detailed design). Evaluation criteria included:

- *Traffic operations/capacity:* level of improvement to intersection operations and capacity, and capacity inbound and outbound from RMNP and within the Town.
- *Safety:* Potential for vehicular conflicts, potential for vehicular/pedestrian conflicts, ability to move pedestrians across intersections.
- *Impact to Community Resources:* impacts to existing parks (Baldwin and Children's) and the Riverwalk.
- *Extent to which additional funding would be required:* whether the alternative is within available/secured funding sources or would require additional funding sources.

A screening matrix was developed comparing the alternatives against each criterion, as shown in *Appendix A: Alternative Screening Process Technical Report*. The screening matrix used a good, fair, poor ranking based on qualitative analysis of the level 1 primary screening criteria.

Results: Many of the alternatives were eliminated because of poor operations, a primary need for the project, including Alternatives 2A, 3, 5, 7, 8 and 9. The following alternatives were recommended for advancement into more detailed Level 2 screening:

No Action:

Characteristics:

- Roadway conditions and configurations remain the same as existing
- No anticipated safety or capacity improvements, other than regular maintenance.

Alternative 1: One-Way Couplet

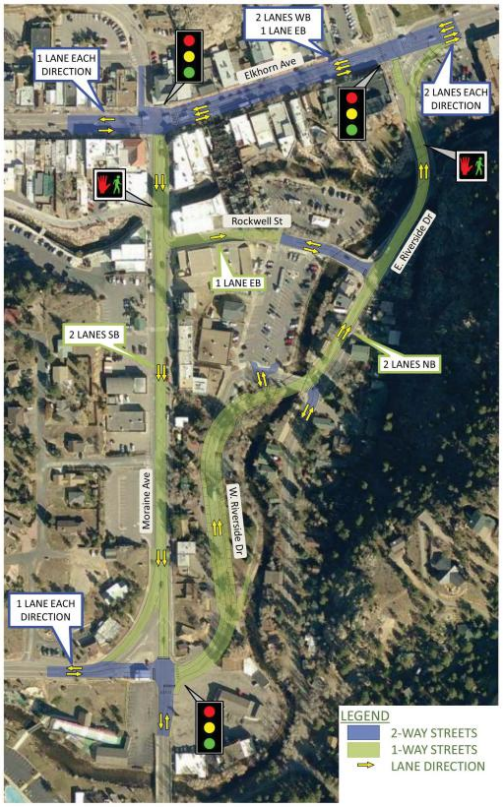
Characteristics:

- Two lane one-way westbound on Elkhorn Avenue and Moraine Avenue
- Two lane one-way eastbound on reconstructed/realigned East and West Riverside Drives
- Reconstructed/reconfigured Moraine/Crags/Riverside Intersection
- Maintains flow on Elkhorn/Moraine/Riverside
- Improves operations at intersections
- Minimizes environmental footprint along Riverside
- May lead to out of direction travel (due to one-way configuration)

Alternative 1A: One-Way Couplet (with two-way on Elkhorn)

Characteristics:

- Variation of Alternative 1
- Two lane one-way westbound on Elkhorn Avenue and Moraine Avenue
- Two lane one-way eastbound on reconstructed/realigned East and West Riverside Drives
- Reconstructed/reconfigured Moraine/Crags/Riverside Intersection
- Maintains two-way on Elkhorn between Riverside and Moraine
- Potentially improves operations at intersections
- Minimizes environmental footprint along Riverside
- May lead to out-of-direction travel (due to one-way configuration)



Alternative 2: 4-Lane Riverside, 2-Way Elkhorn & Moraine

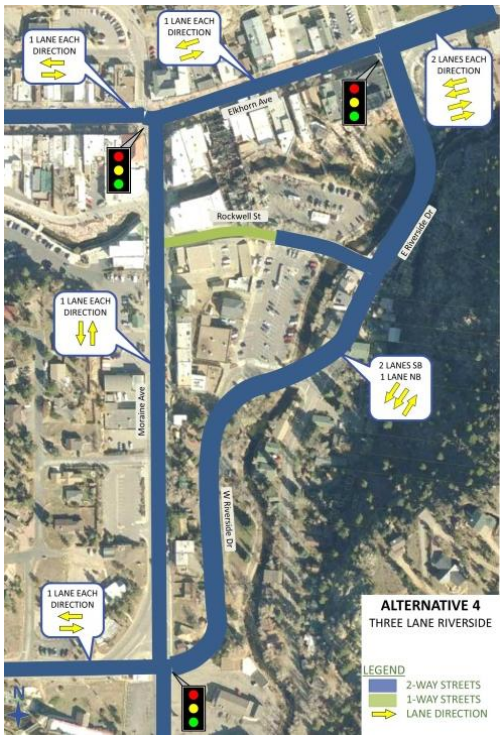
Characteristics:

- Four lane two-way reconstructed/realigned East and West Riverside Drives
- Maintains existing configurations and lanes and two-way travel on Elkhorn and Moraine
- Reconstructed/reconfigured Moraine/Crags/Riverside Intersection
- Maintains two-way travel on Elkhorn, Moraine, Riverside
- Improves operation at intersections and capacity of through traffic
- Could lead to traffic bypassing Elkhorn (by utilizing Riverside)
- Substantial environmental impacts along Riverside due to widening

Alternative 4: 3-Lane Riverside (2 WB/1 EB), 2-Way Elkhorn & Moraine

Characteristics:

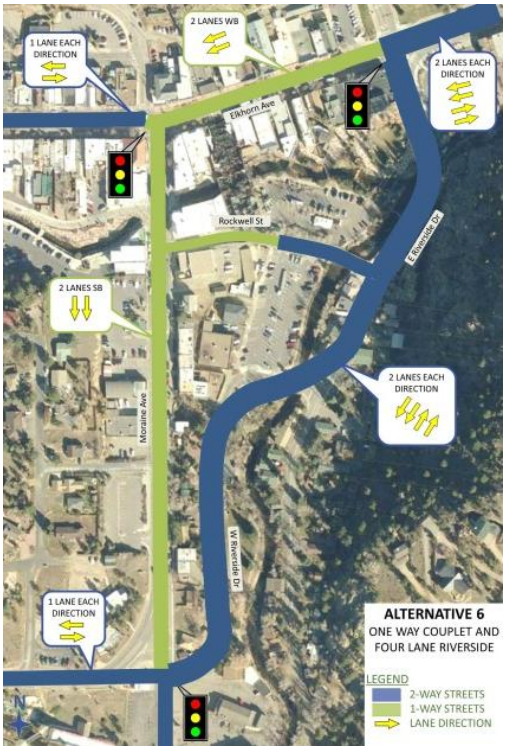
- Three lane two-way reconstructed/realigned East and West Riverside Drives (2 lanes WB, 1 lane EB)
- Maintains existing configurations and lanes and two-way travel on Elkhorn and Moraine
- Reconstructed/reconfigured Moraine/Crags/Riverside Intersection
- Maintains two-way travel on Elkhorn, Moraine, Riverside
- Improves operation at intersections and capacity of through traffic
- Could lead to traffic bypassing Elkhorn (by utilizing Riverside)
- Substantial environmental impacts along Riverside due to widening



Alternative 6: 4-Lane Riverside with a One-Way Couplet (Counter-clockwise)

Characteristics:

- Four lane two-way reconstructed/realigned East and West Riverside Drives
- Two lane one-way westbound on Elkhorn Avenue and Moraine Avenue
- Reconstructed/reconfigured Moraine/Crags/Riverside Intersection
- Reverse couplet direction may be counter-intuitive
- Improves operations at intersections and capacity for through traffic
- Could lead to traffic bypassing Elkhorn (by utilizing Riverside)
- Substantial environmental impacts along Riverside



2.1.2 Level 2 – Detailed Comparative Screening

Alternatives: The No Action, Alternative 1, 1A, 2, 4 and 6 were carried into Level 2 for more detailed screening against a broader set of criteria.

Criteria: The Level 2 screening process involved more detailed analysis of design and traffic conditions, potential impacts to natural resources and a number of other factors. Data was compiled and utilized in the screening based on the best available at the time. The Level 2 screening criteria included:

- *Congestion and Delay:* Measured by intersection Level of Service (LOS), anticipated days of downtown congestion, and total downtown intersection delay (measured in hours).
- *Access and Parking:* impacts to existing properties along the study area roadways (for example, full movement versus right-in/right-out), amount of public parking spaces lost and the potential for parking mitigation through design modifications.
- *Alternative Mode Accommodation:* provision for bicycle facilities (on-street bike lanes, sharrows, etc.) and provision for transit (effect upon transit stop locations).
- *Number of Conflict Points:* reference to safety of the alternative in terms of the number of pedestrian/vehicle conflict points and vehicle/vehicle conflict points.
- *Economics:* business visibility (by through traffic) and downtown visitor vehicular accessibility to existing parking (on-street and parking lots).
- *Right-of-Way Impact:* commercial property impact (full or partial acquisition), commercial property acreage of acquisition, residential dwelling impact (full or partial acquisition), and residential property acreage of acquisition.
- *Environmental:* anticipated impact to Baldwin Park, Children's Park, cultural resources, and pedestrian comfort along Elkhorn, Moraine and Riverside (pedestrian comfort recognizes the large number of pedestrians that move through downtown and the ability to accommodate them).
- *Within available funding*: focuses on construction cost, right-of-way cost and total cost.

Alternative 1A (one-way couplet with two-way Elkhorn Avenue) was advanced into level 2 screening. Environemntal and right-of-way impacts would be the same as Alternative 1. Detailed traffic operation analysis indicated that the alterntive did not provide traffic operational benefits to meet the purpose and need. For this reason alternative 1A is not presented in detail in this chapter.

For the purposes of the level 2 alternative screening intersections were analyzed with traffic signals. Independent of the level 2 screening each intersection was reviewed for the feasibility of roundabout configurations. Because of existing right-of-way and building constraints the Moraine/Riverside/Crags intersection was the only intersection determined to be feasible. Any build alternative advanced beyond the level 2 screening would be analyzed with both a traffic signal configuration and a roundabout option.

Level 2 screening was completed in spring of 2015 with the results presented to the Town Board and public through a series of meetings (additional detail included in *Appendix A: Alternative Screening Process Technical Report*). After these presentations and in response to

public input, the Town of Estes Park requested that CFLHD evaluate a downtown parking and transit structure as a stand-alone alternative (Alternative 10). Parking improvement options were originally screened out during Level 1 screening because they did not meet the purpose and need.

CFLHD, at the request of the Town, developed and analyzed a Parking and Transit structure alternative using the comparative screening criteria. The concept developed for analysis built off the concept discussed in the FLAP application. It was assumed the structure would be located on the existing Post Office parking lot between Moraine and Riverside Drives and would be multi-level. Access to the structure would be provided via Moraine and Riverside. Intersection improvements at Moraine/Crags/Riverside were included to improve access to West Riverside Drive for access to the structure.

Additionally, following the level 2 screening and advancement of the Proposed Action the project limits were expanded to include channel/floodplain improvements as discussed in more detail later in this chapter.

The following describes the alternatives fully evaluated in the level 2 comparative screening.

Alternative 1: One-Way Couplet

Characteristics:

- Two lane one-way westbound on Elkhorn Avenue and Moraine Avenue
- Two lane one-way eastbound on reconstructed/realigned East and West Riverside Drives
- Reconstructed/reconfigured Moraine/Crags/Riverside Intersection

Operational Performance:

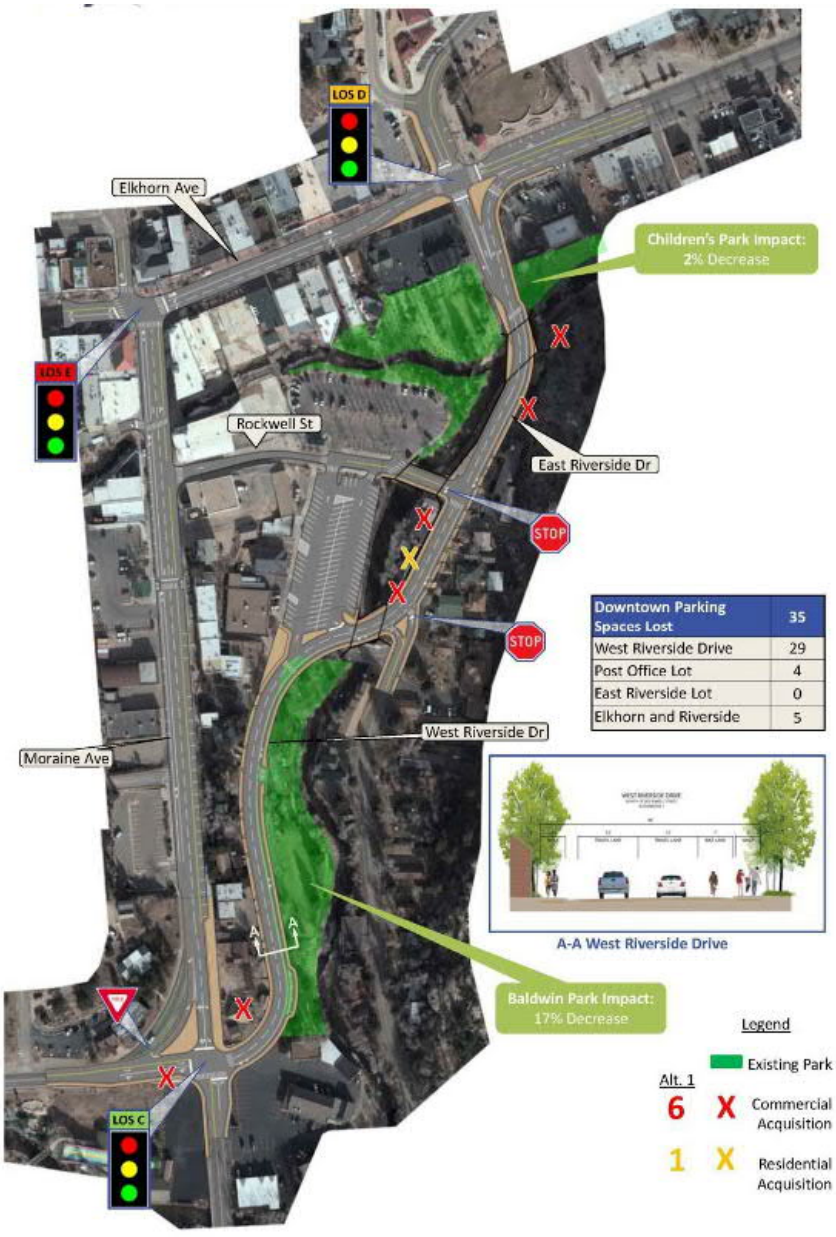
- Substantial improvement to Elkhorn/Riverside (LOS D) and Elkhorn/Moraine (LOS E)
- 25-30 total days of downtown congestion (versus 140-150 days for No Action)

R/W & Parking Impacts:

- Requires 7 full acquisition and relocations
- Reduction in 35 parking spaces

Environmental Impacts:

- 17% decrease in Baldwin Park area
- 2% decrease in Children's Park area



Alternative 2: 4-Lane Riverside, 2-Way Elkhorn & Moraine

Characteristics:

- Four lane two-way reconstructed/realigned East and West Riverside Drives
- Maintains existing configurations and lanes and two-way travel on Elkhorn and Moraine
- Reconstructed/reconfigured Moraine/Crags/Riverside Intersection

Operational Performance:

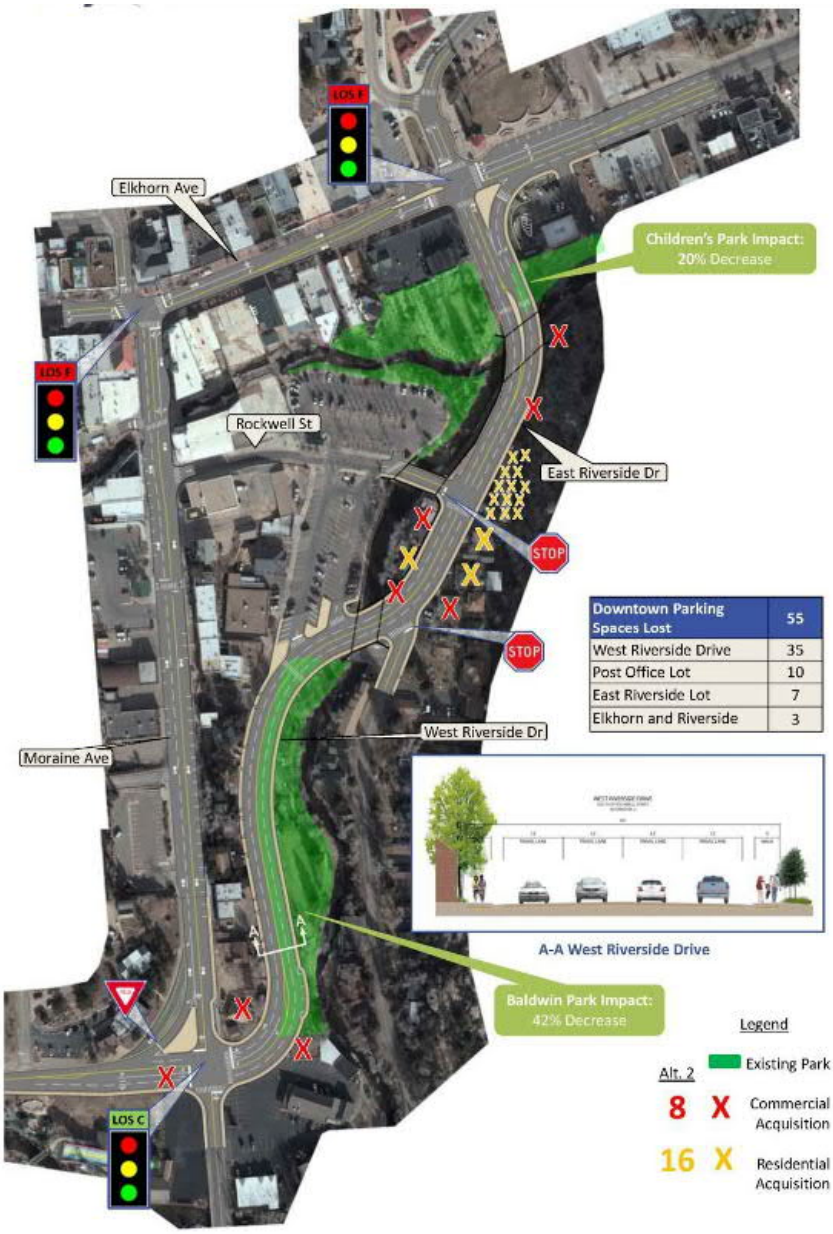
- Improvement to Elkhorn/Riverside (LOS F) and Elkhorn/Moraine (LOS F), but still substandard operations
- 40-50 total days of downtown congestion (versus 140-150 days for No Action)

R/W & Parking Impacts:

- Requires 24 full acquisition and relocations
- Reduction in 55 parking spaces

Environmental Impacts:

- 42% decrease in Baldwin Park area
- 20% decrease in Children's Park area



Alternative 4: 3-Lane Riverside (2 WB/1 EB), 2-Way Elkhorn & Moraine

Characteristics:

- Three lane two-way reconstructed/realigned East and West Riverside Drives (2 lanes WB, 1 lane EB)
- Maintains existing configurations and lanes and two-way travel on Elkhorn and Moraine
- Reconstructed/reconfigured Moraine/Crags/Riverside Intersection

Operational Performance:

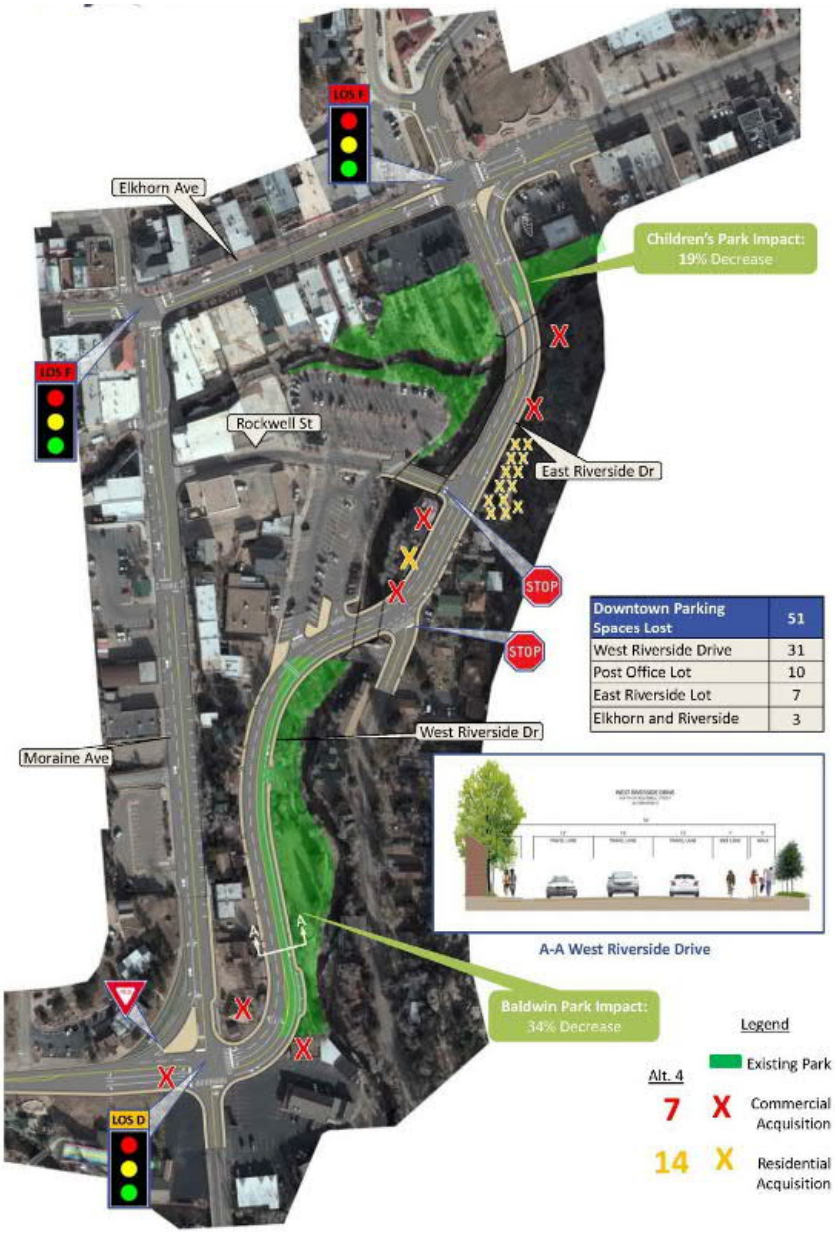
- Slight Improvement to Elkhorn/Riverside (LOS F) and Elkhorn/Moraine (LOS F)
- 75-80 total days of downtown congestion (versus 140-150 days for No Action)

R/W & Parking Impacts:

- Requires 21 full acquisition/relocations
- Reduction in 51 parking spaces

Environmental Impacts:

- 34% decrease in Baldwin Park area
- 19% decrease in Children's Park area



Alternative 6: 4-Lane Riverside with a One-Way Couplet (Counter-clockwise)

Characteristics:

- Four lane two-way reconstructed/realigned East and West Riverside Drives
- Two lane one-way westbound on Elkhorn Avenue and Moraine Avenue
- Reconstructed/reconfigured Moraine/Crags/Riverside Intersection

Operational Performance:

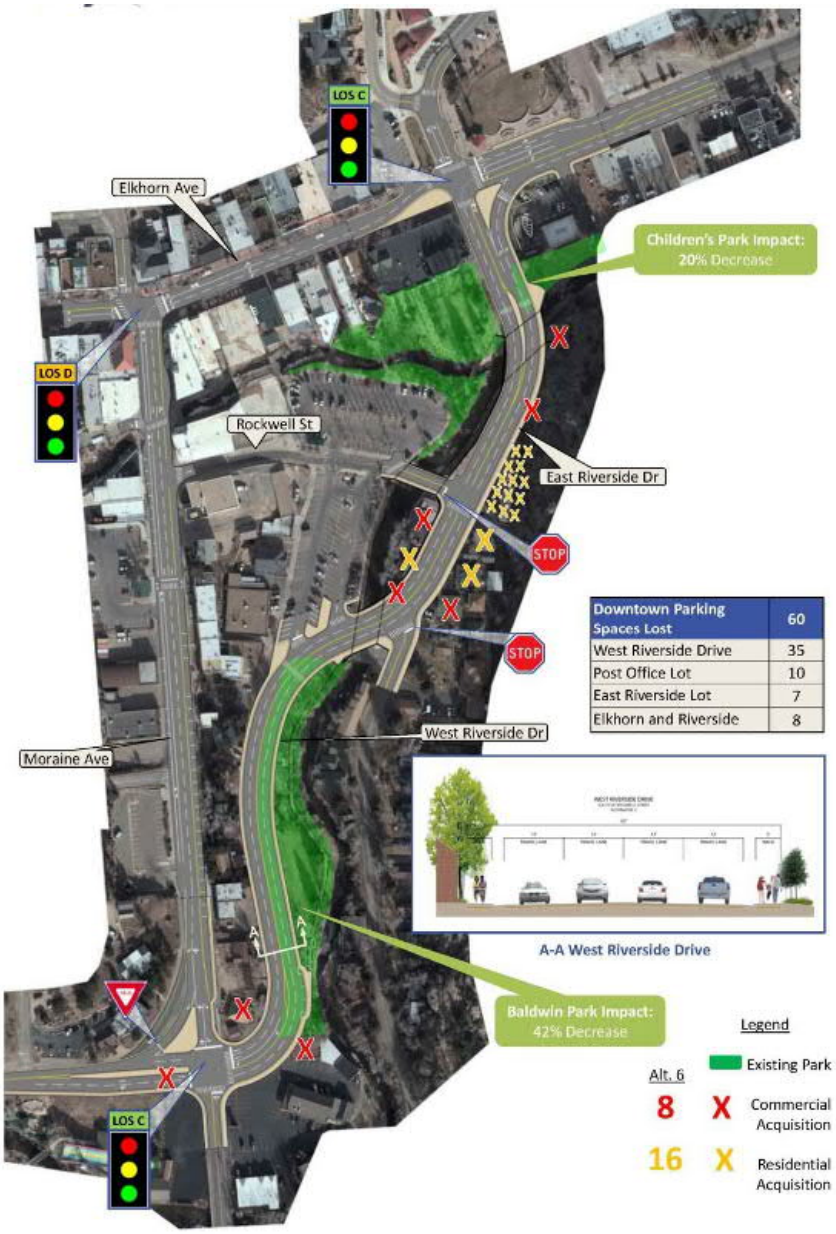
- Substantial improvement to Elkhorn/Riverside (LOS C) and Elkhorn/Moraine (LOS D)
- 4-6 total days of downtown congestion (versus 140-150 days for No Action)

R/W & Parking Impacts:

- Requires 24 full acquisition/relocations
- Reduction in 60 parking spaces

Environmental Impacts:

- 42% decrease in Baldwin Park area
- 20% decrease in Children's Park area



Alternative 10: Parking/Transit Structure

Characteristics:

- New Parking/Transit Structure on Post Office Parking Lot and Adjacent parcels
- Access to structure from Riverside and Moraine Avenue
- Intersection improvements at Moraine/Crags/Riverside

Operational Performance:

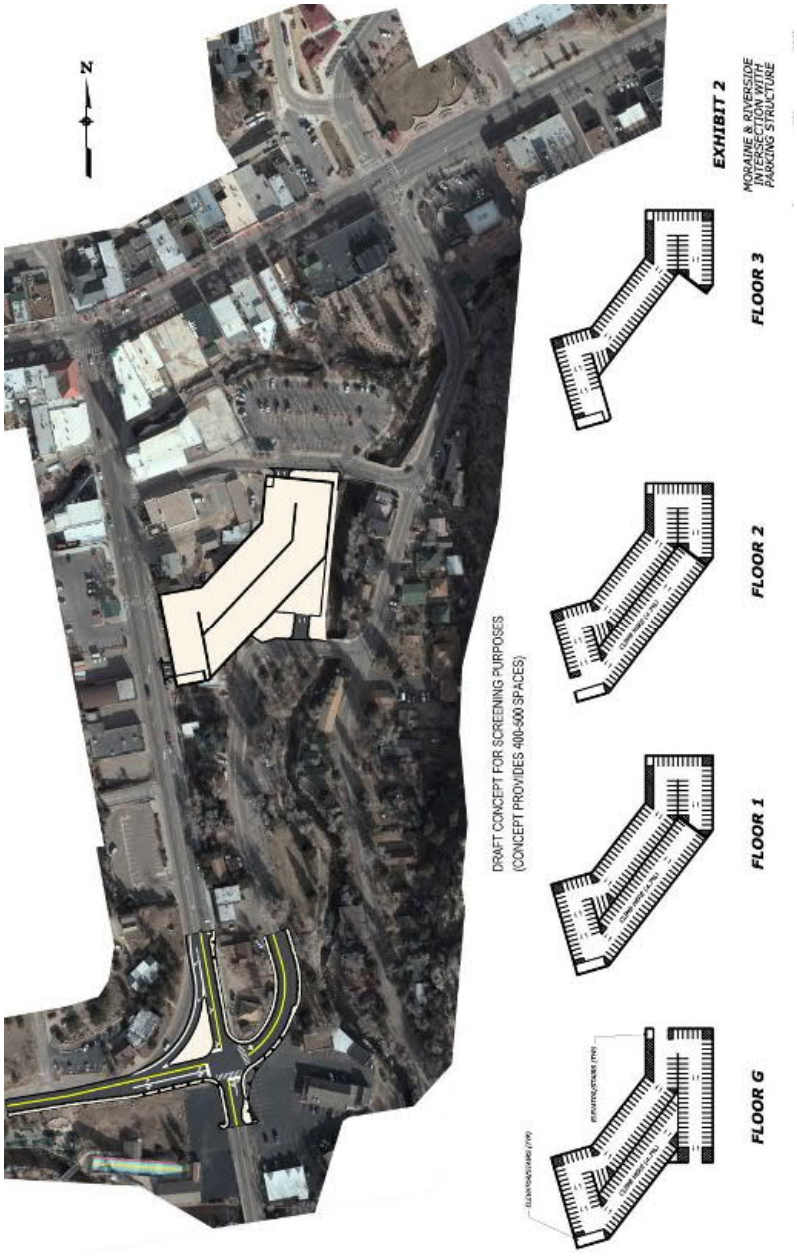
- Does not improve operations on Elkhorn/Riverside (LOS F), operates worse than No Action, Elkhorn/Moraine (LOS F) operates slightly better than No Action
- No improvement to through movement of traffic through downtown Estes Park
- Isolated intersection improvements at Moraine/Crags/Riverside operate LOS F

R/W and Parking Impacts:

- Requires 6 full acquisitions and relocations
- Net increase of 300 to 400 parking spaces

Environmental Impacts:

- Existing Post Office has been identified by Colorado State Historic Preservation Office (SHPO) as an eligible historic property. Alternative would require removal of structure currently housing the Post Office, leading to adverse effects to an historic property.



Results: The results of Level 2 screening (with associated reasoning) is shown below. Alternative 1 was the only build alternative to be recommended for advancement because it provided the best traffic operations with the least environmental impacts. Both the No Action and Alternative 1 were recommended for advancement.

- ✓ No Action: Analyze in EA per NEPA
- ✓ Alt. 1: Improves traffic operations, least environmental impact of all build alternatives
- ✗ Alt. 1A: Poor traffic operations, does not meet purpose and need
- ✗ Alt. 4: Improved traffic operations, moderate/high impacts, requires additional funding
- ✗ Alt. 2: Improved traffic operations, high environmental impacts, requires additional funding
- ✗ Alt. 6: Best traffic operations, highest environmental impact, requires additional funding
- ✗ Alt 10: Does not meet purpose and need for reducing congestion and improving access to RMNP. Requires additional funding

The Level 2 comparative screening criteria showed that a stand-alone parking structure does not adequately address the project's purpose and need, which is to reduce congestion, delay, and pedestrian/vehicle conflicts in order to enhance access to RMNP. Alternative 1, the Proposed Action, would not preclude a future parking/transit structure at the Post Office Parking lot, and could facilitate efficient access from Moraine and Riverside, if it were built in the future.

Additional detail and information is described in *Appendix A: Alternative Screening Process Technical Report*.

The No Action and Alternative 1 (thereafter referred to as the Proposed Action) were advanced for further analysis in this EA.

2.2 No Action Alternative

The No Action Alternative would leave existing 2014 roadway and other study area conditions as they are through 2040. No roadway capacity, safety, mobility or accessibility improvements would be made within the downtown involving Elkhorn Avenue, Moraine Avenue or Riverside Drive.

- The No Action Alternative includes the planned construction of a parking structure adjacent to the Estes Park Visitor Center, which serves as a hub for the Town's free shuttles and the Hiker Shuttle. The first phase, anticipated to begin in 2016, will have 210 spaces on two levels. A second phase would bring the total number of spaces to 412.
- In addition, the No Action Alternative assumes the permanent installation of recent operational modifications and new signage at the US 34/US 36 intersection. Under the new configuration, the westbound traffic (from US 36 onto US 34) has a dedicated left turn lane, a left turn with through lane, and a through lane. This configuration maintains the pre-existing left turn lanes while allowing for an additional through movement.

2.3 Proposed Action

2.3.1 Overview

The two level screening process identified Alternative 1 (One-Way) as the preferred build alternative. This build alternative was selected for its ability to best meet the purpose and need while providing the least environmentally damaging build alternative that provides significant transportation and potential flood resiliency. This alternative was advanced and expanded into the Proposed Action discussed in the following sections.

The Proposed Action involves conversion of existing roadways from two-way to one-way through downtown Estes Park. The two-lane one-way couplet has a total length of 0.92 miles. The project begins at the Elkhorn Avenue/Riverside Drive intersection, continues west on Elkhorn Avenue (US 36) to the intersection of Moraine Avenue/Big Horn Drive for 0.15 miles, then turns south on Moraine Avenue (US 36) for 0.3 miles to the intersection of Moraine Avenue and Riverside Drive/Crags Drive. These two-way roadway segments would be converted into two-lane one-way roads, west and south, respectively.

The two-lane one-way couplet is completed in the returning northerly direction via a full reconstructed West and East Riverside Drives. This segment begins at the Moraine Avenue/ Crags Drive/West Riverside Drive intersection then follows existing West Riverside Drive alignment, a new alignment near Ivy Street and along the existing East Riverside Drive alignment for a total of 0.40 miles back to the beginning of the project at the East Riverside Drive/Elkhorn Avenue intersection, completing the loop.

Pavement rehabilitation (including grinding the existing pavement and adding new pavement to repair the deteriorating asphalt) would occur on Elkhorn Avenue from west of the US 34/US 36 intersection to the Elkhorn/Moraine intersection and along Moraine from the Elkhorn/Moraine intersection to 200 feet north of the Moraine Avenue/Crags Drive/West Riverside intersection. Pavement rehabilitation on Rockwell would also occur from Moraine Ave to a new Rockwell bridge across the Big Thompson River.

The existing Ivy Street, Rockwell Street, and East Riverside Drive Bridges would be replaced with new elevated, longer, and wider bridges.

New traffic signals would be added at the Elkhorn/Riverside and Elkhorn/Moraine intersections. Two intersection options are being considered for the reconfigured Moraine/Crags/West Riverside Intersection. One option is a traffic signal and the second option is a roundabout, both described in more detail later in this section. New continuous pedestrian sidewalks, on street bike lanes and trail connection improvements would be installed. Directional and wayfinding signage along the corridors would be installed, as well as landscaping and park replacements. The key components of the proposed improvements are shown in Figure 2-1.

It should be noted here, that the implementation of this project will be phased, as described at the end of this chapter in *Section 2.6 Project Implementation*.

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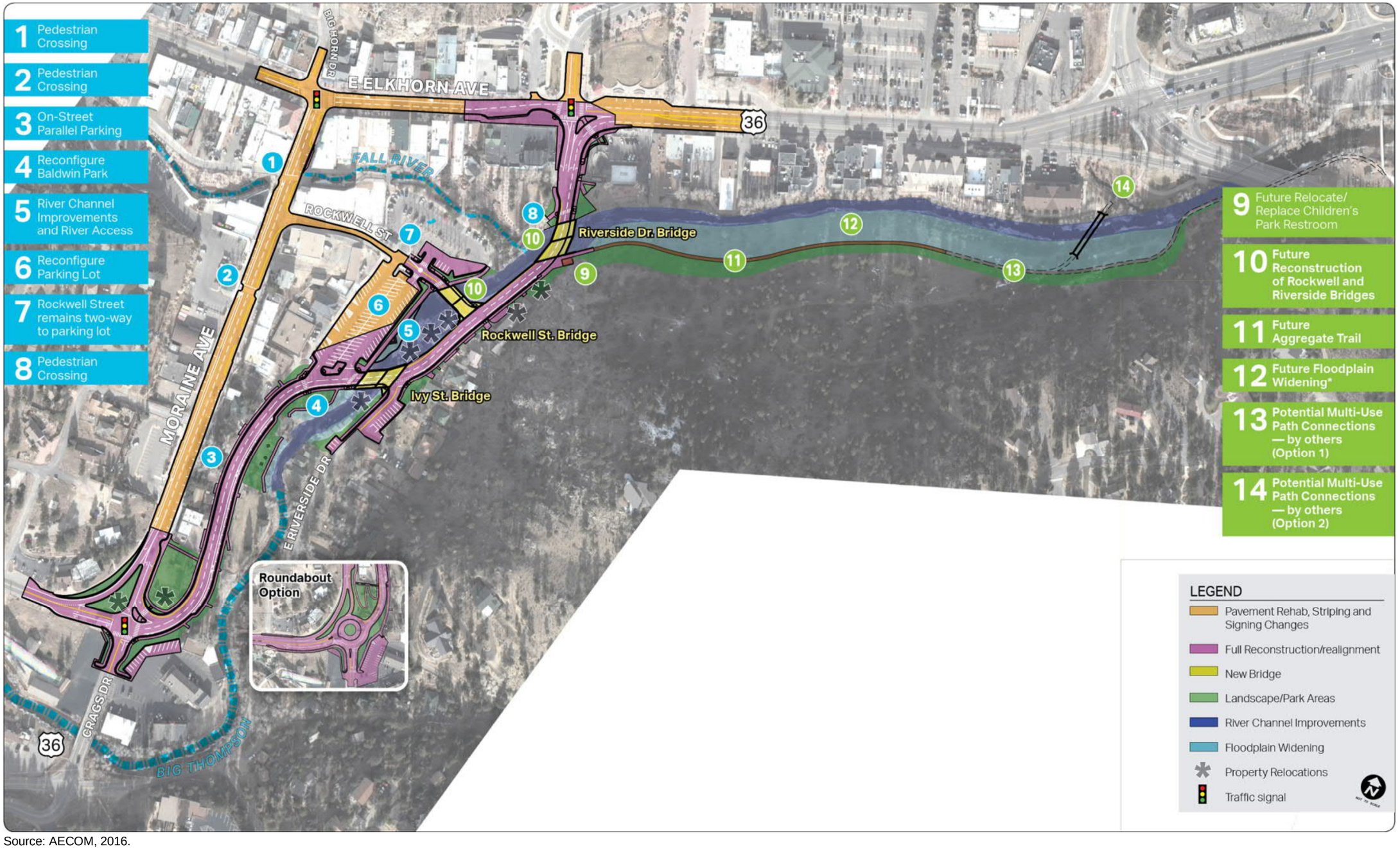
Figure 2-1: Proposed Action



Source: AECOM, 2016.

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2.3.2 Roadway Network

Elkhorn Avenue (US 36) from East Riverside Drive to Moraine Avenue: Currently this roadway provides two lanes westbound and one lane eastbound with curb and gutter and attached sidewalk/streetscape. The Proposed Action would reconfigure this segment by restriping to two lanes in a one-way configuration in the westbound direction expanding to two left turn lanes and one through/right turn lane at the Moraine Avenue intersection. Additionally, the outside travel lane would be wide enough to be shared by vehicles and bicycles, referred to as a "sharrow lane".

Moraine Avenue (US 36) from Elkhorn Avenue to Crags Drive/West Riverside Drive: Currently this roadway provides two lanes southbound and one lane northbound. The travel way widens to include an additional northbound lane from Rockwell Street to Elkhorn Avenue. The existing roadway has curb and gutter and attached sidewalk/streetscape. The Project will reconfigure this segment by restriping to two lanes in a one-way configuration in the southbound direction including a dedicated striped on street bicycle lane and parallel parking.

Riverside Drive from Moraine/Crags to Elkhorn/Riverside: Currently, West Riverside Drive, Ivy Street, and East Riverside Drive make up the parallel alternative route to Moraine Avenue/Elkhorn Avenue downtown. These segments currently include two-way traffic with varied on-street and adjacent parking (parallel, diagonal, head in, driveways), and sections of curb and gutter and attached sidewalk. The Proposed Action would reconstruct and realign these streets into a continuous 25 mile-per-hour segment with two northbound lanes, bike lane, curb and gutter, continuous attached pedestrian sidewalks, and parallel parking adjacent to Baldwin Park.

Portions of West and East Riverside would be completely reconstructed. Portions of West Riverside would be realigned while holding the western edge and access configurations in place upstream from Ivy Street. Widening would occur to the park side of the road taking land from Baldwin Park. Reconstruction downstream from the Ivy Street Bridge would hold the eastern edge of East Riverside, require business displacement and would take land from Children's Park.

The proposed roadway will cross the Big Thompson River with a new bridge at a skewed angle through a portion of Baldwin Park, maintaining access to the Post Office Parking Lot. The proposed two-span bridge is further downstream than the existing Ivy Street Bridge and slightly higher and longer to improve flood conveyance. When completed, Ivy Street would no longer exist, as this segment would become part of Riverside Drive.

A new two-span East Riverside Bridge will be constructed in the same location as the existing bridge, immediately downstream of the confluence of the Big Thompson and Fall Rivers. This bridge will be wider, longer and slightly higher than the existing bridge to improve flood conveyance and provide flood resiliency to the transportation and adjacent infrastructure.

The drainage systems along Riverside Drive will be reconstructed as part of the Riverside Drive realignment.

Rockwell Avenue: Rockwell is currently one-way (eastbound) between Moraine Avenue and the Post Office parking lot. The segment of Rockwell that extends from the Post Office parking

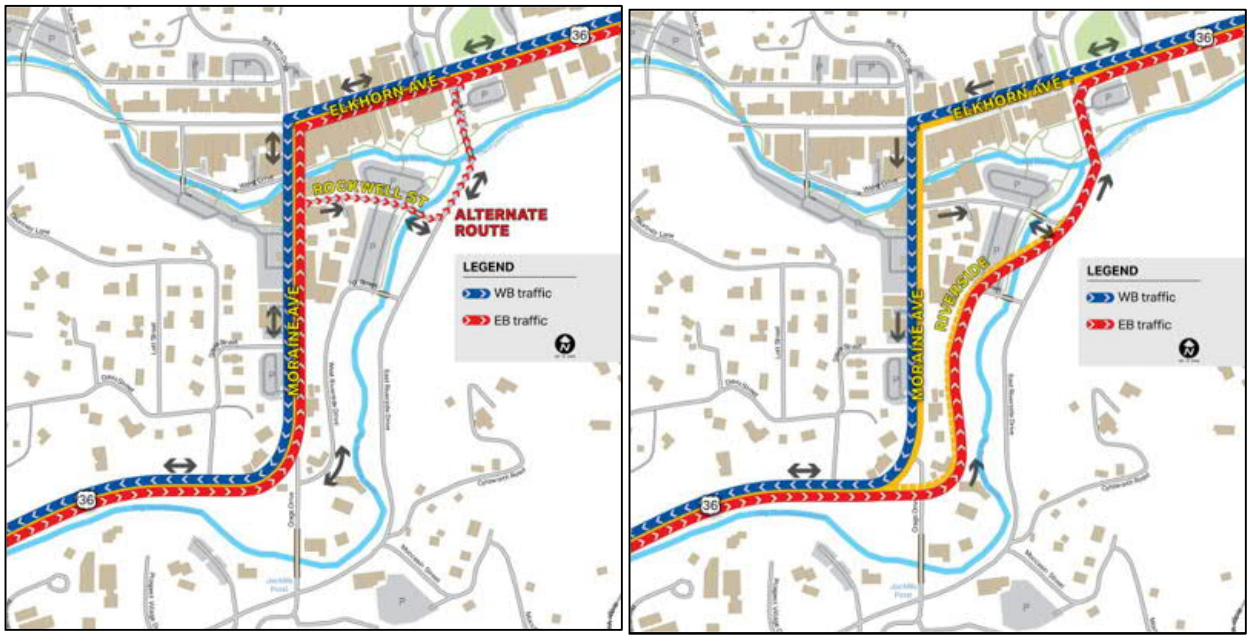
lot to East Riverside Drive is two-way. The ability to widen Rockwell to accommodate two-way travel between Moraine Avenue and the parking lot is limited by existing buildings on either side. The Build Alternative assumes no modifications to the lane direction or cross-section of Rockwell. The existing Rockwell Street Bridge approaching East Riverside Drive would be reconstructed with a new longer and slightly raised two-span bridge to provide additional flood conveyance in the Big Thompson River and improved flood resiliency to transportation and other infrastructure.

2.3.3 Travel Patterns

The Proposed Action will change the existing two-way roadways to a one-way couplet, or one-way pair, through downtown Estes Park. This roadway configuration has operational benefits when existing constraints such as closely spaced intersection, intersection operations, high pedestrian movements, and right-of-way limitations. One-way couplets have been successfully used in similar communities in Colorado and across the United States to improve traffic operations. The Colorado communities of Lyons, Loveland, Boulder, Greeley, and Alamosa, and tourism destination communities of Asheville, NC, Traverse City, MI, Williams, AZ, Bozeman, MT, Savanah, GA, Santa Barbara, CA, and Wilmington, NC have similar one-way couplet or one-way pair configurations in and near their downtowns.

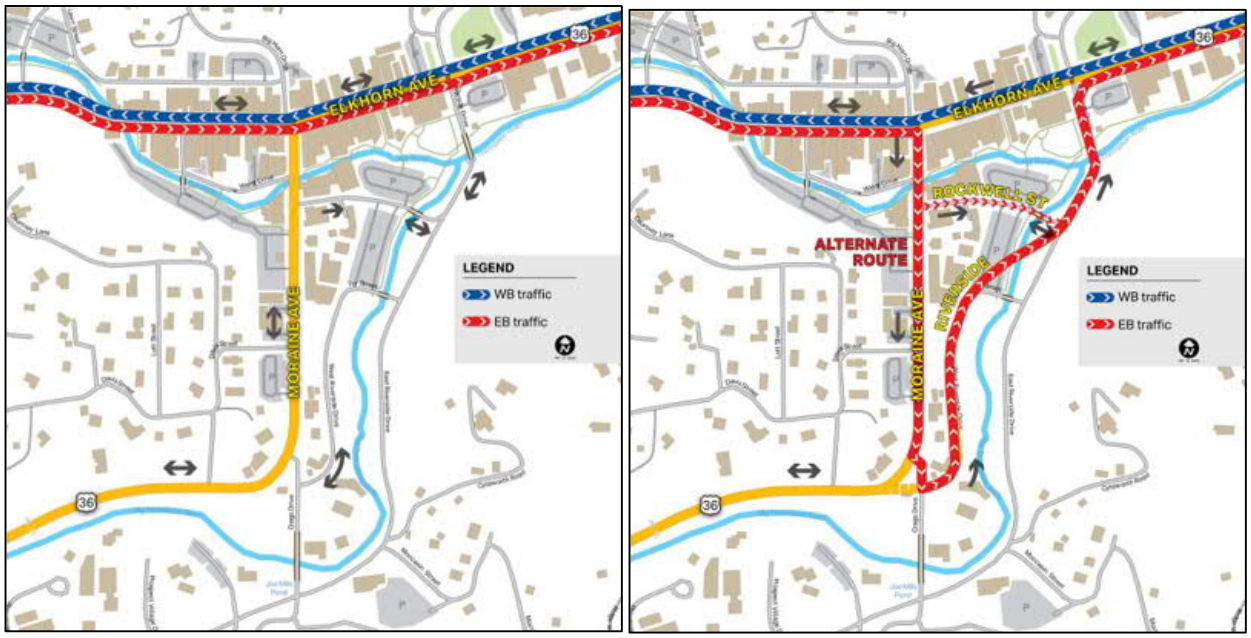
The one-way couplet requires modifications to the roadway network and resulting travel patterns for various travel routes in and around downtown Estes Park. Changes in travel patterns are shown below in Figure 2-2, Figure 2-3, and Figure 2-4 for various directions of travel.

Figure 2-2: Existing vs. Proposed Traffic To/From RMNP through Downtown Estes Park



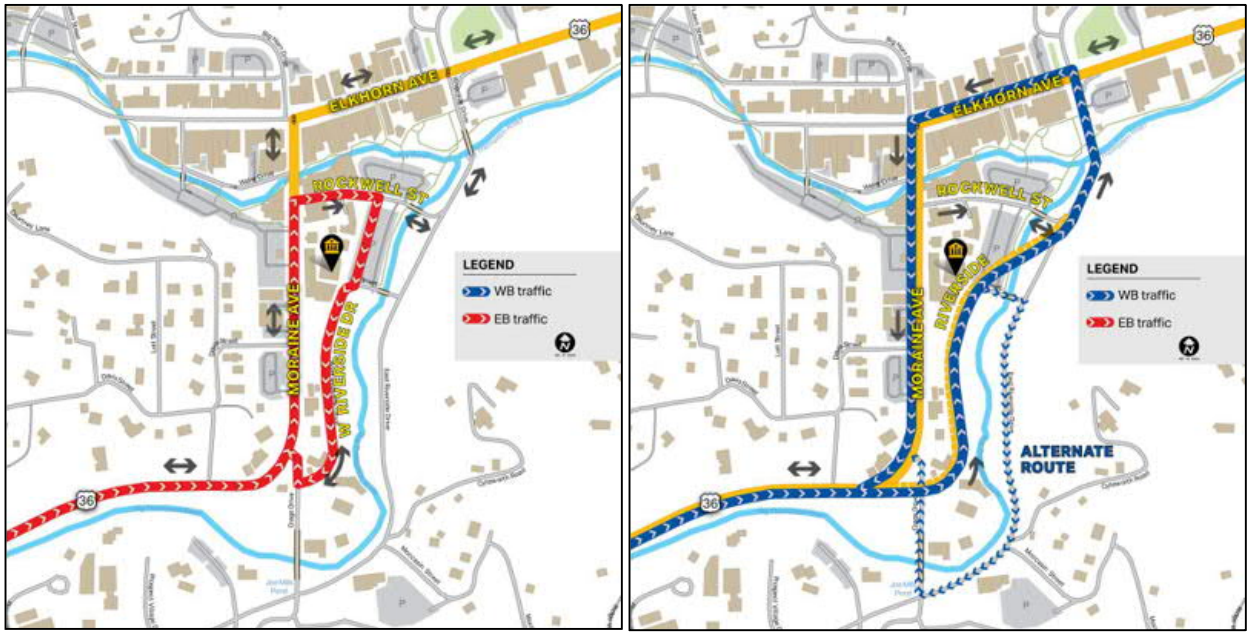
Existing **Proposed**

Figure 2-3: Existing vs. Proposed Traffic along Elkhorn Avenue



Existing **Proposed**

Figure 2-4: Existing vs. Proposed Traffic from the south (US 36) to U.S. Post Office/Downtown



Existing **Proposed**

2.3.4 Intersection Design

Elkhorn Avenue/East Riverside Drive: The intersection of Elkhorn Avenue and East Riverside Drive would be modified to include a double right turn lane from northbound East Riverside Drive onto Elkhorn Avenue (eastbound). The westbound leg of Elkhorn Avenue includes a through lane and combination through/right lane. The southbound leg of Virginia Drive includes a right turn lane and a left turn lane. A new traffic signal will be installed meeting current standards and will include emergency services preemption devices. The Barnes Dance (which was reintroduced on May 27, 2016 at the Elkhorn/Moraine and Elkhorn/Riverside intersections), all walk phase will be used during signal operations at this intersection because it improves operations under one-way conditions, and is required so that there is not a pedestrian only phase for the west leg crossing. Figure 2-5 shows the existing and proposed action intersection configurations and elements for Elkhorn Avenue and East Riverside Drive. The reconfigured signalized intersection reduces the number of pedestrian-vehicle and vehicle-vehicle conflict points from 63 to 43 conflict points compared to the No Action.

Elkhorn Avenue/Moraine Avenue: The intersection of Elkhorn Avenue and Moraine Avenue would be modified to include a double left turn lane from westbound Elkhorn Avenue onto Moraine Avenue (southbound), and a separate through-right lane onto Big Horn Drive (northbound). The eastbound leg of Elkhorn Avenue includes a left turn lane and right turn lane. The southbound leg (Big Horn Drive) includes a shared through right lane. A new traffic signal will be installed meeting current standards and will include emergency services preemption devices. The Barnes Dance (which was reintroduced on May 27, 2016 at the Elkhorn/Moraine and Elkhorn/Riverside intersections), all walk phase will be used during signal operations at this intersection because it improves operations under one-way conditions, and is required so that there is not a pedestrian only phase for the south side intersection leg crossing. Figure 2-6 shows the existing and proposed action intersection configurations and elements for Elkhorn Avenue and East Riverside Drive. The reconfigured signalized intersection reduces the number of pedestrian-vehicle and vehicle-vehicle conflict points from 45 to 30 conflict points compared to the No Action.

Figure 2-5: Existing and Proposed Elkhorn Avenue/East Riverside Drive/Virginia Drive

Figure 2-6: Existing and Proposed Elkhorn Avenue/Moraine Avenue/Big Horn Drive

Riverside Drive/Crags Drive/Moraine Avenue: The Proposed Action requires modification to the existing configuration at Riverside Drive/Crags Drive/Moraine Avenue. This reconstruction would involve changing the existing tee intersection with a continuous Moraine Avenue to a four legged intersection with a south to west bypass that provides a direct connection between Moraine Avenue and West Riverside Drive. The reconstruction of this intersection includes lowering the elevation of the approaching roads to facilitate connections and private property access. The Proposed Action includes two intersection options being considered at this location as discussed below. Either intersection would provide a through movement for eastbound Moraine Avenue traffic down East Riverside Drive, and both include a continuous southbound to westbound lane on Moraine Avenue (westbound US 36). Northbound Crags Drive to westbound would yield to the free flow right turn from southbound to westbound Moraine Avenue.

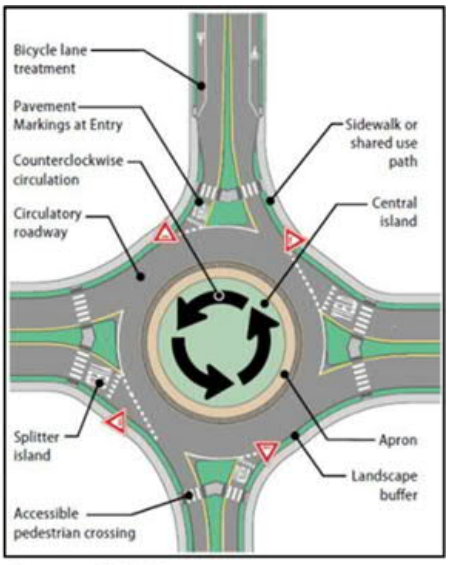
Traffic Signal Option: A traditional signalized intersection (Figure 2-7) includes realigning and lowering the intersection to include: a southbound left/through/right lane and a southbound left turn only lane; a northbound left turn lane and northbound right turn lane; an eastbound through lane and eastbound through/right turn lane. A new traffic signal will be installed meeting current standards and will include emergency services preemption devices. The signalized intersection increases the number of pedestrian-vehicle, and vehicle-vehicle conflict points from 15 to 30 conflict points compared to the No Action. This change is due to the configuration changing from a tee intersection to a four-legged intersection.

Roundabout Option: A roundabout intersection is defined as Option 2 (Figure 2-8). Northbound traffic from Crags Drive would be able to turn right to eastbound East Riverside Drive and west to Moraine Avenue, by going around the roundabout then exiting to the west. Southbound Moraine would have a continuous lane to the west (remaining on westbound Moraine Avenue), and include a lane for turning to eastbound East Riverside Drive, by going around the roundabout and exiting to the east. The roundabout intersection reduces the number of pedestrian-vehicle, and vehicle-vehicle conflict points from 15 to 10 compared to the No Action.

What is a roundabout?

A roundabout is a type of circular intersection that has certain distinguishing features and characteristics (as shown in the adjacent characteristics diagram). Roundabouts utilize yield control on all legs and have been shown to reduce the severity of vehicle to vehicle crashes and reduce and eliminate idling traffic compared to standard signalized intersections.

Roundabouts have been constructed in Colorado since the mid-1990s. Roundabouts are in use in the northern Front Range communities of Fort Collins, Loveland, Greeley, Erie, and Superior; and in Colorado mountain communities of Breckenridge, Vail, Carbondale, Telluride, and Nederland, to name a few. More than 300 roundabouts are in use in Colorado.



Source: FHWA

The two intersection options have similar impacts to right-of–way, costs, and environmental resources but the roundabout option provides improved operational benefits compared to the signalized option when approach delay and queuing lengths are compared. The selection of the final intersection option will be determined by CFLHD in cooperation with the Town of Estes and CDOT based on technical review and community input as part of this EA. A final decision will be included in the NEPA decision document.

Figure 2-7: Existing and Proposed Moraine Avenue/Riverside Drive/Crags Drive (Traffic Signal Option)

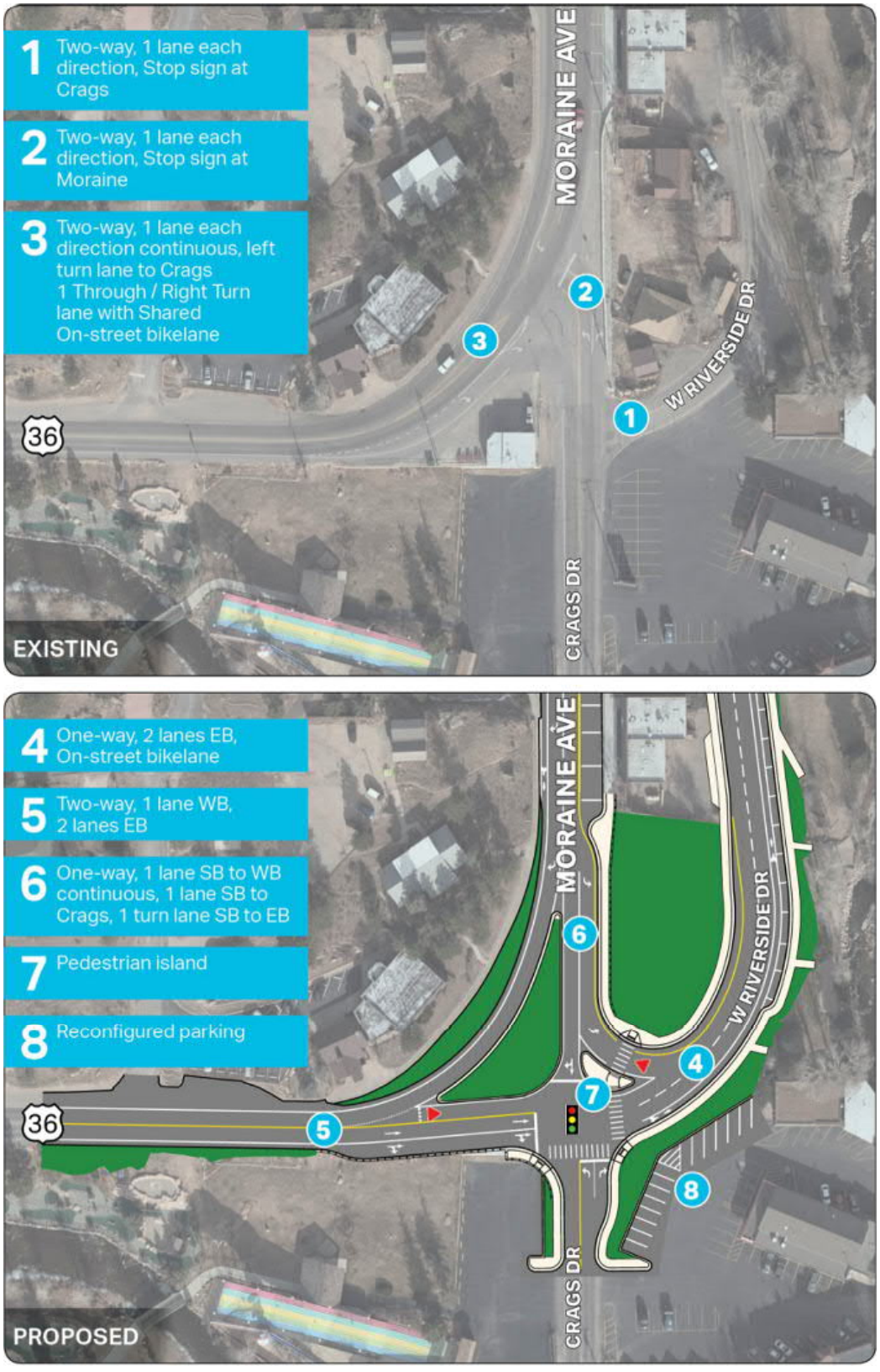
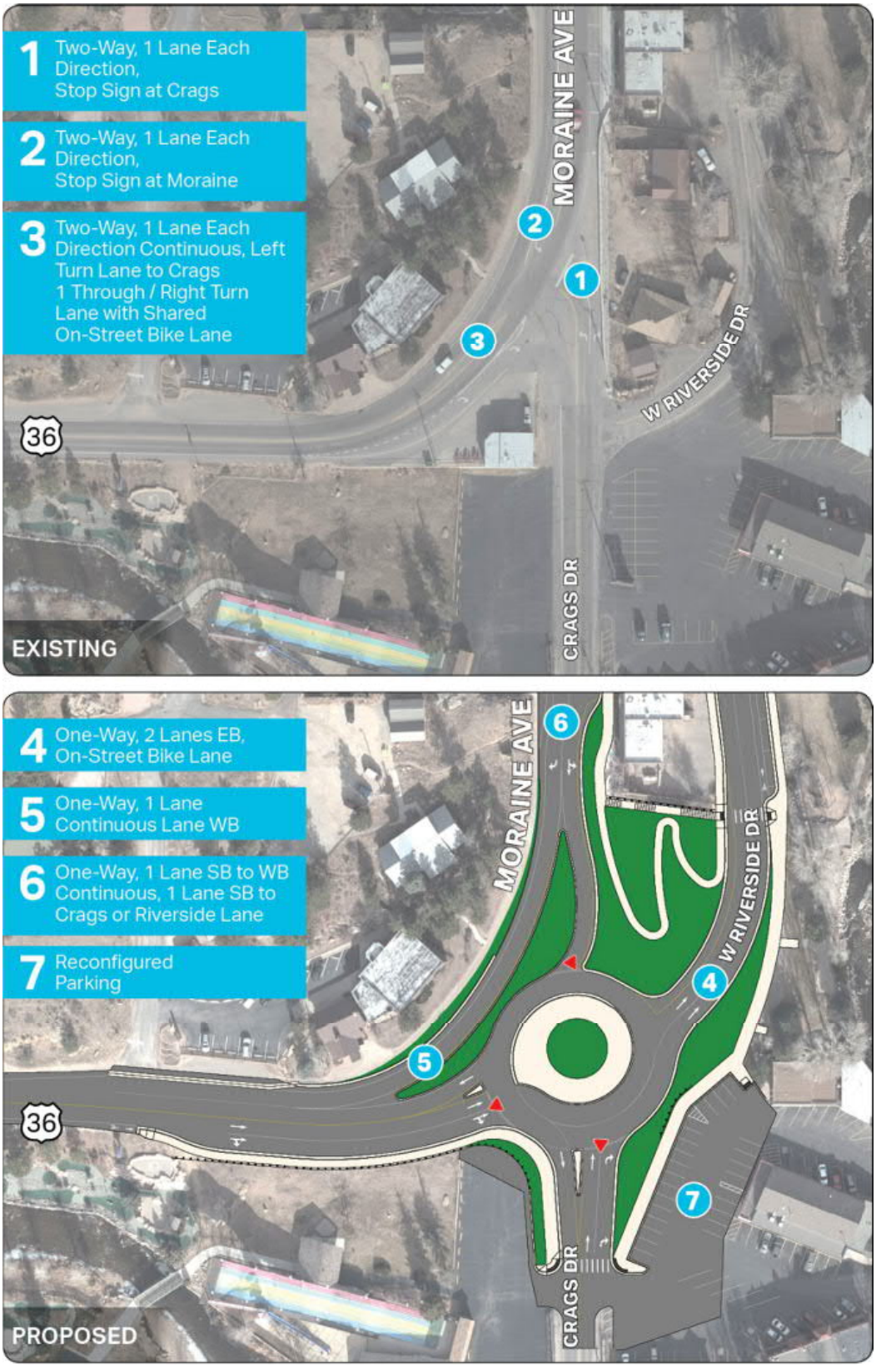


Figure 2-8: Existing and Proposed Moraine Avenue/Riverside Drive/Crags Drive (Roundabout Option)



2.3.5 Bicycle, Sidewalks, Riverwalk Pedestrian Crossings

The Proposed Action would include on-street bike lanes on Moraine Avenue in the southbound direction and on West and East Riverside drives for the northbound direction. On-street bike lanes are 5-feet wide located adjacent to the outside travel lane. In the northbound direction the on-street bike lane would end at the Big Thompson River near a future multi-use path heading east on the south side of the Big Thompson River, described later in this chapter. A shared bike lane would be striped on Elkhorn Avenue using a "sharrow" in the outside lane.

The Proposed Action would construct new sidewalks along West and East Riverside Drive connecting to existing Riverwalk locations and providing continuous sidewalks throughout the downtown, that do not exist today. The existing Riverwalk crossings at East Riverside Drive and Moraine Avenue south of Elkhorn Avenue will be upgraded. Due to the high pedestrian volumes and close spacing of the Riverwalk crossings to the Elkhorn intersections an actuated pedestrian signal is required at both the East Riverside and Moraine Avenue Riverwalk Crossings. These crossings will include a pedestrian signal that would be coordinated with the adjacent traffic signal operations. This coordinated signal timing will improve traffic operations and provide improved safety for pedestrian by stopping vehicular traffic with a signal. The pedestrian signal operations will be coordinated with the intersection signal operations to provide two phases per cycle to keep pedestrians moving while not impacting vehicles too severely. Much like a normal vehicular intersection pedestrians will need to push the pedestrian signal button and wait for it to change to a walk phase before proceeding across the street. The existing Rectangular Rapid Flashing Beacon (RRFB) Yield sign located on Moraine Avenue south of Rockwell near the public restroom will remain in place unchanged. Other existing and proposed crossings of West and East Riverside would be upgraded with pavement markings and signage indicating the crossing and possible RRFB treatments. These details will be determined during final design.

2.3.6 Parking

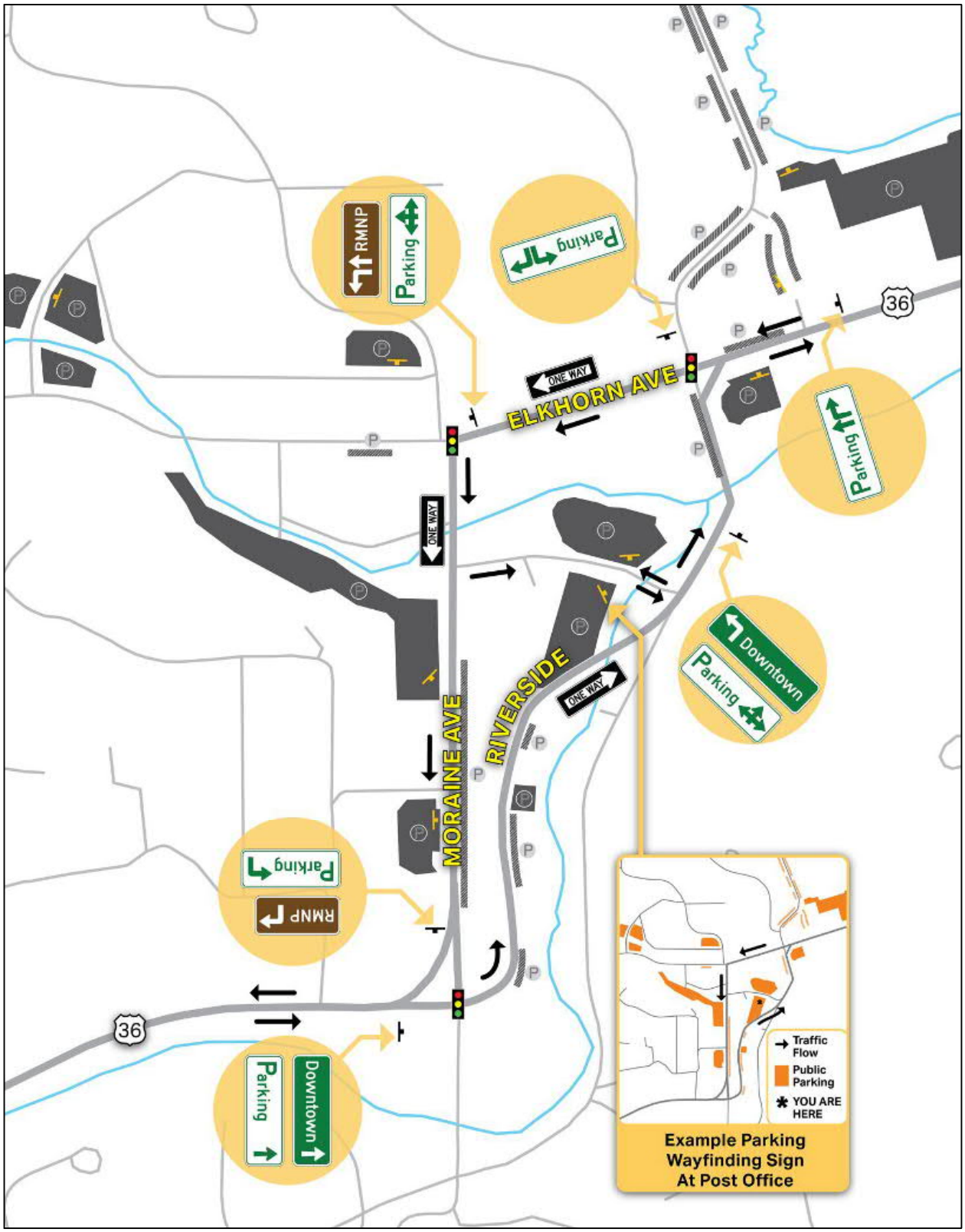
The Proposed Action requires permanent displacement of thirteen parking spaces. Four of these thirteen spaces are displaced in the parking lot in front of Piccadilly Square, which is partially on Town owned property, but signed as private parking. The other displaced parking spaces occur along West and East Riverside Drives, in the Post Office Lot and in the East Riverside/Children's Park Lot. Existing parallel parking spaces along Moraine Avenue would be increased in several locations as part of the striping changes to the one-way configuration. Parking impacts would be the same under either the Signalized intersection or Roundabout options. Final parking locations will continue to be optimized and refined during final design. Refer to *Section 3.1: Transportation*, for a detailed description of the location of the impacted parking.

The Proposed Action would reconfigure the existing Post Office parking lot. The existing direction of the diagonal parking would be modified so that the northbound direction would be on the west side and the southbound direction would be on the east side, opposite of what it is today. Access to the Post Office and adjacent buildings and existing drive up mail boxes would be similar to the existing condition.

2.3.7 Signage and Wayfinding

New signage would be installed as part of the Proposed Action including both regulatory traffic signs and wayfinding signs for parking and destinations. This signage is needed to clearly signify one-way and two-way routes, and to provide direction to RMNP, downtown parking, and destinations within downtown Estes Park. The final details for new and replacement signs will be developed with community input and as part of the final design process for this project, and in coordination with the Estes Park Downtown Plan. An initial wayfinding concept is shown in Figure 2-9 showing destination and parking wayfinding concepts.

Figure 2-9: Initial Wayfinding Concept



Conceptual Plan (subject to change): final details to be determined in coordination with Downtown Plan and final design of this project.

2.3.8 Channel/Floodplain Improvements

The significant flooding events that occurred in September 2013 changed the predicted 100-year flood levels in downtown Estes Park and surrounding areas. Current estimates, based on best available data, indicate major increases to floodplain boundaries in downtown Estes Park. Recent hydrology and hydraulics analysis indicates that the Ivy Street, Rockwell Street and East Riverside Drive bridges need to be completely rebuilt, lengthened, and elevated to provide additional hydraulic capacity for the Big Thompson River. New regulatory flood flows and floodplain boundary mapping is an ongoing effort within Estes Park. The concepts presented within the proposed action for channel and floodplain improvements are based on current best available data. These concepts will be confirmed and finalized during final design of the project. (Refer to *Section 3.8, Water Resources, Floodplains and Water Quality* more detailed description).

Rebuilding, enlarging, and elevating bridges alone will not fully mitigate the flooding risks; flooding issues currently extend downstream of the Big Thompson River and Fall River confluence. Thus, this study includes downstream floodplain widening of the Big Thompson River corridor between the East Riverside Drive Bridge and US 36 to provide added flood resiliency for the roadway and adjacent infrastructure. These activities are not part of the Phase 1 project and would be constructed at a future date when funding becomes available. Figure 2-10 clarifies the limits of channel modification necessary within the proposed project.

Ivy to Riverside Channel Widening & Lowering

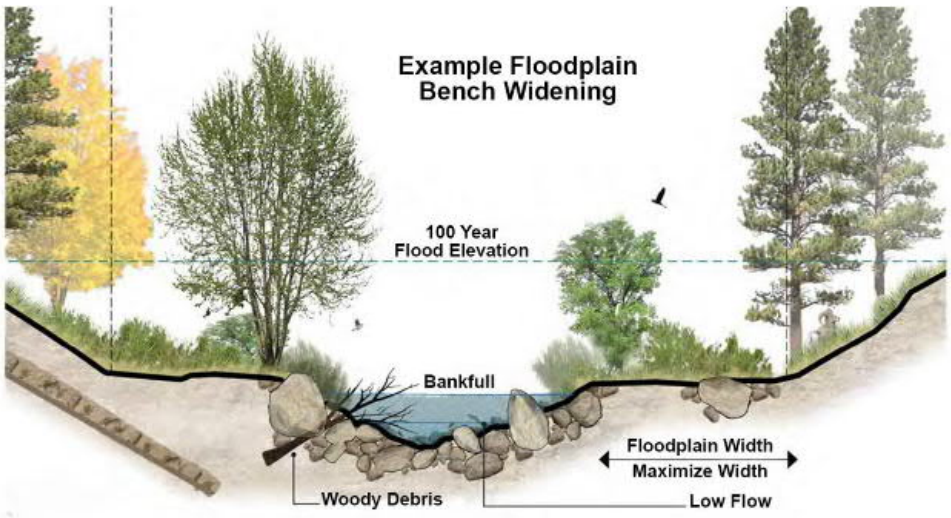
In coordination with replacing, enlarging and raising the Ivy Street, Rockwell Street, and East Riverside Bridge the flow line of the Big Thompson River will be lowered up to 18-inches between the East Riverside Drive Bridge to 100 feet upstream of the new Ivy Street Bridge. In addition to the channel profile lowering, the flow line of the channel will be realigned between the Rockwell Bridge and Ivy Street Bridge, and the channel will be widened to provide additional drainage capacity. This channel profile lowering and channel widening will be constructed by constraining (to the west edge) the existing flow with temporary berms and excavating material for the new channel cross section to the east.

Improving the channel capacity and constructing an active floodplain will improve resiliency of the proposed roadway infrastructure, while promoting terrestrial and aquatic habitats within the project area. These improvements could include the construction of numerous stream restoration features. These may include, but are not limited to:

- Low flow channel alignments
- Floodplain benches
- Step pool or riffle pool systems
- Large woody debris structures
- Habitat complexity features
- Wetland/Riparian restoration

Downstream Big Thompson River Floodplain Widening (Future Phase)

Downstream of the East Riverside Drive Bridge the Big Thompson River channel would be widened into the adjacent hillside to the south of the existing river corridor. The only affected property would be that belonging to the Town of Estes Park, and CDOT. The widening would include creating a floodplain bench adjacent to the existing river channel. The Fall River Master Plan and the Big Thompson River Restoration Master Plan were used to evaluate floodplain options for the downstream widening element of this project. It was determined that a floodplain bench concept would be the most appropriate option for this project. The floodplain bench would be consistent with the concepts presented in the Big Thompson River Restoration Master Plan shown in the figure to the right. This would provide needed capacity during high water and keep the existing river channel and ordinary flows in the same location adjacent to the Riverwalk. To complete this channel widening the adjacent hillside would be excavated on the south side of the existing Big Thompson River. Blasting would be required to break up sections of hard rock. Material would be removed from the south side out to East Riverside Drive.

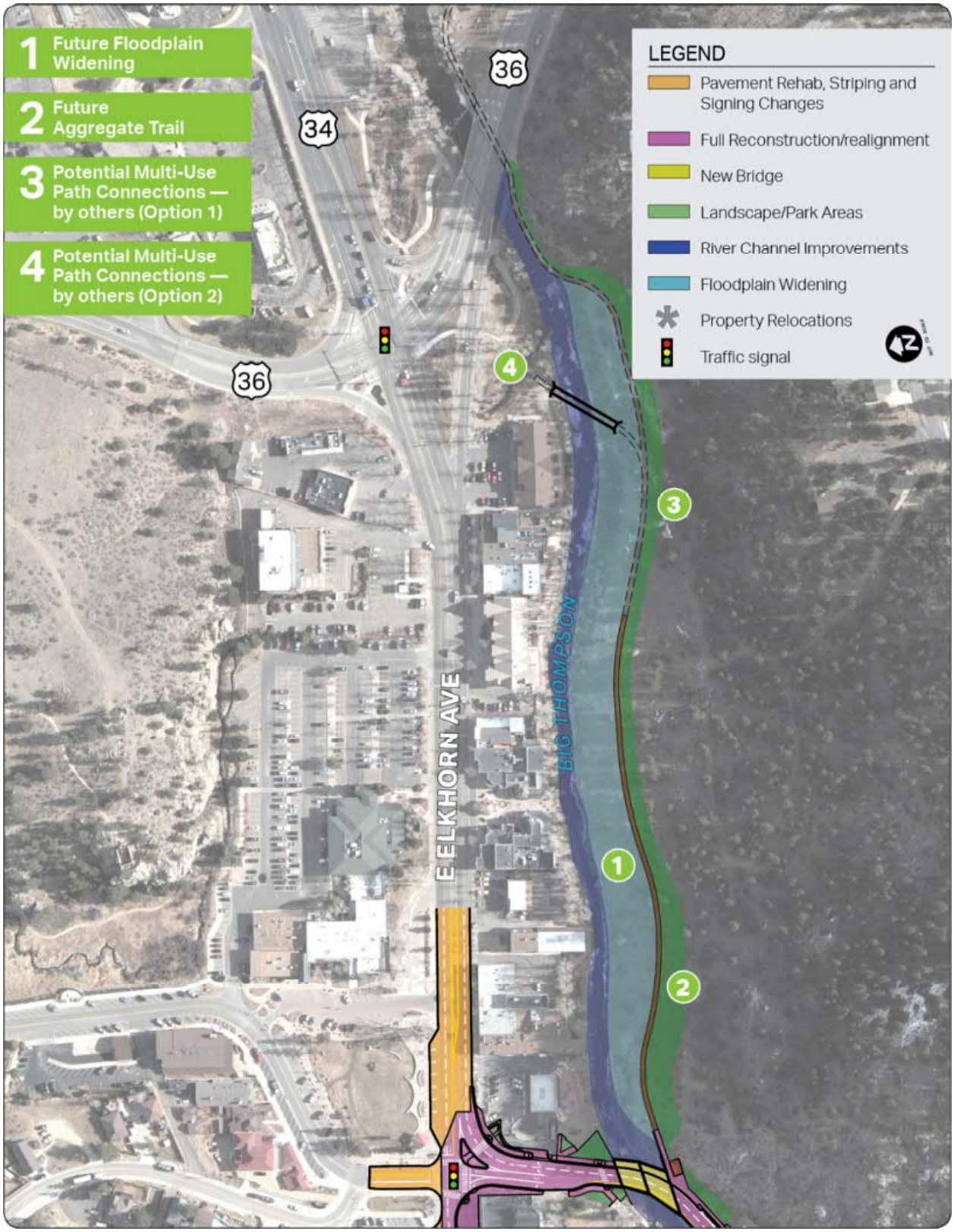


Source: Big Thompson River Restoration Coalition, 2014

Included with downstream channel widening is the grading and initial aggregate trail on the new floodplain bench. This aggregate trail would extend initially within the floodplain bench to provide access to existing conservation easements on the south side of the Big Thompson River. A future multi-use trail project could upgrade this aggregate trail to a paved path and connect the pathway to the east either with a connection along the south edge of the Big Thompson River under US 36 or a new pedestrian bridge across the Big Thompson River west of US 36 as shown in Figure 2-10.

All channel widening and floodplain improvements are anticipated to be designed in consultation with the Estes Valley Watershed Coalition, Colorado Water Conservation Board, and U.S. Army Corps of Engineers and implemented with a broad range of measures necessary to protect construction and post-construction water quality and comply with Clean Water Act Section 404 permitting requirements. These measures would be designed and implemented to limit discharge of contaminants and sediments into the river during and after construction and to create long-term channel stability.

Figure 2-10: Downstream Channel Improvements



Source: AECOM 2016

2.3.9 Utilities

There are numerous utilities within the existing right-of-way many of which will require relocation (Refer to *Section 3.14, Public Services and Utilities*, for a more detailed description). CFLHD is working with utility companies to determine relocation requirements and utility agreements. It is assumed that private utilities in existing Town of Estes Park right-of-way are covered under a franchise agreement or prescriptive utility easement. The project will relocate utilities as necessary to construct the Proposed Action.

2.3.10 Park Features and Enhancements

The Proposed Action requires acquisition of lands within Baldwin Park and Children's Park. To mitigate for this impact, restoration improvements at the existing parks, as well as new park land along the Big Thompson River, are proposed (Refer to *Section 3.16, Parks, Recreation, Open Space, Section 4(f) and Section 6(f),* for a more detailed description). A general plan identifying the existing park areas, proposed park areas and areas for potential landscaping and/or future recreation use as part of the Proposed Action are shown in Figure 2-11. The general approach has been developed in cooperation with Town of Estes Park staff. The plan includes enough detail to characterize what is proposed and funded while allowing for considerable flexibility during a preliminary and final design process that would follow completion of the NEPA process.

The intent of the planned design is to improve park land interconnections along the Big Thompson River with new pedestrian facilities, and park interconnections matching the natural feeling of the Baldwin Park and Big Thompson River. An initial conceptual plan showing the replacement park features and characteristics is shown in Figure 2-12.

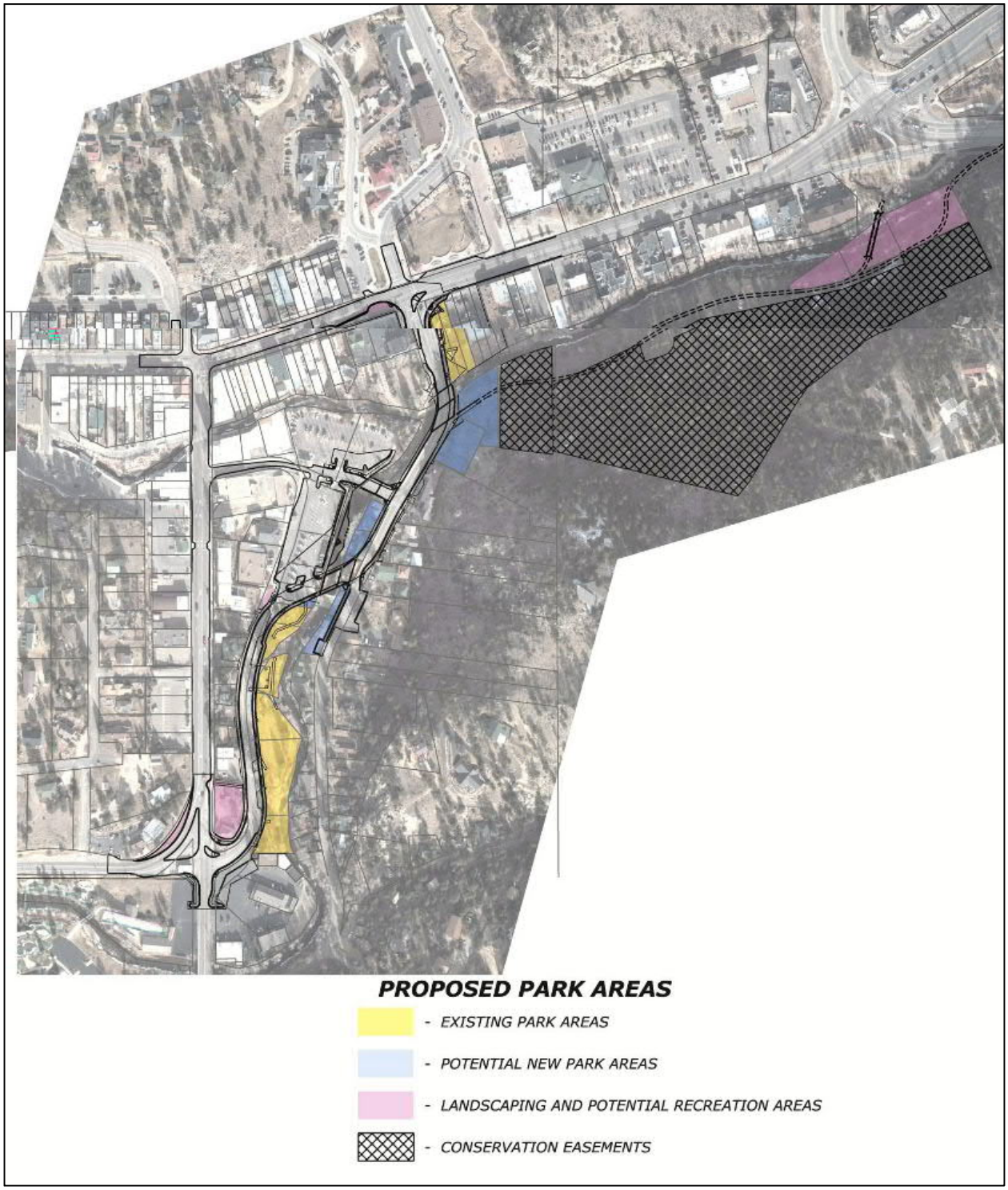
The existing public restroom at the Children's Park adjacent to East Riverside Drive is anticipated to be relocated to the south side of the Big Thompson River on the east side of East Riverside Drive in a future phase of the project. The new restroom would likely be of similar size and capacity and built to current building standards and requirements for ADA. The architectural design of the new restroom would be determined during final design and likely match the general character of the downtown and Town visitor features.

Displaced amenities and hard surface features would be replaced in a manner that reestablishes existing conditions to the extent practicable. Tree removal and other vegetation displaced as a result of road improvements, channel widening, and construction disruption would be replaced.

Final park planning details, including the design details of the restroom and other amenities would be resolved after completion of the NEPA process during the project's final design process through input from the community.

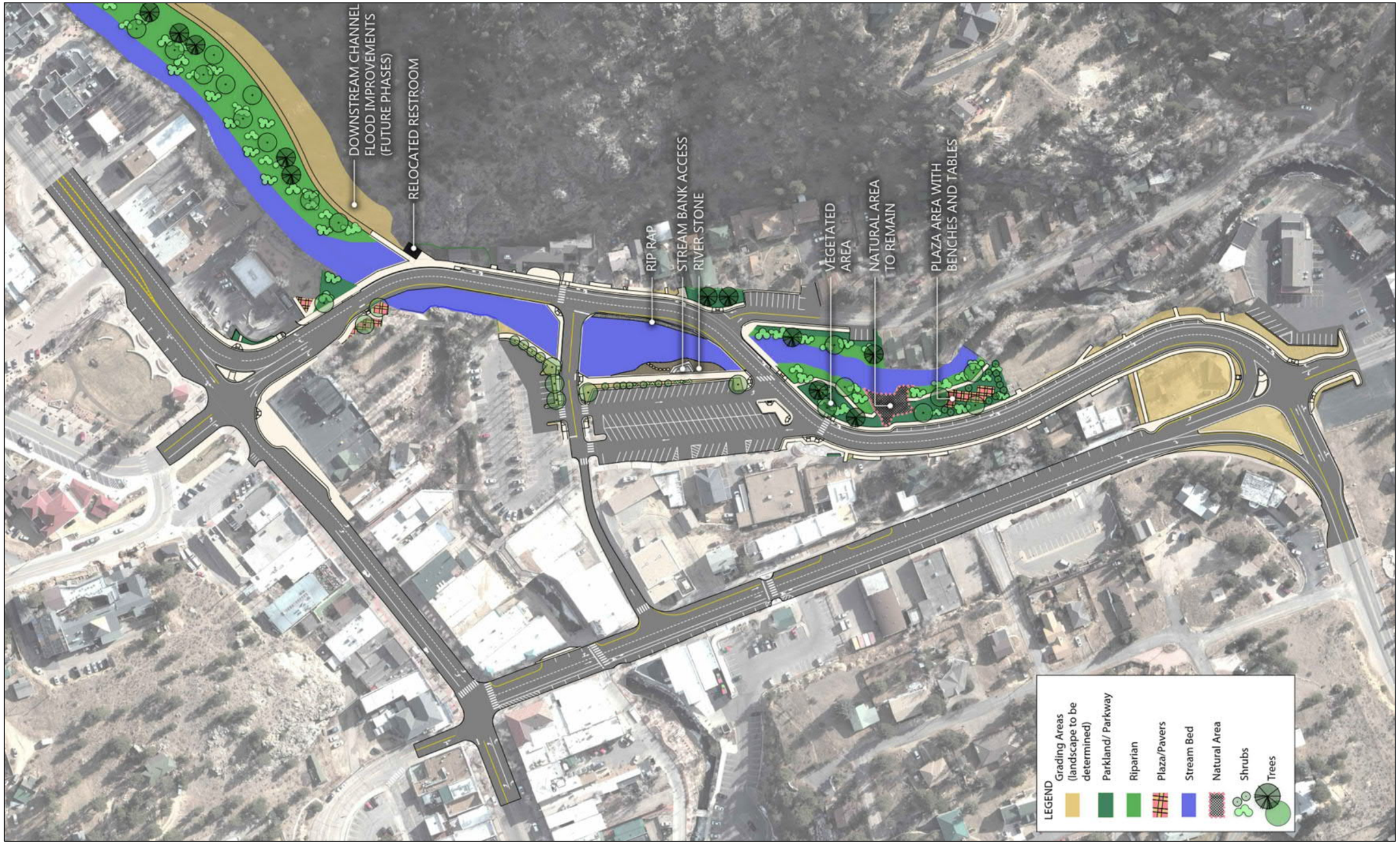
See *Chapter 4: Correspondence, Consultation and Coordination* for a discussion of coordination activities that have taken place with the Town of Estes Park Public Works Department/Parks Division, Estes Valley Land Trust, CPW, as well as Tribes that have a history in the area, including the Northern Arapahoe Tribe.

Figure 2-11: Existing/Proposed Park Areas and Landscape/Future Recreation Areas



Source: AECOM 2016

Figure 2-12: Park Replacement Concept Plan



Source: AECOM 2016

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2.4 Project Costs and Funding

2.4.1 Project Costs

The expansion of the project scope to include the replacement of the Rockwell and Riverside Bridges and the Big Thompson River downstream widening to address the changes in regulatory flood flows has increased the project cost estimates for the Proposed Action. CFLHD estimates the total costs of the Proposed Action at approximately $34 million (see table 2-1).

Table 2-1: Opinion of Probable Cost

Item	Cost
Construction Bid Items	
Roadway Improvements	$4.2 M
Bridge Replacements and Retaining Walls	$4.0 M
Traffic Signals and Signing	$1.2 M
Landscape and Enhancements	$1.3 M
Removals and Resets	$1.0 M
Mobilization, Traffic Control & Miscellaneous Items	$4.1 M
Downstream Big Thompson Widening	$9.3 M
Right-of-Way and Utilities	
Right-of-Way and Utilities	$4.6 M
Professional Services	
Design and Environmental	$1.8 M
Construction Management	$2.5 M
Total	**$34.0 M**

Source: AECOM 2016

2.4.2 Available Project Funding

The total available funding for this project is $17.2M (see table 2-2). In 2013, this project was selected for inclusion in the Colorado Federal Lands Access Program (FLAP) for Preliminary Engineering, right-of-way, and construction costs up to $13 million. The FLAP program is administered by the FHWA CFLHD. FLAP provides funding for work on public facilities that are located on, are adjacent to, or provide access to federal lands. The project identified in the application included reconfiguring existing two-way roadways to one-way to reduce traffic congestion and improve safety for both vehicles and pedestrians between Estes Park and RMNP.

In addition, the Town received funding ($4.2 Million) under the Colorado Department of Transportation (CDOT) Responsible Acceleration of Maintenance and Partnerships (RAMP) Program. The RAMP Program funding is designed to promote public-private partnerships including the transfer of ownership of certain CDOT roadways to a local agency with demonstrated support and willingness to take ownership and maintenance. Under this program, the Town has taken ownership and maintenance from CDOT of West Elkhorn Avenue (from Moraine Avenue west to US 34), and the $4.2 Million will constitute the local match for the larger

FLAP project. Neither the RAMP nor FLAP funding are in the form of loans that would require repayment to the state or federal government.

Table 2-2: Available Funding Sources

Funding Source	Amount
FHWA – FLAP Program	$13 M
CDOT – RAMP Funds	$4.2 M
Total	$17.2 M

Source: AECOM 2016

The available funding for the project is programmed in the State of Colorado Transportation Improvement Plan (STIP). The funded Phase 1 of the Proposed Action is in the STIP identified as SUF4001, Estes Park Loop. The adopted UFR 2040 Regional Transportation Plan includes the funded Phase 1 in their Priority Project Ranking List. The UFR supports a future modification to the Priority Project Ranking List to include future phases of the project.

2.5 Construction

If funding for the full Proposed Action was available it would likely take two construction seasons for a total of 18 to 24 months to complete construction. The reconstruction of the most disruptive components that would affect through traffic would take place prior to Memorial Day or after September. However, with the high elevation there will be a lot of temperature dependent work that would need to be completed during warmer months. Any work conducted between May and October would be completed during weekdays and no lane closures on US 36 lanes would occur from Friday to Sunday. It should be noted that the most heavily traveled roadways (Elkhorn and Moraine) will require pavement rehabilitation, signing, and striping, which is far easier to maintain traffic along these routes.

Coordination with the U.S. Army Corps of Engineers will be required to satisfy the permitting requirements associated with bridge removal and construction activities within the channel.

Access to the bridge sites is provided by both West and East Riverside Drive. Crane placement locations would be limited near the bridge ends and away from the pedestrian/bicycle trail along the west side. The site has limited staging areas for construction equipment and personnel. The Post Office parking lot could provide temporary staging as required for the bridge replacement operations. However, timing and access would be contingent on timing and need to address visitor traffic demands.

Sites for storing equipment, vehicles and materials have not been selected. These sites are typically selected by the contractor following negotiations to obtain agreements for the use of lands adjacent to a construction site. Vacant lots are typically used when available. However, for this project, existing parking lots are likely to provide the best possible opportunities for handing and containing project equipment, vehicles and materials and their effects during the construction period. Every effort will be made to reduce impacts to available parking during the busy summer months.

2.6 Project Implementation

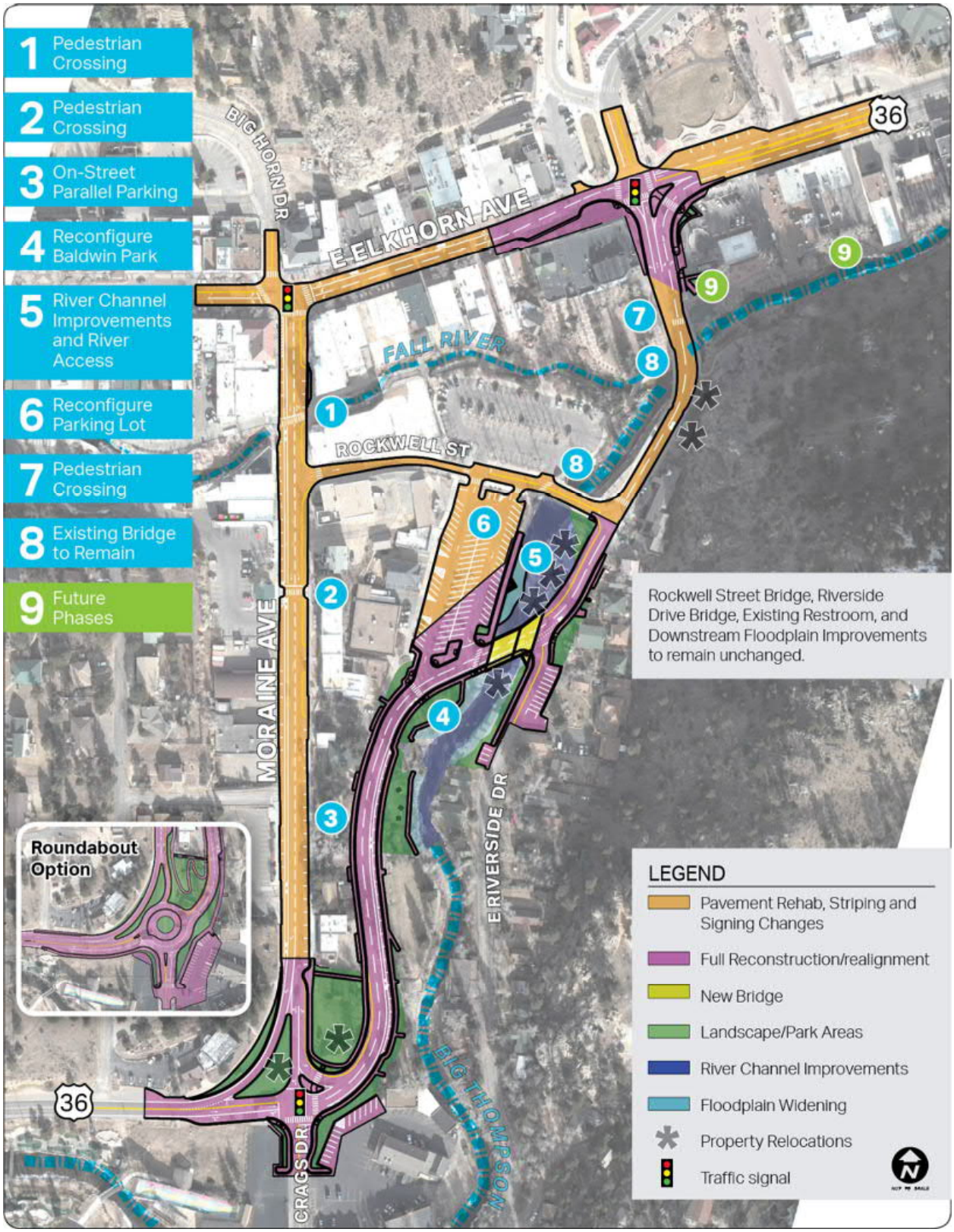
Implementing the Proposed Action is expected to occur in phases due to funding limitations as discussed in Section 2.5 above. An initial phase, Phase 1, would be implemented using the available RAMP and FLAP funding. The Phase 1 implementation would include necessary components to fully implement the one-way couplet configuration. The minimum components of the Phase1 implementation would include:

- Pavement rehabilitation and signing/striping improvements along East Elkhorn Avenue and Moraine Avenue
- New Signalized intersections at Elkhorn Avenue/East Riverside Drive/ Virginia Drive and Elkhorn Avenue/Moraine Avenue/Big Horn Drive
- Reconstructed and reconfigured Moraine Avenue/Crags Drive/West Riverside Drive intersection to either a new signalized intersection or roundabout intersection
- Reconstruction and realignment of West Riverside Drive from the intersection of Moraine Avenue/Crags Drive/West Riverside Drive to 100 feet south of the East Riverside Drive/Rockwell Drive intersection
- Reconstruction of a new Ivy Street Bridge on the Riverside Drives alignment
- Channel and floodplain improvements downstream of Ivy Street to the existing Rockwell Street Bridge
- Pavement rehabilitation and signing/striping improvements along East Riverside Drive from 100 feet south of the East Riverside Drive/Rockwell Intersection to the Elkhorn Avenue/East Riverside Drive/Virginia Drive intersection
- Reconfigured repaved Post Office Parking Lot
- Park replacements and enhancements along Baldwin Park and Big Thompson River
- Full right-of-way acquisitions and relocations of the seven properties identified for full acquisition and relocation as part of the Proposed Action

This set of improvements is referred to as Phase 1. The Phase 1 improvements are shown in Figure 2-13. Based on available funding, Phase 1 construction would begin after right-of-way acquisition is complete. It is anticipated that construction of Phase 1 would begin in fall of 2017 or 2018, depending on the final design schedule and property acquisition duration.

Reconstruction of additional bridges and downstream channel/floodplain improvements are not yet funded but are likely to be built in subsequent phases and could be implemented by agencies other than CFLHD. The Upper Front Range Transportation Planning Region has provided support for Phase 1 and future phases and intends to add a future phase to the regional transportation plan for this project.

Figure 2-13: Phase 1 Improvements



Source: AECOM 2016

CHAPTER 3 TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

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3 AFFECTED ENVIRONMENT, IMPACTS, AND MITIGATION

This chapter describes the natural, cultural, and social resources in the study area and identifies the potential beneficial and adverse effects that the No Action Alternative and Build Alternative (referred to as the Proposed Action) may have on those resources. Analysis includes direct, indirect, and cumulative impacts, defined as follows:

- Direct impacts are caused by "an action and occur at the same time and place" (40 Code of Federal Regulations [CFR] Part 1508.8).
- Indirect impacts "are caused by an action and are later in time or further removed in distance but are still reasonably foreseeable" (40 CFR 1508.8).
- Cumulative impacts, presented in *Section 3.20: Cumulative*, "result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7).

Minimization and mitigation measures are identified for each resource in its respective section. Additionally, the differences in impacts between the signalized intersection and roundabout alternatives at the Riverside Drive/Crags Drive/Moraine Avenue intersection are discussed in the respective sections below.

While the original EA process began with a study area that included improvements to Elkhorn Avenue, Moraine Avenue, and Riverside Drive, the study was expanded to include additional work that could occur in the general area including future phases by others. The Proposed Action in this chapter includes all potential phases, including Phase 1. If impacts and mitigation measures differ between Phase 1 and future phases, these are outlined in Table 3.21-1. The Proposed Action analyzed in this EA consists of the following:

- Funded Phase 1 – CFLHD project CO FLAP 34(1), 36(1) Moraine Avenue and Riverside Drive – reconstruction and realignment of Riverside Drive, reconstruction of the Ivy Street Bridge and associated transportation improvements along Elkhorn and Moraine could be built as part of the currently funded FLAP project (Phase 1). These improvements are funded.
- Future reconstruction of the Rockwell and Riverside Bridges – This will likely occur at some point in the future, however these activities are not currently planned and programmed "projects". There is no identified funding source; CDOT involvement is likely as they will own and maintain the newly constructed Riverside Drive.
- Future channel/floodplain improvements – There is not a currently planned or programmed project that includes these activities; they are not yet funded but are likely to be built in subsequent phases.

3.1 Transportation

This section describes the existing and future transportation conditions for the study area. It describes existing and future traffic demand, transportation impacts of the No Action Alternative and the Proposed Action, their compatibility with existing transportation plans, and proposed mitigation. As noted in *Chapter 2: Alternatives Considered*, the Proposed Action requires a modification to the existing configuration at the Riverside Drive/Crags Drive/Moraine Avenue intersection. There are two options for this intersection including a traditional signalized intersection and a roundabout.

3.1.1 Affected Environment

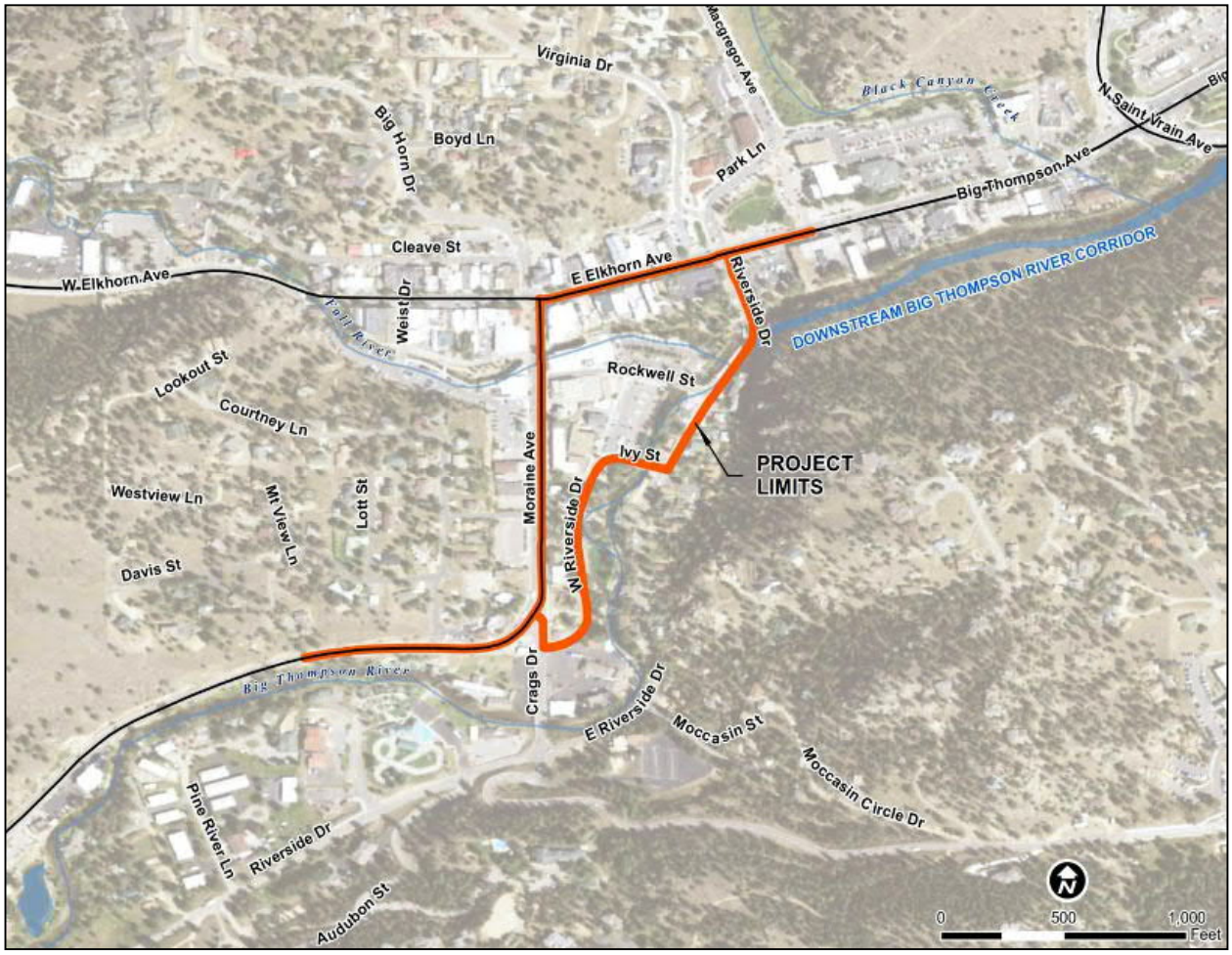
Roadways

The existing roadway network within this study area includes US 34, US 36, and East and West Riverside Drives, as shown on Figure 3.1-1.

- **US 34**
  - **Big Thompson Avenue (US 34)**: This segment of US 34 has an east/west orientation and is classified as a Non-Rural Principal Highway (NR-A) per CDOT east of the US 34/US 36 intersection. US 34 is a major regional roadway that provides connectivity from the Rocky Mountain National Park (RMNP) to the west of town, through Estes Park, through the City of Loveland, and on to the east of Interstate 25. The posted speed limit is 35 miles per hour (mph) through the study area.
  - **Wonderview Avenue (US 34)**: This portion of US 34 is classified as an NR-A and has a posted speed limit of 40 mph, north of the US 34/US 36 intersection. It serves as a bypass around downtown Estes Park for traffic destined to RMNP's Fall River entrance.
- **US 36**
  - **Elkhorn Avenue (US 36)**: This portion of US 36 through the study area extends west of the intersection of US 34/US 36 and Wonderview to the Moraine Avenue intersection and is classified as a Non-Rural Arterial (NR-C). The posted speed limit is 25 mph through the study area.
  - **Moraine Avenue (US 36)**: This portion of US 36 (Moraine Avenue) south of the intersection of Elkhorn Avenue/Moraine Avenue is classified as an NR-A. It serves as the main access through downtown Estes Park for traffic destined to the Beaver Meadows entrance to RMNP. The posted speed limit is 25 mph in downtown.
  - **North St. Vrain Avenue (US 36)**: East of its intersection with Big Thompson and Wonderview Avenues (US 34), US 36 is classified as an NR-A. US 36 provides connectivity between Estes Park, the City of Lyons and the City of Boulder. The posted speed limit is 35 mph south of the intersection of US 34/US 36.
- **East and West Riverside Drives**: Both Riverside Drives are local roadways on the south side of downtown Estes Park. The roads run north/south on each side of the Big Thompson River. In conjunction with Rockwell Street, East Riverside Drive provides a short-cut through downtown Estes Park for traffic leaving RMNP. The posted speed limit

is 25 mph through the study area. It also provides access to the residential and commercial property, parks and open space, and a large public parking area (post office parking lot) in the downtown area. It is a mix of urban infrastructure and natural environment.

Figure 3.1-1: Downtown Estes Park Loop Study Area



Source: FHU, 2016.

Existing Traffic and Traffic Operations Analysis

Traffic operations were analyzed within the study area based on the calibrated weekend traffic volumes and existing weekday commuter traffic volumes. Synchro and the *Highway Capacity Manual* (HCM) (Transportation Research Board 2010) were used to analyze the signalized and unsignalized intersections within the study area. Operational conditions are graded in accordance to the criteria established in the HCM. This manual establishes six levels of service (LOSs): Level A (“FreeFlow”) to Level F (“Fully Saturated”). LOSs are measures of traffic flow that consider such factors as speed, delay, traffic interruptions, safety, driver comfort, and density.

LOS thresholds and criteria vary depending on the type of facility being evaluated. For intersections, the LOS criteria are based on the amount of delay according to the type of traffic

control device used at the intersection. Table 3.1-1 summarizes the LOS thresholds for all intersections evaluated within the study area.

Table 3.1-1: Level of Service Definition

LOS	Control Delay per Vehicle (seconds/vehicle)	
	Signalized Intersection	Unsignalized Intersection
A	≤ 10	0-10
B	> 10-20	> 10-15
C	> 20-35	> 15-25
D	> 35-55	> 25-35
E	> 55-80	> 35-50
F	> 80	> 50

Note: Roundabouts are analyzed under unsignalized intersection criteria.
Source: Transportation Research Board, 2010.

Weekend (Visitor Peak) Existing Traffic Volumes

Two automatic traffic recorder (ATR) stations have been collecting traffic counts since 1999. One is on US 36 and one is on US 34 east of Mall Road. Both the stations record each hour of each day throughout the year. This information provides an almost complete record of traffic entering and leaving the Estes Valley to the east. RMNP also provided the project team with visitor counts (daily, yearly, and monthly) at the entrance stations. These counts were utilized to calibrate the traffic data to today's existing conditions.

This EA also used turning movement vehicle and pedestrian counts that were collected at the major intersections in downtown Estes Park in 2015, 2011, 2009, 2008, and 2001 (2001 counts were found in the 2003 *Estes Valley Transportation Alternatives Study*). Vehicle and pedestrian turning movement counts were taken in October 2014 at the intersections of Riverside Drive/Rockwell Street and Riverside Drive/Ivy Street to collect travel pattern data that had not previously been collected. Additional pedestrian counts were completed at the Riverwalk crosswalks on Moraine Avenue and Riverside Drive in October 2014.

To calibrate the analyses of traffic to today's weekend conditions, a design hourly volume (DHV) was selected, using the 30th highest hour volume in the year *(AASHTO A Policy on Geometric Design of Highways and Streets,* 6th Edition, Chapter 2*)*. Year 2011 data was used due to the completeness of the data collection from the two ATRs. Additionally, using 2011 ATR data provided a comparison to the most recent turning movement counts collected at the Elkhorn/Moraine and US 36/US 34 intersections. ATR data was incomplete in 2012 due to equipment failure in July (during the peak visitor season). ATR data for 2013 and 2014 was impacted by the flooding of September 2013 and heavy construction and public delays on Bear Lake Road in 2014.

Sunday, June 26, 2011 from 2:00 PM to 3:00 PM was the 30th highest hourly volume, which is considered the design hourly volume. The DHV was approximately 9.4% of the daily volume on June 26, 2011. The DHV is used to calibrate the collected traffic volumes to an existing conditions scenario. The turning movement data were collected on July 2, 2011 which is the 107th highest hourly volume of the year (72.02 percent). It was increased approximately 10 percent to represent the 30th highest hourly volume for 2011.

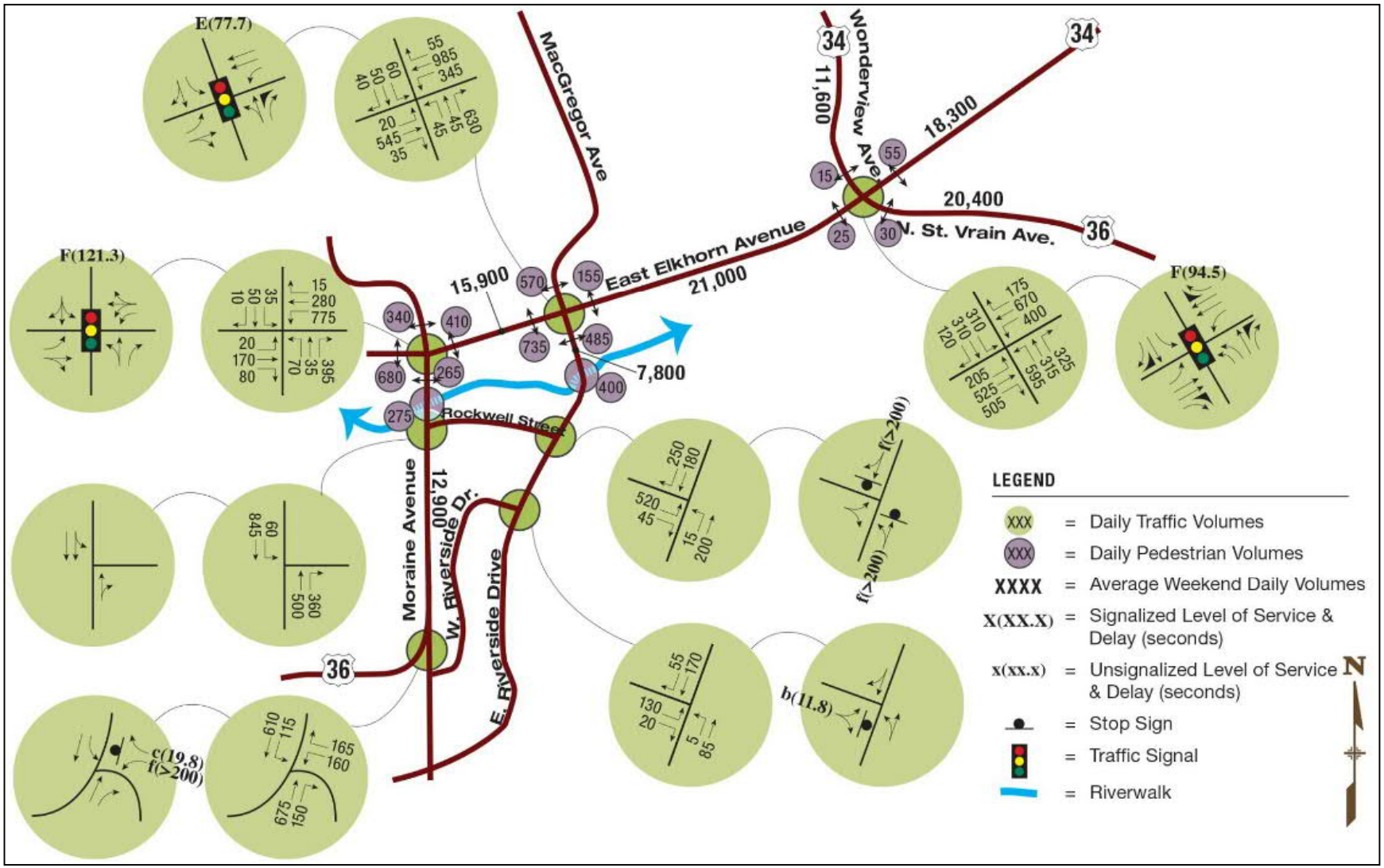
After calibrating to the DHV using 2011 traffic volumes, additional growth was applied to represent 2014 adjusted traffic volumes. Further adjustments to the 2014 traffic volumes were needed because the study area's intersections have been operating with vehicular demand at or above capacity during peak periods since before 2001. Peak hour traffic volumes have not varied significantly since then and the capacity of the intersections has not substantially changed. The increase in volumes has resulted in longer backups of cars waiting to get through congested intersections. To determine the level of "unmet demand" during each specific peak hour in downtown Estes Park, ATR data were reviewed to identify the amount of traffic entering the Estes Valley from the east. These volumes were compared with the downtown turning movement data to identify the amount of traffic that arrives into the valley without being processed efficiently through the major downtown intersections.

Based on this analysis, approximately 20 percent of the traffic at specific high demand turning movements at the downtown intersection experience "unmet demand." Therefore, specific turning movement volumes were increased to capture the additional traffic that degrades the downtown intersections but cannot be captured in turning movement traffic counts. Adjusted movements included the northbound right-turn at the Elkhorn/Riverside intersection and the westbound left-turn and northbound right-turn at the Elkhorn/Moraine intersection. The 2014 adjusted traffic volumes are shown on Figure 3.1-2. During the peak summer hour of 1:00 to 2:00 PM, traffic is primarily westbound heading to RMNP from US 34 and US 36. Visitors to the park utilize Elkhorn Avenue to Moraine Avenue to access the Beaver Meadows entrance. The left-turn movement at the intersection of Elkhorn/Moraine sees an average of 775 vehicles per hour (vph). Previous studies over the last decade have shown counted left turn volumes ranging from 430 to 589 at different times of the year. The 775 left turn vehicles account for the unmet demand for left turn volumes at this intersection, and represent the total traffic that could reach the intersection, and the basis for establishing future year traffic volumes.

In addition to traffic to/from RMNP, there are many visitors who come to downtown Estes Park, only. These visitors circulate downtown for parking, as shown by movements like the northbound left-turn (45 vph – recirculation traffic incorporated) and westbound left-turn (345 vph – downtown circulation traffic incorporated) at the Elkhorn/Riverside intersection, as shown on Figure 3.1-2. Traffic also utilizes Rockwell Street for parking and exiting RMNP.

As shown on Figure 3.1-2, weekend traffic is very congested, and during the peak summer season in downtown Estes Park, the study area's main intersections operate at LOS E or F. Additionally, control delays at signalized intersections and certain movements at stop controlled intersections far exceed the typical LOS F delays of 80 sec/veh.

Figure 3.1-2: Existing (2014) Saturday Peak Summer Season Traffic Volumes



Source: FHU, 2016.

Elkhorn/Moraine Intersection

The intersection of Elkhorn Avenue and Moraine Avenue acts as the bottleneck in downtown Estes Park and has been operating over capacity for many years during peak periods. This over-capacity condition translates into long backups along westbound Elkhorn Avenue throughout downtown that at times queue past the intersection of US 34/US 36. Later in the day, eastbound traffic on Moraine Avenue can also experience long backups getting into downtown. The main over-capacity movements at the intersection of Elkhorn Avenue and Moraine Avenue are the westbound left-turn movement (775 vph) and northbound right-turn movement (395 vph). These two movements primarily consist of vehicles using the main access to/from RMNP.

Elkhorn/Riverside Intersection

The intersection of Elkhorn Avenue and Riverside Drive does not have as many operational issues as the intersection of Elkhorn Avenue and Moraine Avenue but remains congested with operations at LOS E during peak periods of the day. Part of the congestion on Elkhorn Avenue is related to the spill back from the intersection with Moraine Avenue but additional interactions between vehicular traffic and pedestrians add to the congestion and delay at this intersection. Field visits confirm that when there is a green signal phase provided for the westbound through movement, queues from the Elkhorn/Moraine intersection already back up into the Elkhorn Avenue/Riverside Drive intersection and prevent traffic from continuing westbound. Similarly, the northbound Riverside Drive right-turn movement (to eastbound Elkhorn Avenue/US 36) competes with pedestrians at the crosswalk, causing vehicular delays for eastbound US 36 traffic heading out of Estes Park.

US 34/US 36 Intersection

The intersection of US 34 and US 36 is east of downtown, but is the main point of convergence of traffic entering and exiting Estes Park. The Estes Park Visitor Center (EPVC) is east of the intersection on US 34 (Big Thompson Avenue) and is where the Riverwalk starts. Traffic at this intersection operates at LOS F during peak periods. Key movements at the intersection are the westbound (US 34) through movement, northbound (US 36) left-turn movement, and eastbound through movement.

Other Sources of Congestion

Parking is limited and some vehicles are required to circulate downtown searching for parking, which adds to the congestion. Specifically, vehicles circulate along Rockwell Street and Riverside Drive. Also, vehicles looking for parking will travel west on Elkhorn Avenue to access parking on the west side of downtown, only to end up traveling east again to the EPVC or satellite parking lots.

Weekday (Commuter Peak) Existing Traffic Volumes

In addition to evaluating the visitor peak congestion in Estes Park, existing weekday traffic volumes were collected in early June 2015. The turning movement data collection was completed for the morning (7:00 AM – 9:00 AM) and evening (4:00 PM – 6:00 PM) peak periods, and included the following intersections:

- US 34/US 36

- Elkhorn Avenue/Riverside Drive
- Elkhorn Avenue/Moraine Avenue
- Moraine Avenue/Rockwell Street
- Moraine Avenue/Crags Drive
- Riverside Drive/Rockwell Street
- East Riverside Drive/West Riverside Drive

Additionally, 24-hour counts were collected at five locations:

- Elkhorn Avenue (Between Moraine Avenue and Riverside Drive)
- Moraine Avenue (South of Rockwell Street)
- Riverside Drive (North of Rockwell Street)
- West Riverside Drive (South of parking lots)
- Rockwell Street

Unlike the weekend visitor peak traffic volumes, the morning and evening peak hours were not adjusted for the 30th highest hour of the year because this analysis focused on evaluation of the typical weekday commuter traffic patterns.

No distinct directional pattern for the weekday morning peak hour during the peak visitor season weekends can be found. The evening peak hour has a somewhat more distinct directional pattern that includes RMNP visitors exiting in the evenings and commuter traffic entering/exiting the Estes Park downtown area.

During the weekday AM peak hour, traffic operations are LOS C or better at both the signalized and unsignalized intersections within the study area. There are very few pedestrian conflicts during the AM peak hour as well. US 34/US 36 is the most heavily utilized intersection during the AM peak hour since it is a funneling point for inbound commuter traffic to the Estes Park area.

During the weekday PM peak hour, traffic operations operate at LOS D or better at both the signalized and unsignalized intersections within the study area, with the exception of the westbound left-turn movement at Moraine Avenue/Crags Drive that operates at LOS E. The pedestrian volumes are higher in the PM peak hour in downtown but are not as significant as the weekend pedestrian traffic. Figures illustrating weekday AM and PM peak period traffic counts and LOS, are contained in the *Traffic Conditions Technical Report*, Volume 3.

Safety

An analysis of safety was completed for a five-year period from January 1, 2009 to December 31, 2013. This safety analysis covered the main intersections within the study area along US 34, US 36, and Riverside Drive. It focused on understanding the magnitude and nature of any safety problems within the project limits and related crash causality to roadway geometrics, roadside features, traffic control devices, traffic operations, driver behavior, and vehicle type.

The following seven intersections were examined:

- US 34/US 36
- Elkhorn Avenue/Riverside Drive

- Elkhorn Avenue/Moraine Avenue
- Moraine Avenue/Rockwell Street
- Moraine Avenue/Crags Drive
- East Riverside Drive/Rockwell Street
- East Riverside Drive/West Riverside Drive

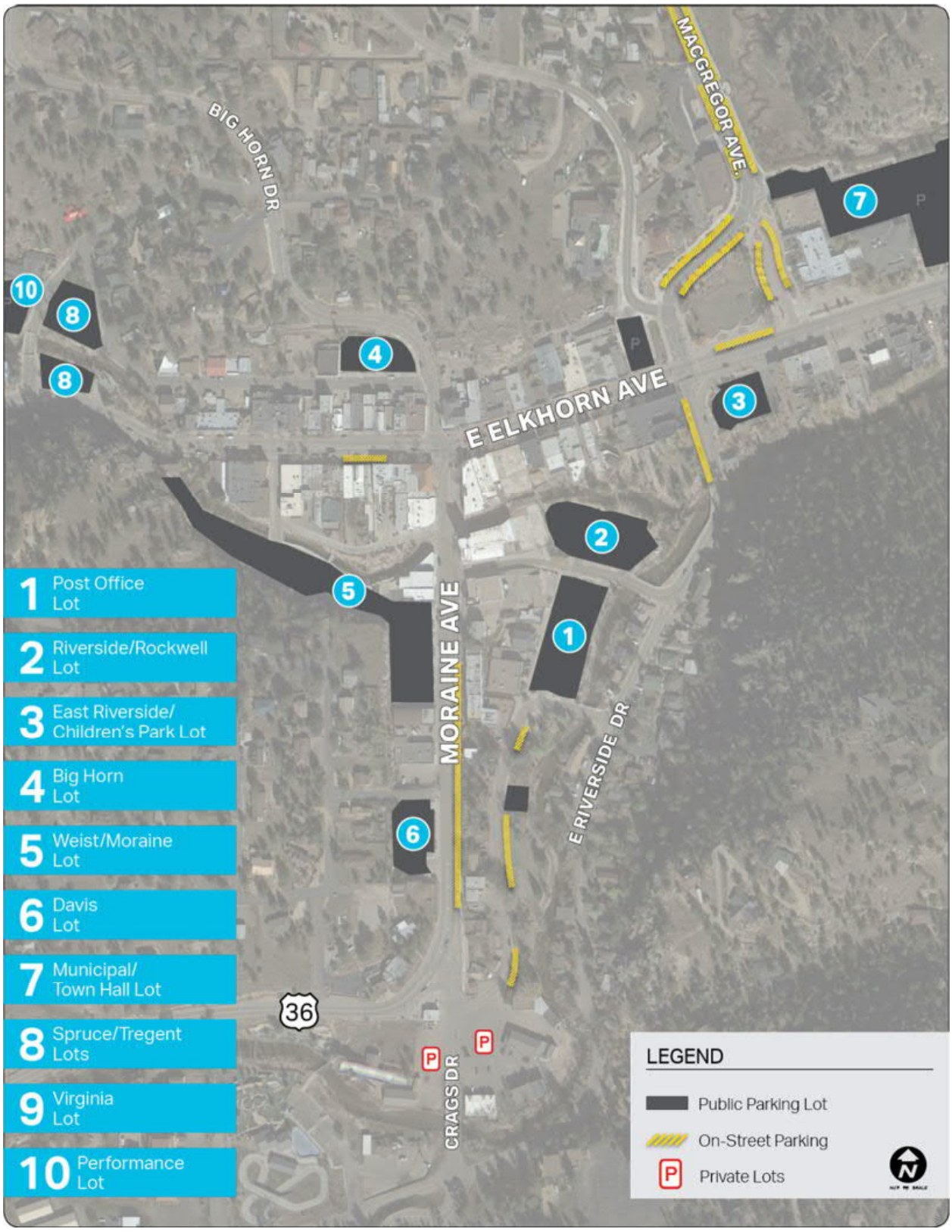
The magnitude of safety problems at the intersections can be accessed through the use of Safety Performance Functions (SPFs). SPFs reflect the complex relationship between exposure (measured in ADT on all legs of the intersection) and the crash count for an intersection measured in crashes per year. The SPF models provide an estimate of the normal or expected crash frequency and severity of a range of ADT among similar intersection facilities on CDOT roadways.

A total of 75 crashes (including 8 with injuries) at the seven intersections were evaluated. The results of this analysis indicated no correctable patterns. A detailed look at each of the intersections that were evaluated may be found in the *Traffic Conditions Technical Report*, Volume 3.

Parking

There are approximately 1,388 public parking spaces in downtown Estes Park. This includes on-street parking as well as parking located within the Baldwin Park parking lot. This number does not include parking east of the downtown at the Estes Park Visitor Center or Fairgrounds Park and Ride. It also does not include private parking spaces in privately owned lots within the downtown. Figure 3.1-3 shows public and private parking lots in downtown Estes Park.

Figure 3.1-3: Existing Public and Private Parking Lots in Downtown Estes Park



Transit

Transit in Estes Park consists of two shuttle systems that operate during the peak visitor season (late June to mid September): the Town of Estes Park system and the RMNP system.

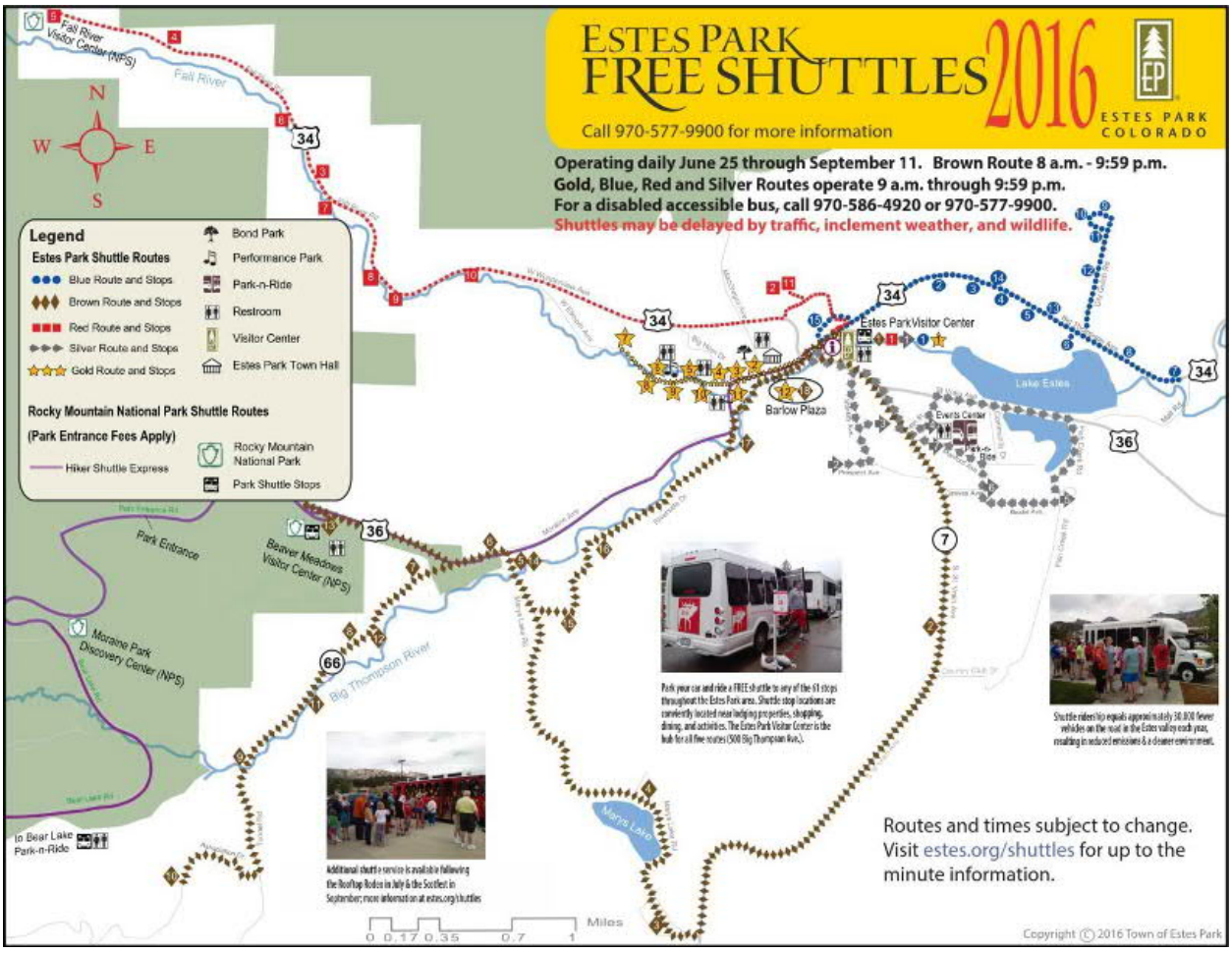
Estes Park Free Shuttle Bus System

Estes Park provides a free, five-route shuttle system that provides access to the major attractions throughout the town. A wheelchair-accessible bus is also available, but must be called. The largest parking area is the Park and Ride stop at the Estes Park Events Complex (1209 Manford Avenue). The EPVC (500 Big Thompson Avenue) also provides a parking area and access to all five town shuttles, as well as the RMNP hiker shuttle. All Estes Park shuttles link to the RMNP hiker shuttle. Each route is described below and shown graphically on Figure 3.1-4.

- Blue Route
  - Operates along eastern US 34, Wonderview Avenue, and Dry Gulch Road
  - Stops include: EPVC, Stanley Village (groceries, retail, and dining), east US 34/Big Thompson Avenue lodging and along Dry Gulch Road
- Brown Route
  - Operates along Riverside Drive, US 36/Moraine Avenue, SH 66, Mary's Lake Road, State Highway (SH) 7/St. Vrain Avenue, and Peakview Drive
  - Stops include: EPVC, Barlow Plaza, Riverside Drive, RMNP Beaver Meadows Visitor Center, National Park Village, YMCA of the Rockies, Mary's Lake Campground, and Mary's Lake Lodge
- Red Route
  - Operates along US 34/Wonderview Avenue and Fall River Road
  - Stops include: EPVC, lodging along Fall River Road/US 34, RMNP Fall River Visitor Center, and the Stanley Hotel
- Silver Route
  - Operates along St. Vrain Avenue/SH 7, Fish Creek Road, Brodie Avenue, Community Drive, Manford Avenue, Stanley Avenue, and Prospect Avenue
  - Stops include: Fairgrounds Park and Ride, EPVC, Estes Park Conference Center and Fish Creek Road lodging, the Estes Park Events Center, and the Estes Park Medical Center
- Gold Route
  - Operates along Elkhorn Avenue and Big Thompson Avenue
  - Stops include: EPVC and downtown – Bond Park, Tregent Park, Performance Park, Moraine Avenue and Barlow Plaza

All shuttles operate from 9:00 AM to 10:00 PM with the exception of the Brown route, which operates from 8:00 AM to 10:00 PM.

Figure 3.1-4: Estes Park Free Shuttle System



Source: Town of Estes Park, 2016.

RMNP Free Park Shuttle

During summer months, the park operates a free shuttle bus along Bear Lake Road. Most buses are accessible to riders in wheelchairs. The free shuttle helps to reduce vehicle emissions, distracted driving in the park, and the reliance on crowded parking areas.

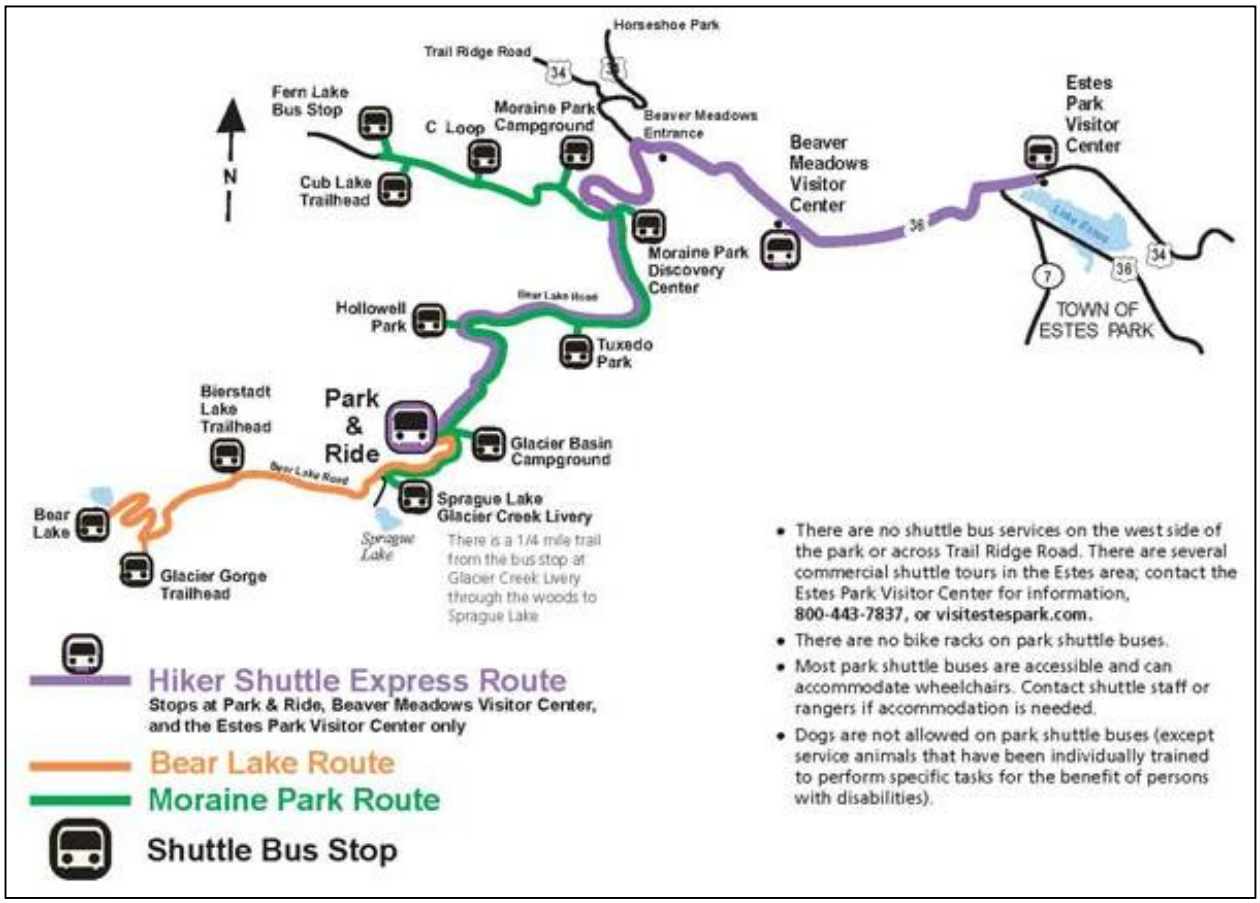
Each route is described below and shown graphically on Figure 3.1-5.

- Moraine Park Route
  - Operates between Park and Ride and Fern Lake Bus Stop
  - Leaves from Park and Ride every 30 minutes from 7:00 AM to 7:00 PM
  - Stops Include: Park and Ride, Sprague Lake/Glacier Creek Livery, Hollowell Park, Tuxedo Park, Moraine Park Visitor Center, Moraine Park Campground (C-Loop), Cub Lake Trailhead, and Fern Lake Bus Stop
- Bear Lake Route
  - Operates between Park and Ride and Bear Lake
  - Leaves Park and Ride every 10-15 minutes from 7:00 AM to 7:00 PM

- Stops include: Park and Ride, Bierstadt Lake Trailhead, Glacier Gorge Trailhead, and Bear Lake

- Hiker Shuttle Route: Town of Estes Park and RMNP
  - First bus leaves the EPVC at 7:30 AM and last bus leaves Park and Ride at 8:00 PM
  - Hiker Shuttle runs on an hourly schedule early and late in the day, switching to a half-hour schedule from 11:00 AM to 6:00 PM
  - Stops include: EPVC, Beaver Meadows Visitor Center, and Park and Ride

Figure 3.1-5: RMNP Shuttle System



Source: RMNP, 2016.

Pedestrian and Bicycle

Downtown Estes Park regularly experiences high volumes of pedestrians along Elkhorn Avenue and the Riverwalk. There are sidewalks along Elkhorn Avenue, Moraine Avenue, Rockwell Street, and portions of Riverside Drive. The Riverwalk currently extends along the Big Thompson River and Fall River through downtown from the EPVC near the intersection of US 34/US 36 and continues west past downtown. The Riverwalk has at-grade pedestrian crossings on Moraine Avenue and Riverside Drive south of Elkhorn Avenue.

Few bicycle facilities exist within the study area. Bike lanes are not currently provided on any of the streets in downtown Estes Park. Additionally, bicyclists are asked to dismount and walk

bikes on the downtown portion of the Riverwalk. Trails (concrete or hard surface) in the vicinity of downtown Estes Park include:

- Lake Estes Trail (Pedestrians and Bicycles)
- US 34 Trail (Pedestrians and Bicycles)
- Fish Creek Trail (Pedestrians and Bicycles)
- SH 7 Trail (Pedestrians and Bicycles)

Pedestrian volumes are significant at many of the study area intersections and the Riverwalk crossings, especially during the weekend (visitor peak), and weekday evening (commuter peak) time periods. Daily pedestrian volumes are highest at the Moraine Avenue/East Elkhorn Avenue and Riverside Drive/East Elkhorn Avenue intersections for both time periods. As shown on Figure 3.1-2, numbers at these two intersections range between 155 and 735 for weekends. This represents a significant amount of pedestrian activity through downtown Estes Park. It should also be noted that in July 2015, CDOT and the Town completed a demonstration project that evaluated the Barnes Dance (as described in *Chapter 1: Purpose and Need*) where pedestrian counts were as high as 2,600 per hour. While these numbers were not used in the model, it is clear that there are often very robust amounts of pedestrians in the area. The Barnes Dance was permanently reintroduced on May 27, 2016 at the Elkhorn/Moraine and Elkhorn/Riverside intersections. A more thorough discussion of the pedestrian movements may be found in the *Traffic Conditions Technical Report*, Volume 3.

3.1.2 Environmental Consequences

Future Traffic Projections

The project team used a combination of CDOT's growth rates and the North Front Range Metropolitan Planning Organization (NFRMPO) Transportation Model as the basis for developing 2018 (opening year) and 2040 (design year – also known as horizon year) forecasts. Table 3.1-2 shows the key locations and corresponding growth rates for 2040 which were than adjusted for 2018 opening year.

CDOT's traffic growth rates are based on historic data, and the NFRMPO model is based on forecasts of employment and households. The analysis accounted for the fact that CDOT growth rates in downtown Estes Park are lower due to the existing constraints of the congestion that suppresses travel in the downtown area.

Table 3.1-2: 2040 Traffic Growth Rates

Route	Description	CDOT Factor	NFR MPO Factor	Average
US 34A	Wonderview Avenue north of US 36	1.26	3.00	2.13
US 34A	Big Thompson Avenue, west of Mall Road	1.31	3.78	1.54
US 34C	Elkhorn Avenue, west of Moraine Avenue	1.10	1.67	1.38
US 34C	Elkhorn Avenue, west of Virginia Drive	1.15	1.67	1.41
US 36A	South of Moraine Avenue/Elkhorn Avenue Intersection	1.40	1.33	1.36
US 36B	North St. Vrain Avenue, west of Mall Road	1.59	2.00	1.80

Source: FHU, 2016.

The National Cooperative Highway Research Program (NCHRP) *765 Analytical Travel Forecasting Approaches for Project-Level Planning Design* process was used to refine the model outputs. This process uses model growth and observed counts to arrive at a final set of traffic demands.

No Action Alternative

Roadways

The No Action Alternative reflects the future conditions should no improvements be completed to the downtown Estes Park study intersections. The No Action Alternative is also used as a baseline comparison for alternatives development and screening.

In 2013, Town Public Works staff presented the need for additional funding to slow the decay of street infrastructure. The Ballot Issue 1A sales tax initiative was passed by voters on the April 2014 ballot. Sixty percent of this new revenue is directed to street repairs and 12.5 percent is slated for trail expansion work. This new funding stream is projected to generate about $300,000 for trail expansion and $1.44 million annually for street repairs for the 10-year period that ends in 2024. In 2016, more than 50 miles of crack sealing work (at a cost of $200,000), five miles of chip seal resurfacing ($400,000), about one mile of asphalt overlays and patching ($300,000), and the $3.9 million Dry Gulch Road/US 34 intersection realignment, roadway rehabilitation, drainage improvements, and trail expansion work will be completed.

Figure 3.1-6 and Figure 3.1-7 illustrate the 2018 and 2040 No Action Alternative traffic and pedestrian volumes and LOS (existing intersections and street system), respectively. Delay information is also provided on the figures. Table 3.1-3 compares the existing (2014), opening year (2018) and design year (2040) traffic operations including delay and LOS for Saturday peak summer season, AM commuter peak hour, and PM commuter peak hour.

Table 3.1-3: Comparison of Delay and LOS for No Action Alternative

Intersection	Existing Delay (sec/veh)	Existing LOS	2018 Delay (sec/veh)	2018 LOS	2040 Delay (sec/veh)	2040 LOS
Saturday Peak Summer Season						
US 34/US 36	94.5	F	66.8	E	166.4	F
Elkhorn/Riverside	77.7	E	102.5	F	86.5	F
Elkhorn/Moraine	121.3	F	146.0	F	298.9	F
Riverside/Crags/Moraine	>200*	F	>200	F	>200	F
AM Commuter Peak Hour						
US 34/US 36	23.8	C	27.9	C	36.0	D
Elkhorn/Riverside	7.6	A	8.3	A	25.7	C
Elkhorn/Moraine	19.9	B	20.1	C	39.3	D
Riverside/Crags/Moraine	16.5*	C	17.5	F	>200	F
PM Commuter Peak Hour						
US 34/US 36	38.0	D	34.0	C	71.8	E
Elkhorn/Riverside	18.1	B	21.6	C	26.4	C
Elkhorn/Moraine	23.1	C	23.1	C	46.0	D
Riverside/Crags/Moraine	35.5*	E	43.0	E	>200	F

Source: FHU, 2016.

Note: *- Riverside/Crags/Moraine intersection shows the delay and LOS of the worst turning movement (from stop controlled Riverside to Moraine).

Safety

Safety for both pedestrians and drivers would remain similar to what is experienced today, as no safety measures would be implemented as part of the No Action Alternative.

Parking

There would be no impacts to parking under the No Action Alternative, as the number of available spaces and the location of parking would not change.

School Bus Routes

School bus routes would continue to be evaluated annually as they are today, as there would be no changes to the roadway network under the No Action Alternative.

Compatibility with Local Plans

The No Action Alternative is not compatible with the local planning that has occurred over the past decade, as there is a Town wide understanding that congestion has become a major issue within the downtown area of Estes Park, especially during the summer months.

Transit

While minor on-going transit modifications are expected to be made by both transit services that operate in the Estes Valley on a regular basis, no major transit changes are proposed as part of the No Action Alternative.

However, separate from this project, the Town of Estes Park and its Shuttle Committee are considering the preparation of a shuttle service grant application to submit to CDOT, with the hope of securing additional funding to operate year round in the future. CDOT allocates Federal

Transportation Administration (FTA) funds to rural communities for expenses related to offering community transit services throughout the year. The Town currently offers free shuttle service from late June through mid-September, and the grant would allow the Town to operate the service on a limited basis between October and May.

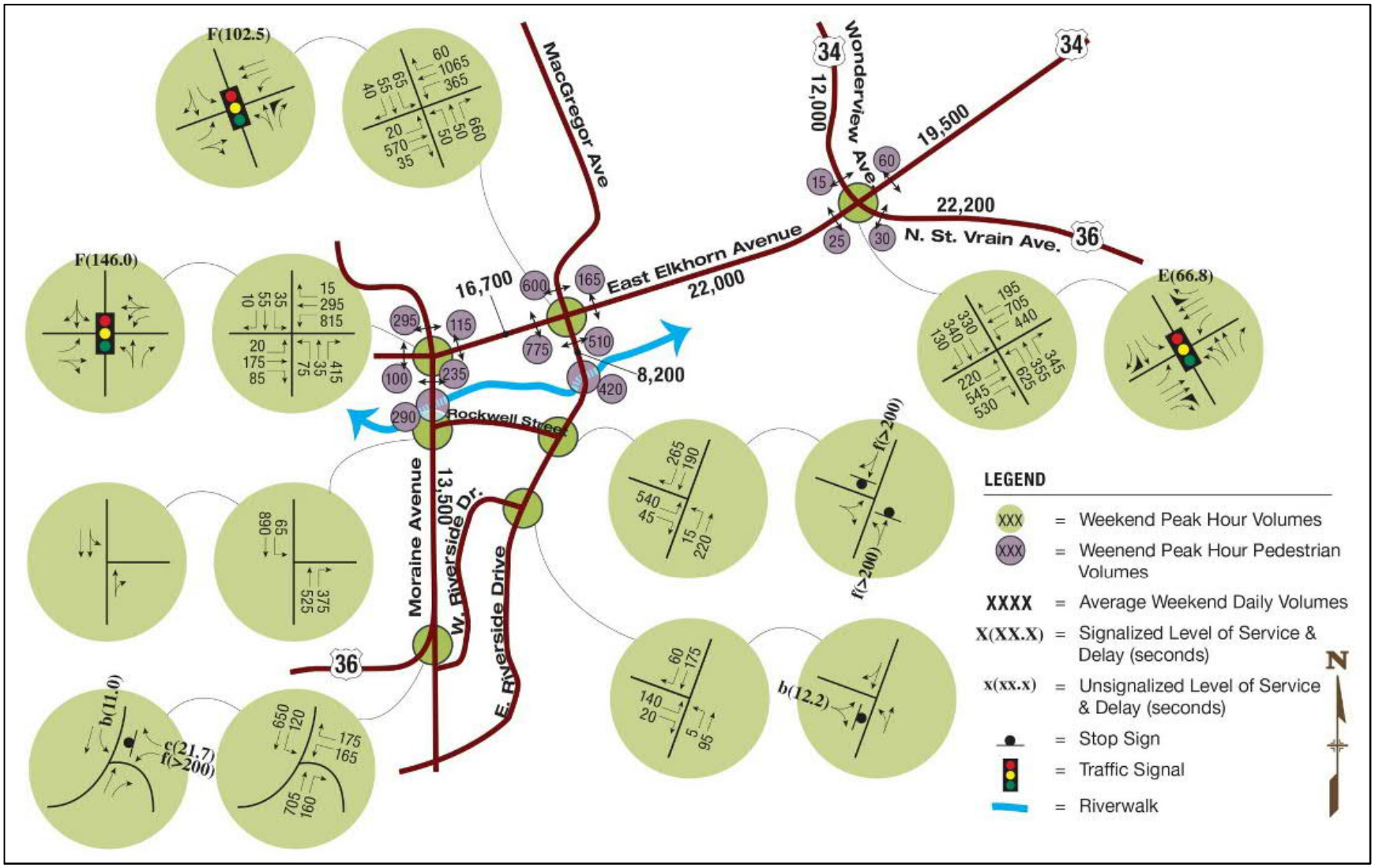
Pedestrian and Bicycle

Pedestrian counts would likely remain similar to what is experienced today, as no new facilities would be introduced under the No Action Alternative.

Construction

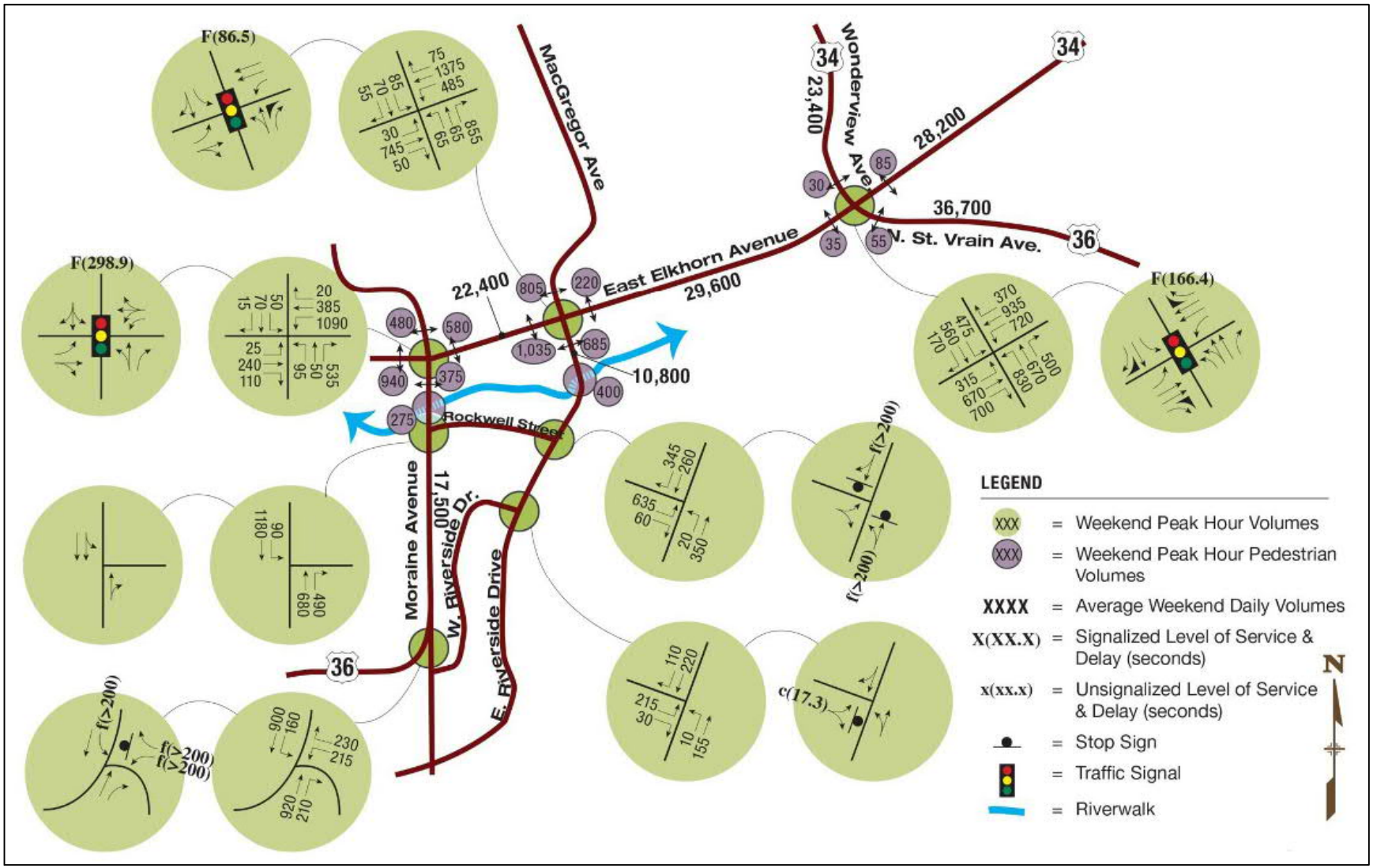
There would be no construction impacts for this project under the No Action

Figure 3.1-6: No Action 2018 Saturday Peak Summer Season Traffic Volumes and LOS



Source: FHU, 2016.

Figure 3.1-7: No Action 2040 Saturday Peak Summer Season Traffic Volumes and LOS



Source: FHU, 2016.

Proposed Action

The Proposed Action involves the conversion of Elkhorn Avenue, Moraine Avenue, and Riverside Drive into a one-way couplet, as shown on Figure 3.1-7.

Roadways

Riverside Drive Reconstruction: Portions of West and East Riverside Drive would be completely reconstructed. This reconstruction would require reconfiguring the Moraine Avenue/Crags Drive/West Riverside Drive intersection to a roundabout or signalized intersection and lowering the elevation of the road and matching the new grade along the approaches to the intersection to facilitate connections and private property access. Portions of West Riverside Drive would be realigned while holding the western edge and access configurations in place south of Ivy Street. A new bridge at Ivy Street would be required to accommodate the new alignment.

Roadway Reconfiguration: Elkhorn Avenue (US 36), Moraine Avenue (US 36) and portions of West and East Riverside Drive would be converted from two-way streets to two-lane one-way streets signed at 25 mph to form a counterclockwise couplet. Signals at the intersections of Elkhorn/Riverside and Elkhorn/Moraine would be reconfigured or reconstructed, and a new intersection geometry would be added at the Moraine Avenue/Crags Drive/West Riverside Drive intersection.

Segment 1 US 34/US 36 Intersection to Elkhorn/Riverside: This roadway segment would be improved with pavement rehabilitation and restriping, but it would remain a two-way roadway with the same lane configuration.

Segment 2 Elkhorn Avenue (US 36) from East Riverside Drive to Moraine Avenue: Currently this roadway provides two lanes westbound and one lane eastbound with curb and gutter and attached sidewalk/streetscape. The Proposed Action would reconfigure this segment by restriping to two lanes in a one-way configuration in the westbound direction expanding, to two left-turn lanes and one through/right-turn/sharrow lane at the Moraine Avenue intersection.

Segment 3 Moraine Avenue (US 36) from Elkhorn Avenue to Crags Drive/West Riverside Drive: Currently this roadway provides two lanes southbound and one lane northbound. The travel way widens to include an additional northbound lane from Rockwell Street to Elkhorn Avenue. The Proposed Action would reconfigure this segment by restriping to two lanes in a one-way configuration in the southbound direction.

Segment 4 West Riverside Drive/Ivy Street/East Riverside Drive (Moraine Avenue to Elkhorn Avenue): Currently these three independent roadways are two lanes in each direction with Ivy Street connecting West Riverside Drive to East Riverside Drive south of the Post Office Parking lot. The Proposed Action would reconstruct and reconfigure these roadways into a continouous alignment from the Moraine/Crags/Riverside intersection to the Elkhorn/Riverside intersection. This would include reconstructing and realigning the roadway with a 25-mph deisgn speed. East Riverside Drive would tee into the new continuous loop alignment with a right-in/right-out configuration. Vehicles would be able to turn right from the loop alignment to East Riverside Drive and right from East Riverside Drive to the loop alignment northbound. Similarly at Rockwell a left in/left-out configuration will be provided. Vehicles will be able to turn from the

loop alignment left to Rockwell, and turn left from Rockwell to the loop alignment northbound. Two intersection configurations are being considered at Moraine Avenue/Crags River/West Riverside Drive. These include:

- **Signalized Intersection Option**: Creates a signalized intersection at Riverside Drive/Crags Drive/Moraine Avenue to provide eastbound Moraine Avenue traffic a through movement to the West Riverside Drive segment, which would become the eastbound section of US 36 through Estes Park.
- **Roundabout Option**: Creates a roundabout at the Riverside Drive/Crags Drive/Moraine Avenue to provide continuous traffic flow at this intersection.

Segment 5 Rockwell Street from Moraine Avenue to East Riverside Drive: Currently Rockwell Street is one lane, one-way from Moraine Avenue for approximately 250 feet to the existing adjacent public parking lots, then one lane eastbound and westbound to East Riverside Drive. The Proposed Action will keep this configuration; however, the existing bridge would need to be replaced (by a future, currently unfunded project) in order to increase the hydraulic capacity as it is within the 100-year regulated floodplain.

Figure 3.1-8 and Figure 3.1-9 illustrate the 2018 and 2040 Proposed Action traffic and pedestrian volumes and LOS (existing intersections and street system), respectively. Delay information is also provided on the figures. Table 3.1-4 compares the existing (2014), opening year (2018) and horizon year (2040) traffic operations including delay and LOS for Saturday peak summer season, AM commuter peak hour, and PM commuter peak hour for the Proposed Action. Table 3.1-5 compares the No Action and Proposed Action Alternatives for the opening year and horizon year.

Table 3.1-4: Comparison of Delay and LOS for Proposed Action

Intersection	2018 Delay (sec/veh)	2018 LOS	2040 Delay (sec/veh)	2040 LOS
Saturday Peak Summer Season				
US 34/US 36	54.2	D	168.9	F
Elkhorn/Riverside	15.7	B	44.2	D
Elkhorn/Moraine	29.3	C	68.5	E
Riverside/Crags/Moraine (signalized intersection)	24.0	C	33.8	C
Riverside/Crags/Moraine (roundabout) +	7.8	A	26.0	D
AM Commuter Peak Hour				
US 34/US 36	23.9	C	36.1	D
Elkhorn/Riverside	17.5	B	13.6	B
Elkhorn/Moraine	17.3	B	17.5	B
Riverside/Crags/Moraine (signalized intersection)	19.1	B	18.1	B
Riverside/Crags/Moraine (roundabout) +	3.3	A	3.7	A
PM Commuter Peak Hour				
US 34/US 36	29.6	C	70.2	E
Elkhorn/Riverside	13.6	B	15.2	B
Elkhorn/Moraine	25.5	C	32.2	C
Riverside/Crags/Moraine (signalized intersection)	20.1	B	24.9	C
Riverside/Crags/Moraine (roundabout) +	6.8	A	10.0	A

Source: FHU 2016

Notes: *- Riverside/Crags/Moraine intersection In the No Action is a tee intersection with continuous flow on Moraine and a stop controlled approach for Riverside/Crags. Delay and LOS of the worst turning movement (from stop controlled Riverside to Moraine) is shown. + Roundabout intersections are analyzed under the unsignalized intersection criteria.

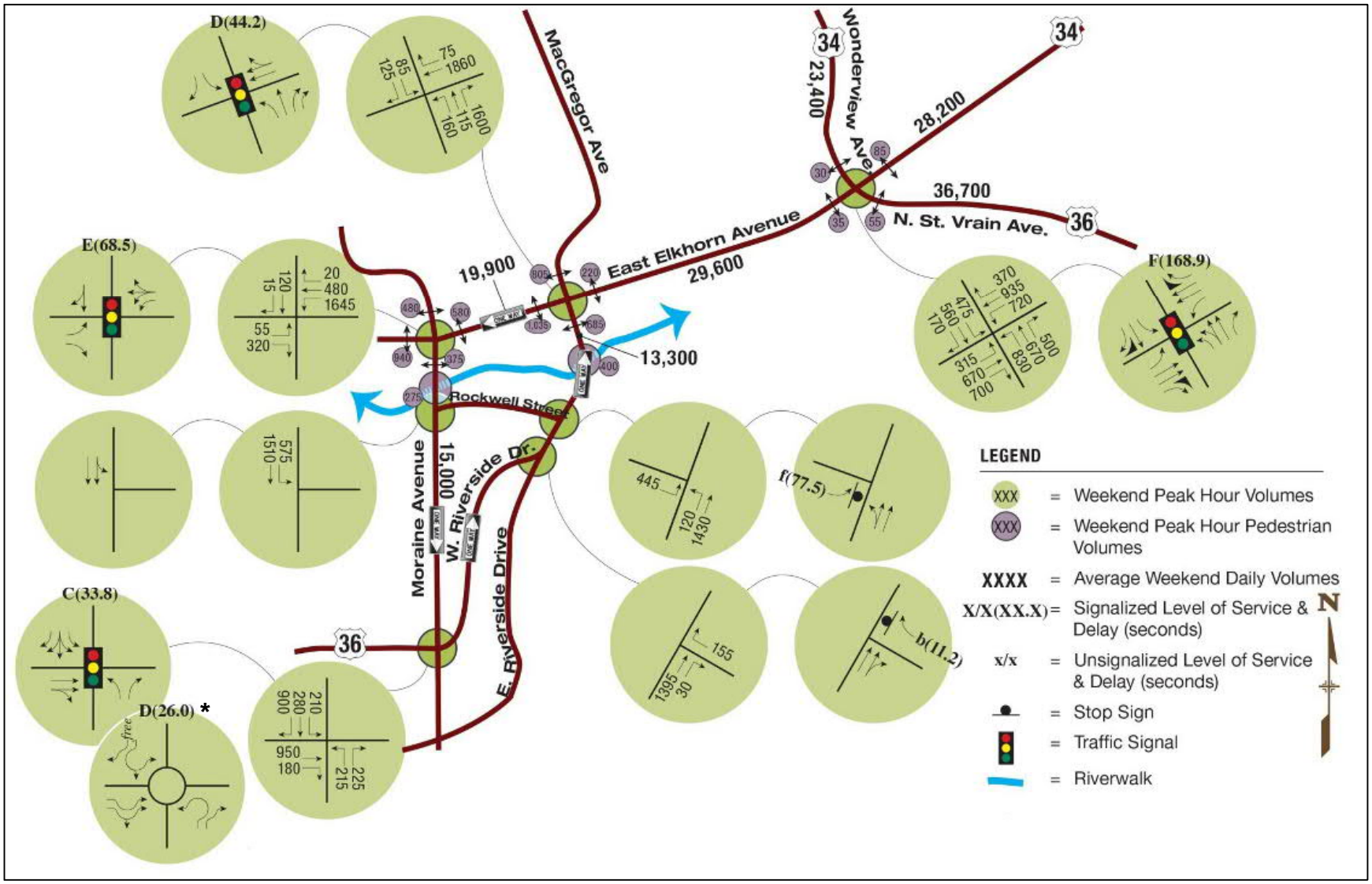
Table 3.1-5: Comparison of Delay and LOS between No Action and Proposed Action

Intersection	Opening Year (2018)				Horizon Year (2040)			
	No Action		Proposed Action		No Action		Proposed Action	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Saturday Peak Summer Season								
US 34/US 36	66.8	E	54.2	D	166.4	F	168.9	F
Elkhorn/Riverside	102.5	F	15.7	B	86.5	F	44.2	D
Elkhorn/Moraine	146.0	F	29.3	C	298.9	F	68.5	E
Riverside/Crags/Moraine (signalized intersection)	>200*	F	24.0	C	>200	F	33.8	C
Riverside/Crags/Moraine (roundabout) +	N/A	N/A	7.8	A	N/A	N/A	26.0	D
AM Commuter Peak Hour								
US 34/US 36	27.9	C	23.9	C	36.0	D	36.1	D
Elkhorn/Riverside	8.3	A	17.5	B	25.7	C	13.6	B
Elkhorn/Moraine	20.1	C	17.3	B	39.3	D	17.5	B
Riverside/Crags/Moraine (signalized intersection)	17.5*	F	19.1	B	>200	F	18.1	B
Riverside/Crags/Moraine (roundabout) +	N/A	N/A	3.3	A	N/A	N/A	3.7	A
PM Commuter Peak Hour								
US 34/US 36	34.0	C	29.6	C	71.8	E	70.2	E
Elkhorn/Riverside	21.6	C	13.6	A	26.4	C	15.2	B
Elkhorn/Moraine	23.1	C	25.5	C	46.0	D	32.2	C
Riverside/Crags/Moraine (signalized intersection)	43.0*	E	20.1	B	>200	F	24.9	C
Riverside/Crags/Moraine (roundabout) +	N/A	N/A	6.8	A	N/A	N/A	10.0	A

Source: FHU 2016

Note: *- Riverside/Crags/Moraine intersection In the No Action is a tee intersection with continuous flow on Moraine and a stop controlled approach for Riverside/Crags. Delay and LOS of the worst turning movement (from stop controlled Riverside to Moraine) is shown. + Roundabout intersections are analyzed under the unsignalized intersection criteria.

Figure 3.1-9: Proposed Action 2040 Saturday Peak Summer Season Traffic Volumes and LOS



Note: * LOS classifications for roundabouts follow unsignalized intersection criteria.
Source: FHU, 2016.

Access

Under the Proposed Action, access would change at intersections to follow the one-way couplet. This means that where there are both left- and right-turns allowed now, only left- or only right-turns would be permitted (depending on direction), as noted below:

- **Southbound Virginia Drive at East Elkhorn Avenue**: This leg of the intersection currently has a dedicated left-turn lane and a shared thru/right-turn lane. The shared thru/right-turn lane would be converted to a right-turn only as thru traffic would be eliminated due to the conversion to one-way traffic on Riverside Drive.
- **Southbound Big Horn Drive at Elkhorn Avenue**: This leg of the intersection is currently a single-lane that allows left-turns, thru movements, and right-turns. Left-turns onto East Elkhorn Avenue would be eliminated due to the one-way couplet.
- **Eastbound Weist Drive at Moraine Avenue**: This is currently a one-way road that allows only right-turns. There would be no change at this location.
- **Eastbound Rockwell Street at Moraine Avenue**: This intersection is eastbound only, so no changes would occur at this location.
- **Eastbound Davis Street**: This leg of the intersection allows both left- and right-turns. Left-turns onto Moraine Avenue would be eliminated due to the one-way couplet.
- **Northbound Crags Drive**: This intersection would be reconfigured to eliminate thru traffic onto Moraine Avenue due to the one-way couplet, but both left-turns onto Moraine Avenue and right-turns onto Riverside Drive would continue to be accommodated.
- **East Riverside Drive (south of Ivy Street)**: This leg of the intersection currently allows left-turns and thru traffic. With the one-way couplet, left-turns would be eliminated here.
- **Northbound East Riverside Drive at Rockwell Street**: No change, as left-turns onto Rockwell Street to parking areas would be maintained.

As noted above, the Proposed Action would improve levels of service at each of the intersections that were evaluated in the study area by increasing throughput, with improved signal timing, and a reduced number of signal phases. This would be especially helpful for thru traffic in the study area.

Safety

As noted above, a safety analysis was completed for a five-year period from January 1, 2009 to December 31, 2013. The analysis showed that there were a total of 75 crashes (including 8 with injuries) at the seven intersections that were evaluated. The results of this analysis indicated that there were no correctable patterns in the existing system.

Converting downtown traffic to one-way throughout would provide safety benefits to both motorists and pedestrians. For motorists, one-way traffic on the most heavily congested streets would create an environment where more free-flow traffic could be accommodated through the reduction of signal phases, turning movements, and potential conflict points. Additionally, from a safety perspective, studies have shown that roundabouts are safer than traditional signal-controlled intersections because of the diminished frequency and severity of auto collisions. This is due to three primary reasons. First, cars are traveling at lower speeds as drivers must slow down and yield to traffic before entering a roundabout (with speeds typically between 15 and 20 mph). Second, there is no traffic signal to beat as roundabouts are designed to promote

a continuous, circular flow of traffic. Third, one-way travel with roads entering gently curved to direct drivers into the intersection helping them travel around the roundabout. The roundabout option would be seen as the safer of the two options, as the pedestrian-vehicle and vehicle-vehicle conflict points are 30 for the signalized intersection and 10 for the roundabout at the Riverside Drive/Crags Drive/Moraine Avenue intersection.

For pedestrians, one-way traffic would also create a safer environment with a smaller roadway cross-section, with one direction of travel, and fewer conflict points.

Parking

The Proposed Action proposes permanent displacement of thirteen parking spaces. Four of these thirteen spaces are displaced in the parking lot in front of Piccadilly Square, which is partially on Town owned property, but signed as private parking. The other displaced parking spaces occur along West and East Riverside Drives, in the Post Office Lot and in the East Riverside/Children's Park Lot. Existing parallel parking spaces along Moraine Avenue would be increased in several locations as part of the striping changes to the one-way configuration. Final parking locations will continue to be optimized and refined during final design. Parking impacts would be the same under either the Signalized intersection or Roundabout options.

The addition of curb and gutter along West Riverside Drive will provide defined access points through the construction of curb and gutter, sidewalk, and driveway curb cuts matching existing driveways and parking areas on private properties. This improvement could change existing informal parking areas along West Riverside Drive where parking spills out of private property and on to the public right-of-way.

School Bus Routes

Several school bus routes traverse the downtown area. Routes can change annually, depending on where student populations live. With the implementation of the Proposed Action, some out of direction travel would likely occur, but this would be minimal, and routes would likely be developed at the beginning of the school year to best utilize or avoid the new traffic patterns, depending on the origin of the individual route.

Compatibility with Local Plans

The Proposed Action has been discussed in full or in part in numerous previous planning studies, as a way to help alleviate the increasing congestion seen in downtown Estes Park. These studies are listed below. For a full description of how the Proposed Action fits within the context of these previous studies, see the *Traffic Conditions Technical Report*, Volume 3.

- Estes Valley Transportation Alternatives Study, Town of Estes Park (2003)
- Town of Estes Park Implementation of Republic Parking Plan, Town of Estes Park (2006)
- Estes Park Downtown Circulation Study, Town of Estes Park (2008)
- Evaluation of an Intelligent Transportation System for RMNP and Estes Park, RMNP (2011)
- Roadmap to the Future, Transportation Visioning Committee (2012)
- Integrated Approach to Transportation and Visitor Use Management at RMNP, RMNP (2013)

- Estes Park Transit and Parking Study, Town of Estes Park (2013)

Transit

As part of the Proposed Action, the bus stop near the northbound Moraine Avenue and eastbound Elkhorn Avenue intersection would be relocated to East Riverside Drive near Children's Park to provide transit connectivity to these sections of the one-way couplet.

Transit improvements are not being proposed as part of the Proposed Action; however, as noted under the No Action Alternative, the Town of Estes Park and its Shuttle Committee are considering the preparation of a shuttle service grant application to submit to CDOT, with the hope of securing additional funding to operate on a limited basis during the winter months, when shuttle service currently does not operate.

Pedestrian and Bicycle

New sidewalk, shared bike lanes (along Elkhorn Avenue) and on-street bike lanes (along Moraine Avenue and Riverside Drive to the new bridge over the Big Thompson River south of Elkhorn Avenue), and trail connection improvements would be implemented as part of the Proposed Action.

The Proposed Action would construct new pedestrian sidewalks along West and East Riverside Drive, connecting to existing Riverwalk locations and providing continuous sidewalks throughout the downtown that do not exist today. The existing Riverwalk crossings at East Riverside Drive and Moraine Avenue south of Elkhorn Avenue will be upgraded. Due to the high pedestrian volumes and close spacing of the Riverwalk crossings to the Elkhorn Avenue intersections an actuated pedestrian signal is required at both the East Riverside and Moraine Avenue Riverwalk Crossings. These crossings will include a pedestrian signal that would be coordinated with the adjacent traffic signal operations. This coordinated signal timing will improve traffic operations and provide improved safety for pedestrian by stopping vehicular traffic with a signal. The pedestrian signal operations will be coordinated with the intersection signal operations to provide two phases per cycle to keep pedestrians moving while not impacting vehicles too severely. Much like a normal vehicular intersection pedestrians will need to push the pedestrian signal button and wait for it to change to a walk phase before proceeding across the street. The existing Rectangular Rapid Flashing Beacon (RRFB) Yield sign located on Moraine Avenue south of Rockwell near the public restroom will remain in place unchanged. Other existing and proposedcrossings of West and East Riverside would be upgraded with pavement markings and signage indicating the crossing, and possible RRFB treatments. These details will be determined during final design.

Construction Impacts

During construction, traffic impacts would occur on East Elkhorn Avenue, Moraine Avenue, Ivy Street, and East and West Riverside Drive within Estes Park around construction staging areas. If funding for the full Proposed Action was available it would likely take two construction seasons for a total of 18 to 24 months to complete construction. Phase 1 would likely take approximately 12 months to complete. The reconstruction of the most disruptive components, such as bridge replacement and full roadway reconstruction that would affect through traffic would take place prior to Memorial Day or after Labor Day. However, with the high elevation there will be a lot of

temperature dependent work that would need to be completed during warmer months. Any work conducted between May and October would be completed during weekdays and no lane closures on US 36 lanes would occur from Friday to Sunday. Work on Elkhorn and Moraine Avenues would include temporary lane closures during pavement, signing and striping work. Portions of Riverside Drive would be closed to through traffic during replacement of bridges and full reconstruction and realignment of the roadway. Access to residents and the Post Office parking lot along Riverside Drive would be maintained at all times.

Transportation impacts during construction would be experienced by both regional traffic and local traffic. These impacts would affect residents, visitors, emergency service providers, transit service, and commuters who travel to work in the study area.

3.1.3 Mitigation

No Action Alternative

No mitigation required.

Proposed Action

The following section outlines recommended mitigation measures.

Parking

The project team will continue to seek opportunities to minimize the reduction of spaces in conjunction with implementation of the Proposed Action.

Transit

The shuttle stop near the northbound Moraine Avenue and eastbound Elkhorn Avenue intersection would be relocated to East Riverside Drive near Children's Park to provide transit connectivity to these sections of the one-way couplet. No other impacts to the existing transit routes are anticipated. The implementation of the transportation improvements will benefit all traffic in the downtown, including transit providers, with reduced congestion and delay.

Construction Impacts

Several measures are proposed to mitigate for the temporary impacts described above. In coordination with the Town of Estes Park and its stakeholders, detours will be developed to maintain the most direct travel routes to the greatest extent possible during construction.

Additional temporary measures to mitigate transportation impacts during construction are outlined below:

- **East Elkhorn Avenue**: Access to businesses along both sides of East Elkhorn Avenue between Riverside Drive and Moraine Avenue will be largely maintained, as this segment will only undergo milling, resurfacing, restriping, curb/gutter and sidewalk modifications. Temporary daytime lane closures would occur during these activities.
- **Moraine Avenue**: Access to businesses along both sides of Moraine Avenue between Elkhorn Avenue and Crags Drive will be largely maintained, as this segment will only undergo milling, resurfacing, restriping, curb/gutter and sidewalk modifications. Temporary daytime lane closures would occur during these activities.

- **Intersection of Moraine Avenue/Crags Drive/Riverside Drive**: This intersection would see partial closures during construction with either the Signalized Intersection or Roundabout options, as it would be fully reconstructed to accommodate the one-way couplet. Business and resident access would be maintained at all times during construction.
- **Riverside Drive**: Access to businesses and homes along both sides of Riverside Drive between Crags Drive and Elkhorn Avenue will be maintained during full reconstruction of Riverside Drive. Some curb/gutter, sidewalk modifications, and drainage installations will require lane closures, but likely not full closures. Partial closures and some full closures will occur while the existing bridges that cross over the Big Thompson River at Ivy Street and Riverside Drive (future, unfunded phase) are replaced.
- **Rockwell Street**: Access to businesses and parking lots along Rockwell Street between Moraine Avenue and Riverside Drive will be largely maintained, as this segment will only undergo milling, resurfacing, and restriping. Full closures would occur during the reconstruction of the Rockwell Bridge (future, unfunded phase).
- **Transit**: CFLHD will coordinate with the Town of Estes Park and RMNP shuttle operators during design and construction to provide adequate detour routing for impacted shuttle routes and stops. Transit operations would be maintained throughout the construction.

    - **Travel Demand Management (TDM) Measures**: Voluntary reductions in vehicle trips during peak hours would be encouraged to reduce congestion. This will be accomplished through a public information campaign to educate travelers on TDM measures that may be used to reduce congestion during construction. CFLHD and the Town of Estes Park will work with local organizations and employers to help promote the campaign throughout the construction period. The public information campaign will inform the organizations, employers, and the general public about upcoming street closures and how best to plan trips.

3.2 Land Use

This section addresses land use, zoning, and development in relation to each alternative.

3.2.1 Affected Environment

The Estes Valley Comprehensive Plan describes the land uses, densities, and land development regulations (zoning and subdivision) for the Estes Valley. The Estes Valley Development Code was adopted in 2000 as a result of the comprehensive plan and implements the Future Land Use Plan (Town of Estes Park and Larimer County 1996).

In general, commercial development is focused on the downtown core area. As noted in the downtown neighborhood plan section of the comprehensive plan, commercial development is the primary land use within downtown, including retail shops, offices, and restaurants. Most of downtown is fully developed with intensive and compatible land uses. The comprehensive plan states that redevelopment of existing buildings in the downtown area will continue on an incremental basis. As discussed in the comprehensive plan, the convergence of major highways and regional routes within the Estes Valley occurs within or near the small, pedestrian-oriented downtown area, resulting in severe traffic congestion during the peak summer season. The plan discusses the one-way couplet (Proposed Action) and suggests it will help reduce congestion in downtown and may spur redevelopment of Moraine Avenue (Town of Estes Park and Larimer County, 1996).

Chapter 8: Neighborhood Plans of the Comprehensive Plan contains development guidelines for downtown, as well as a map of the downtown planning area land uses/zones. The primary land use within the study area is the CD – Commercial Downtown zone district. This zone district is intended to provide a wide variety of high intensity retail and commercial services within downtown to residents and visitors. This zone district implements the land use category "CBD – Commercial Downtown" from the comprehensive plan, which is intended to encourage compact, pedestrian-scale retail, service, and office uses. Residential uses are also encouraged as a way to provide alternative housing options for the Estes Valley workforce. Downtown is intended to maintain its function as the focal point of tourist shopping and entertainment activity; therefore, future sales-tax generating uses are strongly encouraged. New development is intended to integrate and enhance the qualities of the streams, rivers, topography and other natural assets of the area (Town of Estes Park 2000).

There is also a small portion of the study area just south of the Riverside Drive/Moraine Avenue intersection that is within the CO-Commercial Outlying zone district. This zone district is focused on encouraging development of a variety of commercial and retail uses along the major corridors into the Estes Valley and Town of Estes Park and should accommodate the majority of the larger, freestanding buildings to meet future commercial and retail demand in the community. This zone district implements the land use categories "Commercial" and "Commercial-Recreation" from the Comprehensive Plan (Town of Estes Park 2000).

East and West Riverside Drives include primarily single-family and multi-family residential. This includes a mix of year-round residents as well as rental properties. In addition, there are commercial properties along Riverside Drive. Some are standalone commercial structures. Others are mixed-use (commercial on the ground floor and residential above).

Farmlands

There are no farmlands in the study area, which is within the urbanized area of Estes Park.

3.2.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, land uses within the study area would not be affected. There would be no need for right-of-way acquisition or relocations of businesses or residents.

Proposed Action

The Proposed Action would be consistent with the *Estes Valley Comprehensive Plan* and existing zone districts within the study area. As noted in the comprehensive plan, the Proposed Action could spur redevelopment of Moraine Avenue (Town of Estes Park and Larimer County 1996). Additional on-street parking on Moraine Avenue, reduced traffic, and pedestrian and bicycle improvements along the street may encourage additional pedestrian traffic, thus encouraging new commercial development. Induced commercial development resulting from the Proposed Action and approved by the Town would be expected to remain consistent with the comprehensive plan and existing zone districts within downtown. Refer to *Section 3.5: Economics*, for additional information on economic impacts from the Proposed Action. A substantial increase in population, and thus need for residential development, is not anticipated to result from the Proposed Action.

The Proposed Action would require acquisition of residential properties along Riverside Drive, including buildings utilized for rental lodging. This would result in a loss of available property for short term lodging in the immediate downtown area. In addition, over the long term, new development (commercial or residential) may occur along East and West Riverside Drives due to the increased traffic and visibility.

The Proposed Action would require acquisition of lands within Baldwin Park and Children's Park, though new park land would be provided along the Big Thompson River in the study area. The result would be a slight net increase in park land. Refer to *Section 3.16: Parks, Recreation, Open Space, and Section 4(f) and 6(f)*.

3.2.3 Mitigation

Refer to Section 3.3 for a description of right-of-way mitigation measures. *Section 3.16: Parks, Recreation, Open Space, and Section 4(f) and 6(f)* describes mitigation for park resources.

3.3 Right-of-Way/Acquisitions

This section describes land ownership in the study area and proposed property acquisitions, along with mitigation for the affected property owners.

3.3.1 Affected Environment

Land ownership within the study area consists of privately owned commercial, residential and combined commercial/residential property, as well as, publicly owned transportation, parks, and open space property. *Section 3.2 Land Use* and *Section 3.5 Economics* provide additional detail on existing ownership and use.

3.3.2 Environmental Consequences

No Action Alternative

The No Action Alternative would not require right-of-way, property acquisitions, or relocations within the study area.

Proposed Action

The Proposed Action would result in full and partial acquisitions of private property, and acquisitions of publicly owned land (either via permanent acquisition or temporary easement). The existing public right-of-way along West and East Riverside Drives would be transferred to CDOT and would become a state highway. CDOT will then own and maintain the roadway.

Under the Proposed Action, seven parcels would require full acquisition. These full acquisitions include six private properties with commercial and residential structures that will require relocation, and one Town-owned residential structure. The privately owned properties include three restaurants (Donut Haus, Tiki Room and Mountain Munchies), a residential property with structures on-site used for short-term rentals, residential properties along Riverside Drive and a vacant commercial property along Riverside Drive.

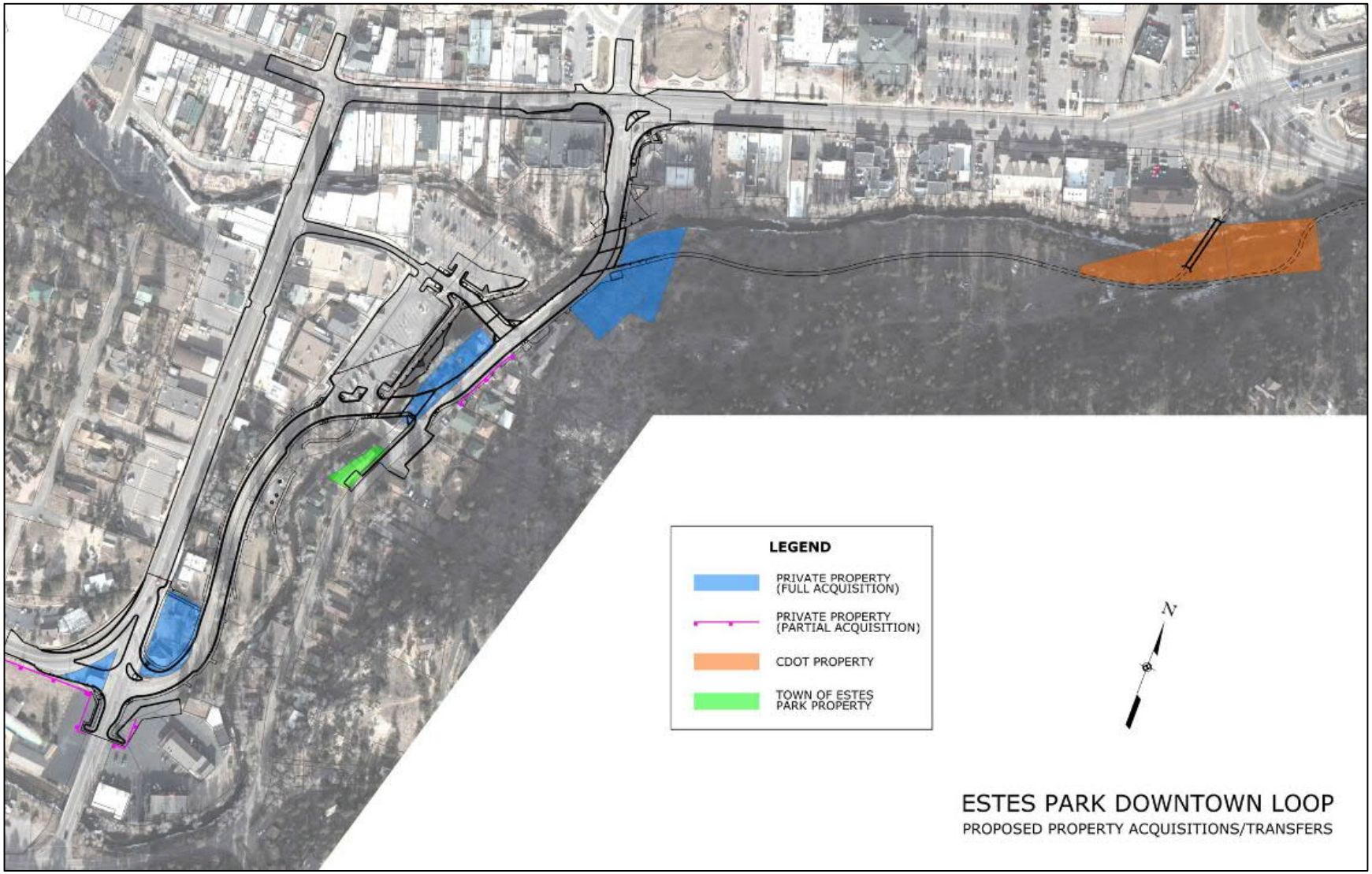
Four parcels would require partial acquisition, meaning that a portion of the property is acquired by CDOT for the project. A partial acquisition along Moraine Avenue west of Crags Drive is required for both the signalized intersection and roundabout intersection options. Small partial acquisitions of 0.01 acres or less along East Riverside Drive would be required for replacement sidewalk. See Table 3.3-1 for a complete list of parcels that would be acquired.

Table 3.3-1: Parcels Requiring Full or Partial Acquisition

Address	Name or Use	Parcel Size/Area of Impact
Full Acquisitions		
342 Moraine Avenue	Donut Haus (Restaurant)	0.08 acres
335 West Riverside Drive	Residential/Lodging (5 buildings)	0.34 acres
221 East Riverside Drive	Residential/Commercial	0.09 acres
201 East Riverside Drive	Residential	0.10 acres
189 East Riverside Drive	Tiki Room and Mountain Munchies Restaurant(s) and Residential (in same structure)	0.10 acres
124 East Riverside Drive	Residential/Office	0.13 acres
120 East Riverside Drive	Commercial (Vacant)	0.20 acres
Partial Acquisitions		
375 West Moraine Avenue	Estes Park Slides (Commercial)	0.12
340 West Riverside Drive	Piccadilly Square (parking lot)	0.005
170 East Riverside Drive	Residential	0.006
160 East Riverside Drive	Residential	0.007
150 East Riverside Drive	Lofts at Estes	0.011

Source: AECOM, 2016.

Figure 3.3-1: Proposed Action – Full and Partial Property Acquisitions



Source: AECOM, 2016.

3.3.3 Mitigation

Initial research indicates that available properties exist within downtown Estes Park to relocate properties that require full acquisition. It will be the decision of the individual property owner as to their preference for relocating downtown or outside of the immediate downtown. Discussions with each property owner to be relocated have been initiated to discuss the acquisition process per the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act) as described further below. These discussions have included the suitability of replacement sites for relocation. These discussions will continue during the final design process.

The Uniform Act provides numerous benefits for individuals with residences or businesses that need to be relocated due to the project. The Uniform Act will assist them both financially and with advisory services related to residence or business operation relocation. Although the benefits available under the Uniform Act are far too numerous and complex to discuss in detail in this document, they are available to both owner occupants and tenants of either residential or business properties.

CDOT will lead the acquisition process, in coordination with CFLHD and the Town. CDOT will provide all impacted property owners notification of its intent to acquire an interest in their property, including a written offer letter of just compensation (i.e. fair market value) specifically describing those property interests being sought. CDOT will provide all displaced persons advisory services and notification of relocation cost reimbursement eligibility, as applicable. A Right-of-Way Specialist will be assigned to each property owner to assist them with this process.

3.4 Social Resources/Environmental Justice

This section addresses anticipated changes to community facilities, neighborhoods, travel patterns, and overall public safety. Anticipated impacts to minority and/or low-income populations are also addressed. Measures to avoid and/or reduce identified effects are identified.

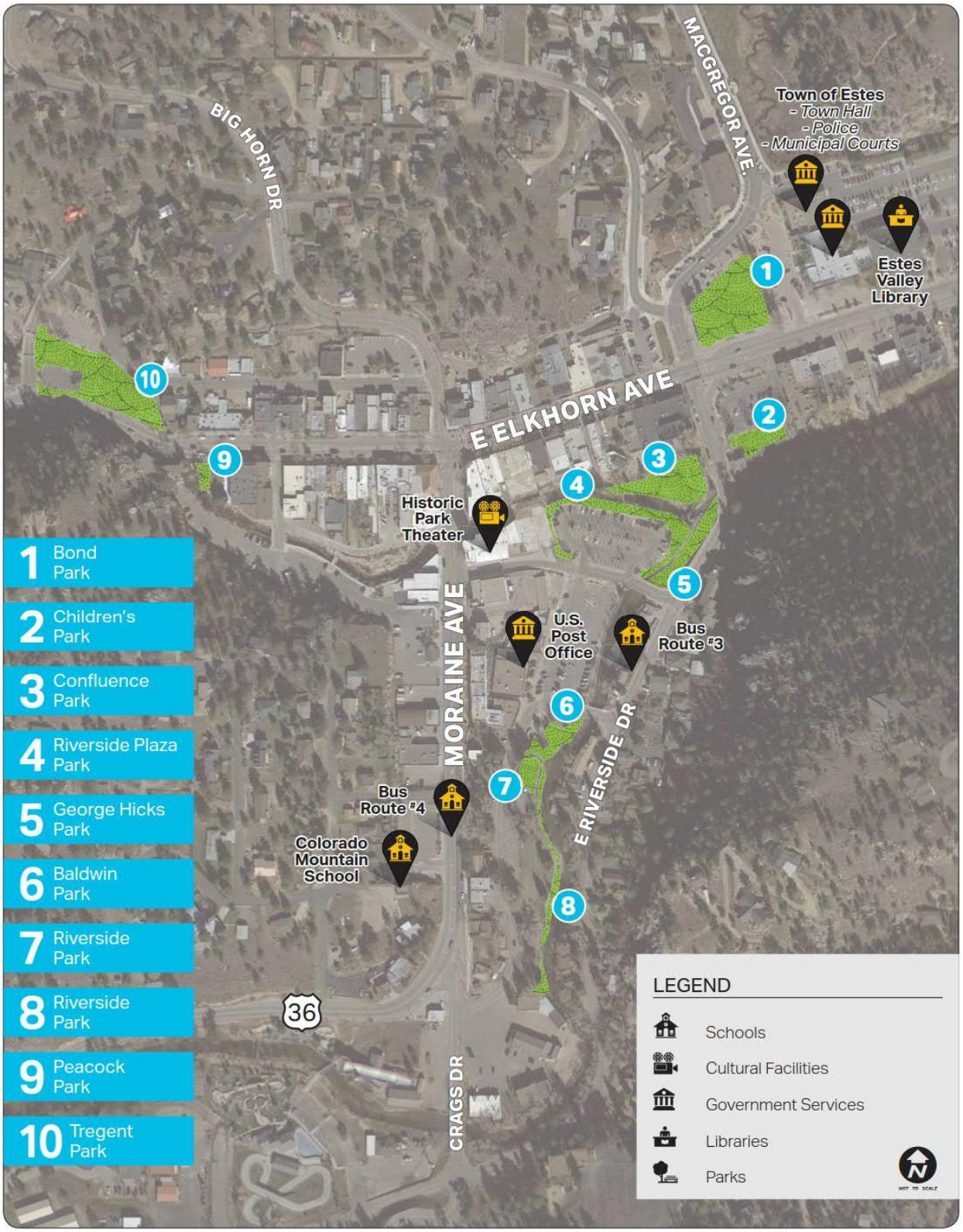
3.4.1 Affected Environment

Known community facilities in the study area (along Elkhorn, Moraine, and Riverside Drives), include the following:

- **Schools**: There are no public or private elementary, middle, or high schools located in the immediate study area. The Town provides bus service for K-12 students. There are two school bus routes that run along project streets. Route 4 runs along Elkhorn and Moraine Avenues. Route 3 runs along the northern end of Riverside Drive (north of the Ivy Street intersection) (Coleson 2015). The Colorado Mountain School, a private business and guide school, is at 341 Moraine Avenue and offers outdoor sports courses and expeditions.
- **Cultural Facilities**: The Historic Park Theater, located at 130 Moraine Avenue, was built in 1913 and is the oldest operating movie theater in the United States.
- **Government Services**: The Town of Estes Park offices and Town Hall are located at 170 MacGregor Avenue, with access off of Elkhorn Avenue. The U.S. Post Office is along Riverside Drive and is accessed from both Rockwell Street and Riverside Drive (215 West Riverside Drive).
- **Libraries**: The Estes Valley Library is near Town Hall at 335 East Elkhorn Avenue.
- **Parks**: A number of parks are located within the study area. More specific details, including programming/facilities and size of each park, are included in *Section 3.16: Parks, Recreation, Open Space, and Section 4(f) and 6(f)*.

A graphic of the community facilities in the study area is shown on Figure 3.4-1. Police and fire protection facilities and routes are discussed in *Section 3.14: Public Services and Utilities*.

Figure 3.4-1: Community Facilities in the Study Area



Source: AECOM, 2016.

Environmental Justice

Since publication of Executive Order (EO) 12898, "Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations" in the *Federal Register* on February 11, 1994 (59 *Federal Register* 7629), federal agencies have been developing a strategy for implementing the order. Currently, federal agencies rely on "Environmental Justice: Guidance under the National Environmental Policy Act" (guidance), prepared by the CEQ (1997), in implementing EO 12898.

EO 12898 "is intended to promote nondiscrimination in federal programs substantially affecting human health and the environment, and to provide minority communities and low-income communities access to public information on, and an opportunity for participation in, matters relating to human health and the environment." As required by EO 12898, the project must be evaluated for any disproportionately high and adverse human health or environmental effects on minority communities and low-income populations.

EO 12898 defines minority groups as: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic/Latino origin; or Hispanic/Latino. Council on Environmental Quality (CEQ) guidelines for evaluating potential adverse environmental justice effects indicate minority populations should be identified when either: 1) a minority population exceeds 50 percent of the population of the affected area; or 2) a minority population represents a "meaningfully greater increment" of the affected area population than the population of some appropriate larger geographic unit, as a whole.

In support of EO 12898, the U.S. Department of Transportation (DOT) issued an Order on environmental justice, DOT Order 5610.2. The Federal Highway Administration (FHWA) issued its order on environmental justice, FHWA Order 6640.23. The DOT Order was updated on May 2, 2012 (Order 5610.2a), FHWA guidance on Environmental Justice and NEPA was issued December 16, 2011, and the FHWA Order was updated on June 14, 2012 (Order 6640.23a). The U.S. DOT and FHWA have encouraged a proactive approach to the implementation of environmental justice, aimed at preventing disproportionately high and adverse impacts.

A U.S. Environmental Protection Agency (EPA) two-step screening process identifies environmental justice concerns and addresses the following questions:

- Does the potentially affected community include minority and/or low income populations?
- Are the environmental impacts likely to fall disproportionately on minority and/or low income members of the community and/or a tribal resource?

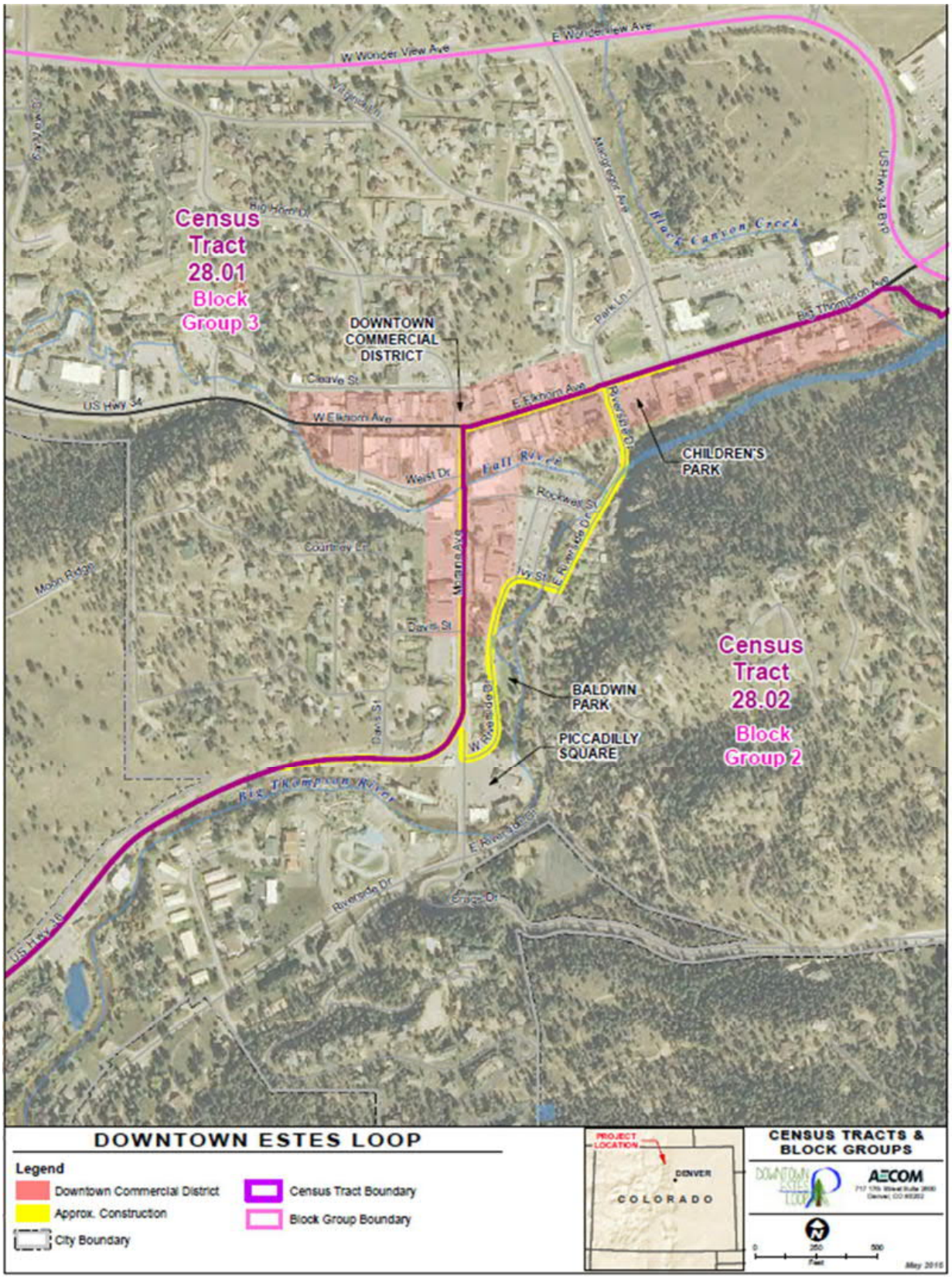
Census Information

A census block group is a geographic area defined by the U.S. Census Bureau and used for the census. On average, a census block group has around 1,500 residents. Census block groups, as well as census tracts, are more uniformly distributed in terms of the number of residents than cities or zip codes. Also, the census block group and the census tract demographic data are nearly 100 percent complete vs. less than 70 percent coverage of demographic data for cities and zip codes. Therefore census block groups and census tracts are an excellent way to understand demographic characteristics at a smaller scale. Census block groups are smaller

than census tracts and can be further divided into census blocks for understanding locations at the block and community level.

The study area lies within Census Tracts 28.01 and 28.02. As detailed in Table 3.4-1 and portrayed on Figure 3.4-2, there are two block groups that transect the study area, Block Groups 3 and 2.

Figure 3.4-2: Census Tracts and Block Groups in the Study Area



Source: AECOM, 2016.

Table 3.4-1: Racial Composition and Low-Income Populations, 2009-2013

County/State	White (%)	Black (%)	American Indian/ Alaska Native (%)	Asian (%)	Native Hawaiian/ Pacific Islander (%)	Other or Two or More Races (%)	Hispanic or Latino of Any Race* (%)	Below the Poverty Level (%)	Median Household Income ($)
Larimer County	93.4	1.0	1.0	2.2	0.1	2.3	10.9	14.1	58,626
Estes Park Town	91.0	0.3	0.5	1.2	Z	1.4	14.0	4.2	59,826
Tract 28.01	95.6	0.5	0.5	0.1	0	3.3	4.5	6.3	61,580
Tract 28.02	97.2	0.9	0.3	0	0	1.6	2.9	5.8	55,223

Source: U.S. Census Bureau 2009-2013 American Community Survey 5-Year Estimates; U.S. Census Bureau 2015.

*Hispanics may be of any race, so also are included in applicable race categories. Therefore, percentage totals will be more than 100%.

The minority population of Block Group 3, as a percentage, is generally greater than the average minority composition of Census Tract 28.01, with the Hispanic population comprising 9.4 percent of the Block Group 3 population verses 4.5 percent within Tract 28.01. The largest minority population within Block Group 3 is Hispanic. The minority population of Block Group 2, as a percentage, is generally less than the average minority composition of Census Tract 28.02, the exception being the American Indian/Alaska Native population, which at 1.1 percent was higher than the tract average of 0.3 percent. The largest minority population within Block Group 2 is Hispanic, although as a percentage, this population is substantially less than Census Tract 28.02.

Census Block Groups 2 (Tract 28.02) and 3 (Tract 28.01) recorded median household incomes that were less than Census Tracts 28.02 and 28.01, as well as the town of Estes Park and Larimer County. The percentage of the population living below the poverty level within Census Tracts 28.01 and 28.02 was slightly higher than the Town of Estes Park, but substantially lower than Larimer County. Poverty data are not reported at the block group level.

The populations within Census Tracts 28.01 and 28.02 are typically more advanced in age with approximately 34 and 30 percent of the population within Census Tracts 28.01 and 28.02, respectively, above 65 years of age. Only 10 and 14 percent of the population within Census Tracts 28.01 and 28.02, respectively, are under 18 years of age.

3.4.2 Environmental Consequences

No Action Alternative

The No Action Alternative would have no direct or adverse impacts to community facilities, neighborhood cohesion, or low-income or minority populations; however, congestion will continue to worsen under the No Action Alternative resulting in impacts to mobility for the downtown environment and surrounding residents who access the area regularly.

Proposed Action

The one-way couplet is not anticipated to result in significant changes to existing neighborhoods or to adversely affect community cohesion within the downtown area. The couplet would continue to provide access to existing businesses and residences, and would not isolate neighborhoods. The additional traffic along East and West Riverside Drives would not be anticipated to affect overall property values, and may benefit existing businesses through greater visibility.

The U.S. Post Office, located at 215 West Riverside Drive, is heavily utilized by residents. Access is currently provided through Rockwell Street and off of Riverside Drive. The conversion of Riverside Drive to one-way will necessitate out of direction travel for residents accessing the post office from WB Elkhorn or exiting to WB Moraine Avenue. Rockwell Street will remain open in the one-way couplet configuration to provide access.

Existing school bus routes would be affected by the conversion to a one-way configuration. Routes would need to be adjusted, along with associated pick-up stops. These modifications are not anticipated to be adverse or to cause substantial delays (Coleson 2015).

Environmental Justice

The analysis of the minority populations within Census Tracts 28.01 and 28.02 and Block Groups 2 and 3 reveals that the environmental impacts would not be likely to fall disproportionately on minority and/or low income members of the community. Block Groups 2 and 3 contain relatively the same or a lesser percentage of minority population within Census Tracts 28.02 and 28.01, the exception being the Hispanic population within Block Group 3, which is markedly higher than the Hispanic population within Census Tract 28.01; however, Census Tract 28.01, as well as Census Tract 28.02, both contain minority populations relatively the same or below minority levels of the Town of Estes Park and Larimer County.

Both Census Tracts also report median income that is close to or greater than the Town of Estes Park and Larimer County. Ultimately, the project would generate income and employment opportunities within the affected area (during construction), potentially benefiting minority communities as well as contributing to the local tax base. No minority or low-income populations have been identified that would be adversely impacted by the proposed project, therefore, in accordance with the provisions of EO 12898, DOT Order 5610.2, and FHWA Order 6640.23, no further EJ analysis is required.

With respect to the public engagement requirements of EO 12898, *Chapter 4: Correspondence, Consultation and Coordination* characterizes the nature of the project's public outreach and involvement effort, which has been broad and inclusive.

3.4.3 Mitigation

No mitigation is required.

3.5 Economic Conditions

The following discussion describes existing regional and local economic conditions and key factors with an emphasis on downtown Estes Park and the potential effects of the No Action Alternative and the Proposed Action. The discussion concludes with mitigation measures to avoid and/or reduce identified economic effects.

3.5.1 Affected Environment

The Estes Valley provides a wide range of attractions that generate economic benefits from local residents, residents from surrounding mountain communities, residents and visitors from the growing Colorado Front Range market, and visitors from other states and nations around the world. RMNP is a primary attraction along with other natural environments and associated facilities that provide opportunities for recreation in the Estes Valley and the surrounding area. Other tourism attractions include unique facilities such as the Stanley Hotel, Town special events, and the unique downtown Estes Park. Downtown Estes Park provides a mix of retail, dining, gifts, recreation, and amenities with a strong emphasis on serving tourists. Convenience retail (gas stations and other quick stop facilities) and grocery stores are located beyond downtown limits.

Motor Vehicle Traffic

Traffic Volumes and Visitation: Tourism is a key component of the Estes Valley economy. Tourism is linked to seasonal traffic volumes on the two primary US highways (US 34 and US 36) serving the Estes Valley and RMNP. Table 3.5-1 summarizes traffic volumes from 1999 to 2015. The table highlights overall growth in total traffic along US 34 and US 36, as well as considerable volatility in traffic, with the latter influenced by general weather conditions in a given season, the impacts of past recessions (2002-2003 and 2008-2010), fuel prices, the 2012 wildfires, and the floods of September 2013, and the 100-year anniversary of RMNP in 2015. The recent flood (and to a lesser degree the wildfire) have influenced monthly and annual visitation by reducing travel during and immediately after these events, because of extended closures and delays along US 36, US 34, and, in the case of the wildfire, routes within RMNP. Some of the increased demand after these events may be attributable to higher demand if visitors had delayed their plans from previous years, higher visibility of the Estes Park and RMNP across the region, and the 100-year anniversaries of the NPS in 2016 and the Town of Estes Park in 2017. Data from 1999 through 2015 reflect a 1.4 percent annualized traffic growth rate on US 34/US 36 accessing Estes Park, from 3.8 million vehicles to 4.8 million vehicles.

Elkhorn/Moraine intersection Retail Environment

Congestion near Elkhorn/Moraine Intersection

Table 3.5-1: US 34 and US 36 Traffic Volumes from 1999 through 2015

Year	US 34 Big Thompson Avenue; Station ID 205	US 36 North St. Vrain Avenue; ID 244	Total Traffic both Directions
1999	1,866,529	2,013,591	3,880,120
2000	1,870,387	2,092,020	3,962,407
2001	1,868,783	2,131,646	4,000,429
2002	1,893,168	2,106,907	4,000,075
2003	1,912,999	2,153,336	4,066,335
2004	1,892,561	2,123,064	4,015,625
2005	1,884,863	2,009,203	3,894,066
2006	1,864,399	2,031,133	3,895,532
2007	1,845,903	2,104,197	3,950,100
2008	1,795,364	2,096,054	3,891,418
2009	1,845,963	2,116,682	3,962,645
2010	1,836,263	2,191,276	4,027,539
2011	1,832,423	2,203,851	4,036,274
2012	2,013,286	2,244,954	4,258,240
2013	1,845,893	2,106,953	3,952,846
2014	2,128,849	1,668,661	3,797,510
2015	2,333,494	2,532,979	4,866,473
CAGR 1999 to 2012	0.6%	0.8%	0.7%
CAGR 1999 to 2015	1.4%	1.4%	1.4%

CAGR = compound annual growth rate.
Source: CDOT, 1999-2015.

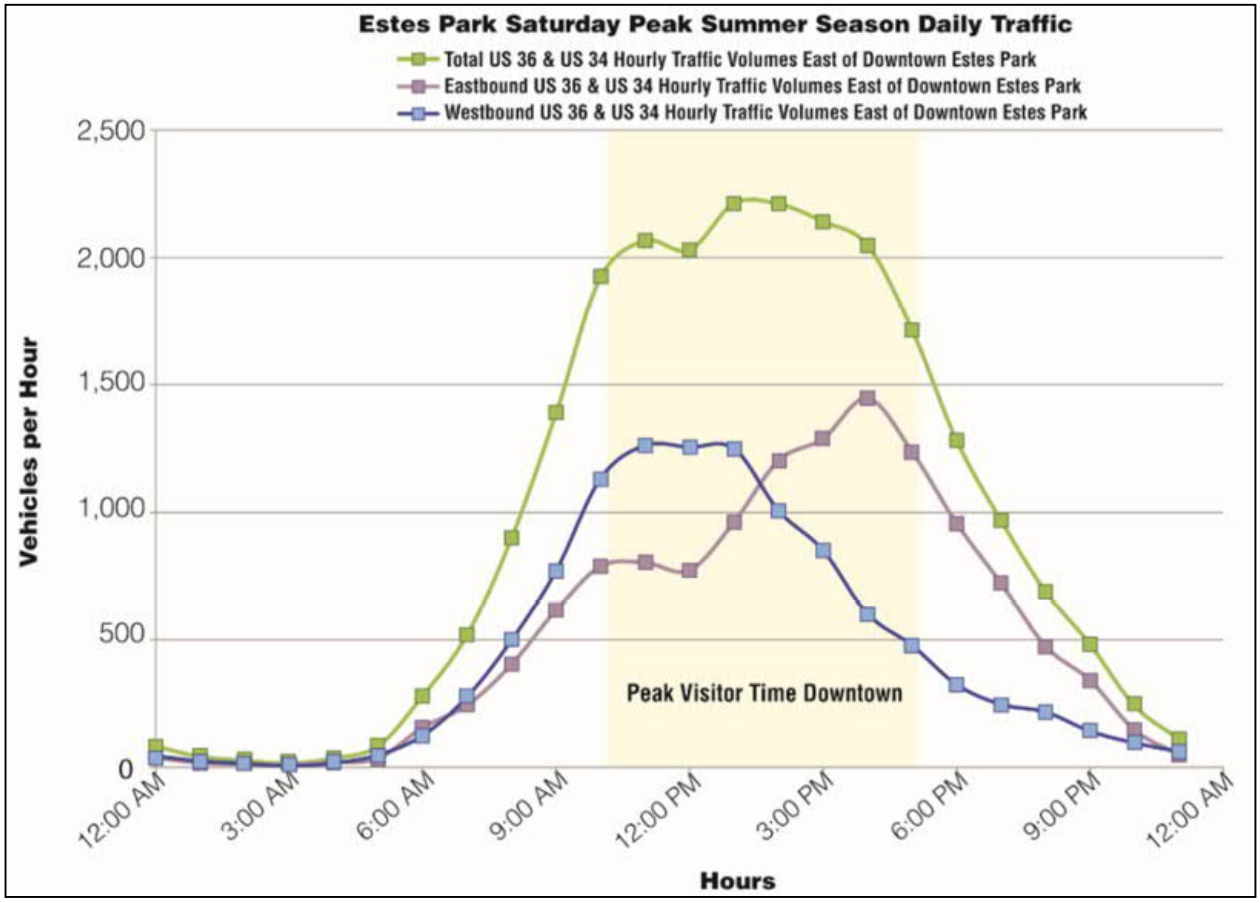
According to the RMNP Information Office, RMNP ranked third on the list of most visited national parks in 2015 and set a record for highest annual visitation in 2015 (4,155,916 visitors). This 2015 figure represents a 21 percent increase over 2014. All months in 2015 set visitation records except for February and April. Fall visitation, particularly on weekends, continues to increase at RMNP. The top five busiest days in 2015 were in September and early October (www.nps.gov). It is important to note that RMNP data incorporate a factor (people per car) to determine total people from total vehicles, whereas the analysis in this section reflects total vehicles.

The website America 2050 projects an 87 percent growth in population for the Front Range between 2010 and 2050. A 2010 report by Colorado's state demographer indicates that by 2030, the 65+ year-old population of the Front Range will have tripled (from 400,000 to 1.2 million). This demographic is particularly important. It is this age group, with their leisure time and discretionary income that comprises a large and growing percentage of tourist visitors both in Estes Park and elsewhere.

Traffic Volume Variations: Monthly, Daily and Hourly: Peak traffic volume occurrences on US 34/US 36 in Estes Park vary significantly throughout the year, during the week, and throughout the day. Peak monthly traffic demands in Estes Park and RMNP occur seasonally with peaks in the summer and early fall. The peak traffic flows on US 34/US 36 during the seasonal increase occur on weekends and peak hourly volumes occur in late morning and early afternoon.

Overall traffic volumes and when they occur during the year and during the day drive the Estes Park economy. As described in *Chapter 1: Purpose and Need* and *Section 3.1: Transportation*, Estes Valley traffic is seasonal with peak monthly and daily volumes occurring in the summer and early fall and on weekends with hourly traffic peaks in the early afternoon. Monthly, daily and hourly retail sales, especially in downtown Estes Park, directly correlate with peak period travel volumes on US 34 and US 36. Interviews with downtown store operators who shared hourly sales data (point of sale cash register records) indicated that peak retail sales occur during the peak season from about 1:00 to 2:00 PM (See Figure 3.5-1), which correlates with the peak traffic demand on US 34 and US 36.

Figure 3.5-1: Estes Park Peak Season Traffic Volumes over 24 Hours (2012)



Source: AECOM, 2016

Travel Patterns and Markets: While traffic volumes into Estes Park have grown, total inbound vehicle counts into RMNP remained relatively flat between 1999 and 2014. A substantial increase in visitation was experienced in 2015, potentially due to the RMNP 100-year anniversary.

While there is a general sense that downtown Estes Park relies in large measure on tourist expenditures associated with RMNP, traffic data indicates that greater Estes Park is itself a primary destination. Table 3.5-2 presents inbound traffic comparison at RMNP entrances. Table 3.5-3 clarifies how much inbound traffic is headed to RMNP vs. Estes Park.

Table 3.5-2: RMNP Inbound Traffic Comparisons, Primary Entrances (1999-2015)

Year	Traffic Entering Beaver Meadows	Traffic Entering Fall River	Total Traffic Entering RMNP
1999	489,122	318,041	1,193,673
2000	494,094	328,586	1,201,171
2001	483,066	322,903	1,171,167
2002	449,078	298,454	1,097,317
2003	454,904	306,332	1,119,016
2004	440,301	291,806	1,056,038
2005	443,804	282,739	1,051,464
2006	453,821	275,386	1,036,786
2007	485,392	294,643	1,097,757
2008	486,180	271,121	1,044,289
2009	499,616	287,989	1,080,702
2010	525,939	291,142	1,126,766
2011	575,667	287,181	1,209,672
2012	478,748	284,922	1,040,633
2013	418,171	235,233	890,600
2014	539,236	273,139	1,081,946
2015	637,029	353,636	1,324,728
CAGR	1.7%	0.7%	0.7%

Source: RMNP, 1999-2015.

Table 3.5-3: Estes Park vs. RMNP – Inbound Traffic

Year	Total RMNP Eastern Entrance Traffic	Total East of Estes Park Inbound Traffic	RMNP Share of In-Bound Traffic
1999	807,163	1,940,060	41.6%
2000	822,680	1,981,204	41.5%
2001	805,969	2,000,215	40.3%
2002	747,532	2,000,037	37.4%
2003	761,236	2,033,168	37.4%
2004	732,107	2,007,813	36.5%
2005	726,543	1,947,033	37.3%
2006	729,207	1,947,766	37.4%
2007	780,035	1,975,050	39.5%
2008	757,301	1,945,709	38.9%
2009	787,605	1,981,323	39.8%
2010	817,081	2,013,770	40.6%
2011	862,848	2,018,137	42.8%
2012	763,670	2,129,120	35.9%
2013	653,404	1,976,423	33.1%
2014	812,375	1,898,755	42.8%
2015	990,665	2,433,237	40.7%
CAGR	1.3%	1.4%	

Source: AECOM analysis of data from RMNP and CDOT, 2016.

Notes: "Total RMNP Eastern Entrance Traffic" includes Beaver Meadows entrance plus Fall River entrance traffic. "Total East of Estes Park Inbound Traffic" includes US 36 and US 34. CAGR = Compound Annual Growth Rate

Downtown Visibility, Accessibility, and Traffic Congestion: Retail sales/store performance are influenced by a number of factors including visibility, parking availability, pedestrian

accessibility, tenant mix and quality of stores, and mix of local and national chains. Traffic congestion is frequent and directly tied to peak period tourism demand (See *Section 3.1: Transportation* for traffic details). In addition, noise and air pollutants generated during congested periods degrade the quality of the retail environment for pedestrians.

Retail Sales

***Lodging Tax Receipts*:** Table 3.5-4 summarizes a trend of annualized growth in retail sales for Estes Park. The table includes overall retail sales, as well as separate breakouts for lodging related sales taxes. The table shows that lodging taxes have grown at about twice the annualized rate of overall retail sales. The analysis also focused on the share of retail sales that are captured by downtown merchants. The City of Estes Park data indicates that about 19% of total Town merchants and about 23% of total Town sales are generated within the core downtown area, which excludes the Stanley Village retail area.

Table 3.5-4: Estes Park Retail Sales Tax (2004 to 2015)

Year	Total Retail Sales Taxes	Total Lodging Sales Taxes	Retail Sales Taxes Less Lodging	Lodging Taxes % of Total Sales Taxes
2004	$6,302,454	$1,342,550	$4,959,904	21%
2005	$6,422,881	$1,423,542	$4,999,339	22%
2006	$6,767,121	$1,607,270	$5,159,851	24%
2007	$7,233,707	$1,813,978	$5,419,729	25%
2008	$7,183,790	$1,771,509	$5,412,281	25%
2009	$6,852,574	$1,675,092	$5,177,482	24%
2010	$7,007,094	$1,768,187	$5,238,907	25%
2011	$7,422,537	$1,931,215	$5,491,322	26%
2012	$7,889,220	$2,162,856	$5,726,364	27%
2013	$7,628,199	$2,083,848	$5,544,351	27%
2014	$8,730,272	$2,871,340	$5,858,932	33%
2015	$9,733,669	$3,678,574	$6,055,095	38%
CAGR	4.0%	9.6%	1.8%	

Source: Town of Estes Park, 2004-2015. CAGR = Compound Annual Growth Rate

Resort Seasonality: Further analysis of sales tax data compared to other resort destinations in Colorado revealed that Estes Park has seen a significant pivot in seasonal visitation between 2011 and 2014, with reduced visitation during the summer and increased visitation during the winter, spring, and fall. Figure 3.5-5 presents a seasonal analysis of retail sales from 2011 to 2015. The table shows that the net percentage change in market share between 2011 and 2014 (at 1.08 percent) was the third fastest rate of change across 26 Colorado destinations. Although data from the fourth quarters of 2013 and 2014 should be considered unusual, a finding that a shift is occurring is clear, and broadening the appeal of Estes as a year-around destination would help reduce the pressure on downtown infrastructure to perform during the peak summer season.

Table 3.5-5: Comparative Analysis of Sales Tax Changes in Competing Communities

Town of Estes Park and Market Competitors	Annualized Change in Total Sales Tax Between 2011 and 2014				Average of Seasonal Changes
Community	Winter	Spring	Summer	Fall	Average Change
Mt. Crested Butte	-4.01%	-2.22%	7.71%	4.49%	1.49%
Winter Park	-2.13%	-1.06%	4.96%	2.85%	1.15%
Estes Park	***1.84%***	***4.12%***	***-2.54%***	***0.89%***	***1.08%***
Grand Lake	0.53%	4.88%	-0.67%	-1.13%	0.90%
Ouray	2.98%	2.00%	-0.63%	-1.15%	0.80%
Breckenridge	-1.98%	1.30%	1.54%	0.76%	0.41%
Avon	-2.24%	1.09%	2.14%	0.18%	0.29%
Mt. Village	-1.19%	0.69%	2.41%	-0.94%	0.24%
Nederland	-1.56%	2.58%	-2.71%	2.55%	0.22%
Frisco	-3.82%	2.13%	0.90%	1.53%	0.18%
Steamboat	-1.71%	-0.21%	2.01%	0.57%	0.16%
Dillon	-0.77%	-0.64%	0.66%	1.12%	0.09%
Aspen	-2.19%	1.76%	2.82%	-2.15%	0.06%
Durango	-0.21%	0.83%	0.07%	-0.54%	0.04%
Silverthorne	-2.41%	1.25%	0.91%	0.39%	0.03%
Summit County	2.00%	-3.83%	1.11%	0.73%	0.00%
Basalt	0.51%	-0.15%	-1.22%	0.79%	-0.02%
Vail	0.13%	-1.01%	1.24%	-0.44%	-0.02%
Minturn	0.85%	-2.53%	-0.17%	1.76%	-0.02%
Snowmass	0.74%	-2.84%	3.07%	-1.08%	-0.03%
Glenwood	-2.47%	0.45%	0.78%	1.04%	-0.05%
Telluride	0.10%	0.31%	0.46%	-1.15%	-0.07%
Gunnison County	-2.97%	-0.21%	1.41%	1.37%	-0.10%
Fraser	3.53%	-1.63%	-1.29%	-1.63%	-0.26%
Silverton	-0.88%	-3.02%	1.03%	-0.27%	-0.78%

Source: AECOM analysis of Sales Tax Data, State of Colorado, 2016.

Population Trends and Regional Market Growth

Census data suggest that while the resident population within 20 miles of downtown Estes Park has grown, secondary markets that drive visitation to Estes Park have grown at a faster rate. Since 2000, the population within 20 miles of Estes Park has increased from about 29,900 to an estimated 34,235 in 2014, an annualized rate of 0.97 percent (See Table 3.5-6). Population growth between 20 and 40 miles of Estes Park has been stronger, from 637,400 to 827,100 over the same period (2 percent annual growth). Regarding tourism, the number of passengers moving through Denver International Airport has increased at a 2.3 percent annual rate between 2004 and 2014, reflecting growth from 42.2 million to 53.3 million in 2014.

Table 3.5-6: Market Growth Trends – Regional Population Changes

Defined Market	2000	2010	2014	New Residents/Year	Annual Growth Rate
0 to 20 Mile Band	29,914	32,977	34,235	309	0.97%
20 to 40 Mile Band	637,348	784,527	827,091	13,553	1.88%
40 to 60 Mile Band	1,761,929	1,934,592	2,018,885	18,354	0.98%
Total Market	2,429,191	2,752,096	2,880,211	32,216	1.22%
Boulder PMSA	276,255	295,605	313,624	2,669	0.91%
Fort Collins MSA	253,088	300,532	321,221	4,867	1.72%
Greeley MSA	183,076	254,230	276,337	6,661	2.98%
Larimer County	253,088	300,532	321,221	4,867	1.72%
Denver PMSA	2,144,971	2,502,291	2,689,006	38,860	1.63%

MSA – Metropolitan Statistical Area
PMSA – Primary Metropolitan Statistical Area
Source: US Census, ESRI, State of Colorado, 2016.

Local Market Trends: Housing Accessible to the Downtown: One clear factor limiting downtown Estes Park economic growth is the share of housing within reasonable walking distance. This was established by evaluating Colorado cities with viable historic downtowns, smaller town downtowns (as identified by the National Trust for Historic Preservation), and other towns that serve as National Park gateways. A sample of 27 small towns was identified and analyzed. The sample is geographically broad (See Table 3.5-7).

Table 3.5-7 shows the number of housing units within 0-1 miles, 1-2 miles and 2-3 miles of downtown. This evaluation and comparison clarifies how the number of walkable housing units factors into downtown demand, as well as indirect parking space capacity.

The sample has average percentage of housing units within 1 mile of about 49% percent or about 2,683 housing units. In contrast, Estes Park has an estimated 1,800 housing units within 1 mile of downtown. The data in Table 3.5-7 reinforce that downtown Estes Park has a significantly lower share of walkable housing within 1 mile (at 24 percent) compared to the benchmarks. This difference between Estes Park and other similar communities occurs, in part, from an older resident population generating a lower demand for high density residential development, high demand for low density housing within the Town and Estes Valley, and lower volume of land available for housing near the downtown. The implication for the downtown is that the local population and visitors are compelled to drive and the demand for motor vehicle accessibility and parking is high.

Table 3.5-7: Housing Unit Counts within Defined Distance of Downtown (2014)

Downtown Main Street	0-1 mile	1-2 miles	2-3 miles	Total Housing Units	1 mile share
Bar Harbor, ME	1,637	152	69	1,858	88%
Galena, IL	1,868	187	414	2,469	76%
Leadville, CO	2,419	455	339	3,213	75%
Herman, MO	1,109	242	210	1,561	71%
Aspen, CO	5,125	1,559	682	7,366	70%
Red Lodge, MT	1,413	400	252	2,065	68%
Frisco, CO	3,015	442	1,180	4,637	65%
Eureka Springs, AR	1,120	475	206	1,801	62%
Saratoga Springs, NY	7,221	3,476	1,741	12,438	58%
Jackson, WY	2,773	1,089	1,311	5,173	54%
Wallace, ID	552	294	249	1,095	50%
Key West, FL	6,973	2,857	4,070	13,900	50%
Lake Geneva, WI	3,115	1,662	1,688	6,465	48%
Nantucket, MA	3,811	2,929	1,937	8,677	44%
Glenwood Springs, CO	2,015	1,226	1,429	4,670	43%
Red Wing, MN	2,995	2,545	1,533	7,073	42%
Telluride, CO	2,104	556	1,770	4,430	39%
Durango, CO	2,726	2,777	1,573	7,076	39%
Silver City, NM	2,165	2,502	1,599	6,266	35%
Staunton, VA	4,548	6,518	2,409	13,475	34%
Crested Butte, CO	1,086	1,604	580	3,270	33%
Port Angeles, WA	3,426	5,161	2,133	10,720	32%
Gatlinburg, TN	1,930	2,385	1,759	6,074	32%
Port Townsend, WA	1,629	2,702	1,092	5,423	30%
Brown County – Nashville, IN	491	550	629	1,670	29%
Traverse City, MI	3,364	5,315	5,206	13,885	24%
Estes Park, CO	**1,823**	**4,841**	**981**	**7,645**	**24%**
Averages	**2,683**	**2,033**	**1,372**	**6,089**	**49%**

Source: AECOM analysis of ESRI data, 2016.

Parking as a Key Economic Growth Factor: The housing data and other economic data combined with traffic data described herein and in *Section 3.1: Transportation* support the assertion that economic growth in downtown Estes Park is constrained by existing congestion and other factors. Successful downtowns reinforce the need for a diverse mix of healthy anchor tenants, an attractive and walkable pedestrian environment, strong retail visibility, and provision of adequate parking. Downtown Estes Park has a diverse mix of tenants and currently supports about 425,000 square feet of retail space, with above average occupancy levels and rents. This inventory is supported by approximately 1,388 public parking spaces downtown, for a ratio of about 3.1 spaces per 1,000 square feet of retail space. This calculation excludes parking east of the downtown (visitor center and fairgrounds as well as private parking lots).

National data from sources such as the Urban Land Institute (ULI) point to the provision of parking at a rate of 4 to 5 parking spaces per 1,000 square feet of retail space for larger retail projects. ULI sources such as the Shopping Center Development Handbook indicate that as leasable area increases beyond 400,000 square feet, the parking ratio tends to slightly increase. Using this ratio, downtown is undersupplied with parking by between 300 and 1,100 parking

spaces. Lack of downtown parking is a paramount concern, as local reports suggest that existing parking lots are effectively at capacity by 11:00 AM on high-traffic weekends.

Economic Development Strategies: Downtown Estes Park is a vital community resource for many reasons. With this in mind, the Town and business owners and operators have worked together for years under various organizational strategies to improve and market the downtown through aesthetic improvements and marketing campaigns and services.

The Estes Park Economic Development Corporation (EDC) completed a recent study to identify barriers and opportunities to economic development, with identification of industry clusters whose attraction offers the best promise for sustained economic growth. In addition, a 2015 broadband study by the Town and EDC confirmed that robust and competitive broadband is as necessary for the businesses in the downtown core as it is for those along Fall River, US 34, US 36, and SH 7.

In April 2015, the Town of Estes Park was awarded $295,800 in state and federal grants for development of a downtown neighborhood plan and a study of the hydrology of Fall River, Black Canyon Creek, Dry Gulch and Big Thompson River. This planning process will be underway in 2016. The project objectives of the downtown neighborhood plan are to:

- Create an overall vision for downtown development for the next 10 years
- Integrate flood hazard and resiliency planning with transportation and parking, infrastructure planning, sense of place (urban design), and economic resiliency into a unified plan
- Incorporate public outreach and engagement in all aspects of the downtown neighborhood planning process

With respect to transportation and parking, the Town has responded in a variety of ways. The Town has conducted traffic, parking, and other studies, and has sought and received state and federal funding to make traffic, parking, and other improvements.

The Town has received funding to construct a new parking structure adjacent to the Estes Park Visitor Center (located near the intersection of US 34/US 36), which also serves as a hub for the Town's free shuttle services. The project will replace an existing paved parking lot and provide approximately 412 total spaces, including 300 new parking spaces, with 100 in the first phase. Currently, Estes Park operates a free shuttle service to and from the Visitor Center, with services to downtown Estes Park, the Fairgrounds Park and Ride, and points within RMNP.

In addition, the Town has identified the need for a downtown parking structure at existing surface parking lots between the Big Thompson River and Moraine or at another downtown location. This structure is not funded at the current time.

2040 Market Conditions

Travel demand estimates for 2040 are described in *Chapter 1: Purpose and Need* and *Section 3.1: Transportation*. Based on regional land use and growth estimates, travel on US 34 and US 36 is expected to grow by 1.3 percent annually through 2040. Clearly, travel volumes on US 34 and US 36 are an indicator of overall in-bound visitation demand and economic growth potential.

Given the estimate of a faster growth rate in traffic volume through 2040, the resulting demand increase, if accommodated, will increase retail sales and sales tax in the Estes Valley, the Town of Estes Park and downtown Estes Park. It should also lead to increased visitation at RMNP, surrounding recreation sites, and area attractions. Continuation of the apparent shift toward non-peak seasonal visitation is significant; the future trajectory will link with continued emergence of off-season events and facilities.

However, as the floods of September 2013 demonstrated, adequate access and mobility, as measured by the frequency and duration of adequate traffic flow, will be critical to the economic health of the Estes Valley and downtown Estes Park. While visitation dropped rapidly immediately after the flood, marketing efforts thereafter, pent up demand, and support for the town resulted in a notable increase in post-flood visitation to Estes Park. Resulting sales tax collections speak to importance of this response.

Given current and future economic conditions, the following factors are evident:

- While there will be continual year-to-year volatility in tourist visitation to Estes Park, the underlying growth metrics for markets along the Front Range are increasing. For Estes Park, continued growth in peak season visitation, even at a modest rate, is challenging given existing infrastructure.
- Downtown Estes Park generates retail sales and resulting sales taxes that are material to the fiscal well-being of the Town of Estes Park.
- Sales tax data for Estes Park indicates that there has been a recent shift in seasonal spending away from the peak summer season.
- Sustaining growth in retail sales will require public and private interests in Estes Park to make investments that enable downtown to maximize revenue capture during the peak season and further encourage the seasonal diversification of visitors.
- The downtown has parking constraints, as identified in this study and in previous planning efforts by the Town.
- Downtown has a smaller percentage share of housing units within one mile as compared to peer communities. This forces both residents and visitors to drive to downtown.

3.5.2 Environmental Consequences

No Action Alternative

Displacement of Businesses and Residences*:* No business or residential displacements would occur with the No Action Alternative.

Traffic Route Changes, Accessibility and Parking*:* No traffic route changes or roadway improvements would be constructed with the No Action Alternative, with the exception of the implementation of the Barnes Dance (a pedestrian only signal phase that stops all vehicular traffic movements and allows pedestrians to cross an intersection in every direction at the same time) traffic signal at Elkhorn/Moraine and Elkhorn/Riverside (which was reintroduced on May 27, 2016 at both intersections). However, as described in *Chapter 1: Purpose and Need* and *Section 3.1: Transportation*, anticipated future traffic volumes will continue to increase and lead to worsening congestion. Visitors and the local community would experience back-ups along the study area roadways.

This traffic presents the potential to limit and discourage peak period visitation to Estes Park and RMNP. Existing capacity limitations will spread some demand into off-peak travel times (earlier in the morning, later in the afternoon and evening, on weekdays, and earlier in the year and later in the year). In addition, some of the anticipated 2040 demand may not occur due to visitor awareness of seasonal congestion concerns and viable alternative destinations.

The redistribution of the demand, as accommodated by existing roads and parking, may incrementally increase retail sales and sales tax generation broadening the season of activity for local businesses. This could result in fewer business turnovers because a more distributed demand over the year may help marginal businesses achieve sustainable results. However, discouraging reports from visitors and an increased Colorado awareness of extended and frequent congestion may lead to further erosion of market share with competing resort communities and recreation locations. This shift may help balance the relationship between demand and capacity to some degree as visitors adjust their plans, but it could also result in lower overall downtown sales and tax collections than scenarios providing additional capacity. Some of this reduction may be shifted away from the downtown toward other commercial areas near the downtown, elsewhere in the Estes Valley, and/or out of the region. The demand on parking will require solutions such as more parking lots, more parking structures and more mode shifts to transit services linked to parking opportunities east of downtown.

Proposed Action

As described earlier in this section, data indicate that visitor demand for RMNP and Estes Park has been increasing in recent years. The demand to RMNP and Estes Park is expected to continue to increase with regional growth, tourism growth in Colorado, and the overall popularity of both areas. Furthermore, retail sales and sales tax generated in the downtown area are directly related to the traffic demand. Sales and associated taxes are also directly related to availability of parking and lodging.

The most influential economic impact of the Proposed Action would result from the substantial increase in traffic operations as measured by levels of service, as well as improved directional signage and anticipated reduced travel time during peak periods (See *Chapter 1: Purpose and Need* and *Section 3.1: Transportation*). Additional benefits of the Proposed Action include continuous pedestrian sidewalks and bicycle facilities to increase accessibility and mobility.

Negative impacts of the Proposed Action include:

- Loss of business property due to acquisition of the Donut Haus and properties along Riverside Drive
- Minor losses in convenience revenues during peak travel due to the ease of eastbound exiting traffic along Riverside (however, this will be overcome, in part, with additional signage in downtown showing parking options and other attractions).
- Reduced parking capacity and delays during construction
- Reduced visibility of businesses on Elkhorn and Moraine by potential customers due to the one-way configuration. As noted above, signage would also aid in providing parking and downtown attraction information to vehicles traveling on Riverside.

It is anticipated that the Proposed Action will have minor short-term negative economic impacts that will be offset by positive impacts due to increased demand and reduced congestion. Therefore, direct impacts related to the Proposed Action are considered to be insignificant.

The Proposed Action does however provide the necessary infrastructure for considerable future economic benefits if the following are implemented:

- Increased visibility along Riverside Drive for existing and future businesses.
- Increased visibility to one of the largest parking areas in downtown (post office parking lot).
- Implementation of the stream channel widening would result in reduced flood plain boundary thereby benefiting residential and commercial properties.
- Infrastructure to access a potential future downtown parking structure that could provide additional parking in the center of downtown, if advanced and implemented by the Town of Estes Park at a later date.

A detailed description of economic impacts of the Proposed Action, along with mitigation measures, is provided below.

Displacement of Businesses and Residences: The Proposed Action would result in full and partial acquisitions of private property, and acquisitions of publicly owned land (either via permanent acquisition or temporary easement). The existing public right-of-way along West and East Riverside Drives would be transferred to CDOT and would become a state highway. CDOT will then own and maintain the roadway. Under the Proposed Action, seven parcels would require full acquisition. These full acquisitions include six private properties with commercial and residential structures that will require relocation, and one Town-owned residential structure. The privately owned properties include three restaurants (Donut Haus, Tiki Room, and Mountain Munchies), a residential property with structures on-site used for short-term rentals, residential properties along Riverside Drive and a vacant commercial property along Riverside Drive.

Four parcels would require partial acquisition, meaning that a portion of the property is acquired by CDOT for the project. A partial acquisition along Moraine Avenue west of Crags Drive is required for both the signalized intersection and roundabout intersection options. Small partial acquisitions of 0.01 acres or less along East Riverside Drive would be required for replacement sidewalk. Table 3.5-8 presents a complete list of parcels that would be acquired.

Table 3.5-8: Anticipated Property Impacts (Full and Partial Acquisition)

Address	Name or Use	Parcel Size/Area of Impact
Full Acquisitions		
342 Moraine Avenue	Donut Haus (Restaurant)	0.08 acres
335 West Riverside Drive	Residential/Lodging (5 buildings)	0.34 acres
221 East Riverside Drive	Residential/Commercial	0.09 acres
201 East Riverside Drive	Residential	0.10 acres
189 East Riverside Drive	Tiki Room and Mountain Munchies Restaurant(s) and Residential (in same structure)	0.10 acres
124 East Riverside Drive	Residential/Office	0.13 acres
120 East Riverside Drive	Commercial (Vacant)	0.20 acres
Partial Acquisitions		
375 West Moraine Avenue	Estes Park Slides (Commercial)	0.12
340 West Riverside Drive	Piccadilly Square (Parking Lot)	0.005
170 East Riverside Drive	Residential	0.006
160 East Riverside Drive	Residential	0.007
150 East Riverside Drive	Lofts at Estes	0.011

Source: AECOM, 2016.

Full displacements would be expected to have direct economic impacts in the form of lost sales, sales tax and to a far lesser degree, property tax at a community level. However, these losses could be offset immediately with relocations within the area for most of the displaced businesses and over time by market forces, including increased demand, future developments, and possible additional parking, that respond to these changes or other economic factors that may improve as a result of the Proposed Action. The analysis has identified approximately 14,000 square feet of commercial space that would be acquired for right-of-way. This would result in a very small reduction in property tax payments to the Town.

The requirements of the Uniform Act apply to right-of-way acquisition, displacement, and relocations required for project implementation. The Uniform Act provides important protections and assistance for people affected by federally funded projects. This law was enacted by Congress to ensure that people whose real property is acquired, or who move as a result of projects receiving federal funds, will be treated fairly and equitably and will receive assistance in moving from the property they occupy.

***Parking Space Losses**:* The Proposed Action proposes permanent displacement of thirteen parking spaces. Four of these thirteen spaces are displaced in the parking lot in front of Piccadilly Square, which is partially on Town owned property, but signed as private parking. The other discplaced spaces are located along Riverside Drive (along Baldwin Park and within the U.S. Post Office parking lot), and in the East Riverside/Childrens Park lot. Existing parallel parking spaces along Moraine Avenue would be increased in several locations as part of the striping changes to the one-way configuration. Final parking locations will continue to be optimized and refined during final design. Parking impacts would be the same under either the Signalized intersection or Roundabout options.

Traffic Route Changes, Accessibility, and Parking*:* Economic effects from the conversion of the two-way roadway network through downtown Estes Park to a one-way couplet were raised as a key issue in the project's scoping process. The following discussion characterizes various issues associated with conversions from a two-way network to a one-way network and conversions of a one-way network to a two-way network through downtowns. Both approaches are being evaluated and implemented by communities like Estes Park to address a wide range of social, economic, and environmental issues and unique downtown conditions.

Research on the economic effects of these conversions presents mixed results and the findings, positive or negative, depending on the particular characteristics of the downtown and roadway network under evaluation. Both conversion processes are often faced with opposition and controversy based on a wide range of uncertainties and the importance of maintaining and/or nurturing the economic health of community downtowns. The appropriateness of a one-way or two-way roadway network relates to a number of factors starting with traffic volumes and roadway capacity. Roadway capacity is often limited by existing buildings that form the demand for travel to a downtown. Roadway and right-of-way widths are often constrained by these buildings making it difficult to add lanes or additional parking along existing routes. In situations where traffic volumes can be accommodated by two-way networks, a two-way approach is common and beneficial. In situations where increasing traffic volumes cannot be accommodated, one-way couplets and bypasses are evaluated and in some cases created.

The Estes Park roadway network is not a common grid, like those found in Boulder and Sterling, Colorado where parallel roads are used to create couplets. The current roadway configuration in downtown Estes Park is highly constrained by existing features that date back many years and were created to address area topography, the two rivers running through the downtown, and early development patterns linked to these considerations. Consequently, typical one-way to two-way and two-way to one-way analyses and findings do not relate well to conditions in Estes Park, nor do bypass analyses. Typically, a bypass analysis involves a substantial route diversion over an extended distance and located relatively far away from the original route.

The triangular shape of the roadway network created by the proposed one-way couplet combined with the spatial layout of the major roads and attractions in the Estes Valley, in the Town, and in the downtown is unusual, constrained by existing buildings and other conditions, and subject to high traffic levels. However, the issues, considerations and potential effects referenced in economic impact analyses of conversions still generally apply to downtown Estes Park. These issues, considerations and effects are identified in the following bullets and the general implications of the one-way couplet in downtown Estes Park are summarized:

- Environmental effects such as noise levels or vehicular emissions as a measure of pedestrian qualities needed to support economic activity: Future noise and emissions along Elkhorn Avenue and Moraine Avenue would change with improved traffic flow. Noise may slightly increase as vehicles are able to travel at speeds closer to the speed limits, while reduced idling and dwell times may reduce some emissions and associated odors. Riverside Drive corridor noise and emissions would increase.
- Overall retail sales changes for businesses with frontage along the key street(s) with differences according to retail type (destination retail versus convenience retail): a minor

decrease would be expected because most of the retail is not convenience retail along Elkhorn Avenue and Moraine Avenue, where the couplet would change conditions; however, signage that directs drivers to parking and downtown attractions could aid in offsetting this decrease.

- Overall retail sales for businesses beyond the boundary of the downtown (not on the streets to be converted and within larger, surrounding areas): Increased visitation is likely to increase overall economic activity.
- The capacity of overall economic forces to adjust and potentially offset effects over time and with mitigation measures that would help minimize potential effects: These forces would remain in place with and without the one-way couplet.
- The difference, if any, between actual effects and public perception of effects, as measured by surveys of public concern and support/opposition: Public perception is unpredictable and likely to be mixed. Most visitors are likely to adapt to the new conditions.

Table 3.5-9 summarizes business visibility in terms of existing and projected weekday and weekend annual average daily traffic volumes. The traffic volumes show minimal change to visibility for the commercial areas along Elkhorn and Moraine with the couplet as compared to two-way travel.

Table 3.5-9: Business Visibility in Terms of Existing (2014), Opening Day (2018) and Projected (2040) Annual Average Daily Traffic Volumes

Roadway	Weekday – June		Weekend – July (Saturday)	
	Two-Way	Couplet	Two-Way	Couplet
	2014			
Elkhorn	10,500	NA	15,900	NA
Moraine	10,000	NA	12,900	NA
W. Riverside	1,800	NA	2,200	NA
E. Riverside	6,500	NA	7,800	NA
	2018			
Elkhorn	11,000	9,700	16,700	14,700
Moraine	10,500	9,200	13,500	11,500
W. Riverside	1,900	6,500	2,400	7,650
E. Riverside	6,800	8,100	8,200	10,200
	2040			
Elkhorn	14,800	13,200	22,400	19,900
Moraine	13,600	12,000	17,500	15,000
W. Riverside	2,500	10,200	3,000	11,700
E. Riverside	9,000	10,600	10,800	13,300

Source: AECOM analysis of CDOT data, 2016.

However, this assessment does not account for changes in AM and PM traffic volumes. The one-way couplet has the following impacts on those volumes creating the potential for related economic effects:

- AM traffic volumes on peak weekends on Elkhorn Avenue and Moraine Avenue would not be expected to change substantially as a result of the one-way couplet because the

route does not change for the major movements (west on Elkhorn Avenue and south on Moraine Avenue).

- PM traffic volumes on Elkhorn Avenue and Moraine Avenue would be reduced substantially because traffic heading past the downtown from the South and West would be using Riverside and only a portion of Riverside traffic would elect to turn left onto Elkhorn Avenue as a means of finding parking.

Given the average daily and AM/PM traffic conditions, the following effects would be anticipated:

- Overall economic health and growth would be encouraged by the one-way couplet within the downtown and community through traffic efficiency benefits.
- Convenience retail operations (coffee shops, cafes, ice cream shops, etc.) along Elkhorn Avenue and Moraine Avenue may be adversely affected during the afternoon as a result of traffic diversions onto Riverside due to reduced visibility during the highest volume of traffic exiting RMNP.
- Pedestrian safety conditions on Elkhorn Avenue and Moraine Avenue in the afternoon would improve when Riverside is handling relatively high traffic volumes rather than Elkhorn Avenue and Moraine Avenue. The eastbound traffic will have better access to one of the largest parking area in the downtown limits which could offset the effects of reduced business visibility. This would support destination and convenience retail businesses on Elkhorn Avenue and Moraine Avenue and could create new business opportunities along Riverside.

The Proposed Action changes travel routes for motorists headed out of RMNP via the downtown area and changes routes through and around downtown Estes Park for local travelers. For out of town visitors entering the downtown heading west (US 34 and US 36), the route does not change, but the route for motorists entering the downtown area heading east away from RMNP would shift from Moraine Avenue and Elkhorn Avenue to Riverside Drive, putting these visitors one block away from the downtown core. The new route will allow travelers to park along Riverside in the adjacent lots, or turn left on Elkhorn Avenue at Riverside Drive directing them through the commercial core and toward parking on West Elkhorn Avenue and along Moraine Avenue. There is little available parking along Elkhorn Avenue, so patrons to these businesses must find parking at one of the large public parking areas and walk to local businesses.

Most motorists who want to stop in downtown Estes Park would follow signs to existing parking lots. Some motorists who are not committed to shop in the downtown as they drive along Riverside, may be more likely to leave Estes Park without stopping downtown. This possibility would be reduced with proposed way finding signage that directs motorists to the downtown and additional parking opportunities.

This potential incremental loss of customers may be offset by 1) reduced congestion for circulating traffic 2) the benefits of removing disinterested traffic from the downtown core during the afternoon peak period making pedestrian activity more pleasant during the busiest periods of the day and 3) increasing retail sales potential east of the downtown along Riverside where more motorists would see existing, and possibly new, commercial opportunities from vantage points along Riverside.

The one-way route on Elkhorn, Moraine and Riverside would incrementally add travel time and distance for some motorists. For some community members, the one-way route creates circuitous travel to obtain access to local businesses and the U.S. Post Office. The increased travel distances and travel times would be offset during peak periods with more efficient travel through the downtown. Eastbound motorists destined for downtown, but unable to find parking along Riverside or within the Riverside parking lots, would need to follow the loop to access on-street parking and off-street parking lots along Moraine and those spaces accessible from West Elkhorn.

Traffic Increase along Riverside Drive*:* The conversion of the Riverside corridor from a low-volume two-lane roadway to a one-way state highway. With associated impacts to land, tree removal, and increased noise and motor vehicle emissions, could incrementally impact the qualities that make the Riverside corridor an attractive location for recreation, lodging, and dining. The modifications to the roadway may affect the demand for businesses that benefit from a quiet setting compatible with a mountain environment. However, increased visibility associated with higher local and tourism traffic through the corridor could present an opportunity for new and existing businesses especially those intended for convenience and lodging. Refer to *Section 3.16 Parks, Recreation, Open Space, and Section 4(f) and 6(f)* for a description of associated impacts to parks and recreational lands, and recommended mitigation to offset these impacts.

Construction Expenditures*:* Project construction would lead to a short-term increase in the number of construction jobs in the area. This would likely add to the personal income levels for these workers, and would provide benefit to the local economy through expenditures made by contractors/employees for lodging and retail needs.

Construction Disruption*:* Rehabilitation (milling and repaving) of Elkhorn and Moraine Avenues and the restriping and signing associated with the one-way couplet on these streets would create off-peak season business visibility and accessibility impacts. These effects would be temporary and could be addressed through standard techniques to maintain traffic flow and direct pedestrians to shops near construction activity. Refer to *Section 3.1: Transportation*.

Reconstruction of Riverside Drive from Moraine Avenue to Elkhorn Avenue, inclusive of bridge demolition and construction, grading and use of parking lots for construction staging (material, equipment, and vehicle storage) would disrupt businesses with access points along East and West Riverside, Ivy Street and Rockwell Street. This disruption is most likely to occur in the off-peak season, but could still adversely impact business visibility and resident accessibility to downtown shops and other shopping areas.

Reconstruction of Riverside Drive will require the use of the parking lots accessible via Rockwell Street and Riverside Drive for staging and equipment access. The loss of parking spaces during the construction period would have adverse effects when demand exceeds available parking spaces. These effects would be temporary and the disruption would shift along the corridor as various construction activities begin and end. Traffic flow along Moraine and over the Big Thompson River would be maintained, but travel time increases would be expected along with temporary detours.

3.5.3 Mitigation Measures

No Action Alternative

No mitigation required.

Proposed Action

Recommended mitigation includes:

- Comply fully with federal and state requirements, including the Uniform Act, for all acquisition and relocation.
- Design the Proposed Action to maintain and, where possible, improve access to existing businesses.
- Work with stakeholders to incorporate design features to enhance business and tourism opportunities.
- Install signage to guide motorists to the downtown shops, parking, and National Park entrances and direct motorists to less congested routes during peak congestion periods.
- Seek to minimize the loss of parking spaces during detailed design.
- Initiating a Wayfinding Signage Plan to (shown in Figure 3.5-2):
    - Define off-street pedestrian routes and clearly define optimum pedestrian routes along Riverside and crossings of Elkhorn, Moraine and Riverside
    - Define off-street and on-street bicycle routes through and around the downtown, including maps showing area-wide routes
    - Define routes and entrances to downtown on-street and off-street parking, including peripheral parking lots east of downtown
    - Identify transit options and stops east of downtown and within downtown

Construction Disruption

To lessen the level of construction impact, the following will be initiated:

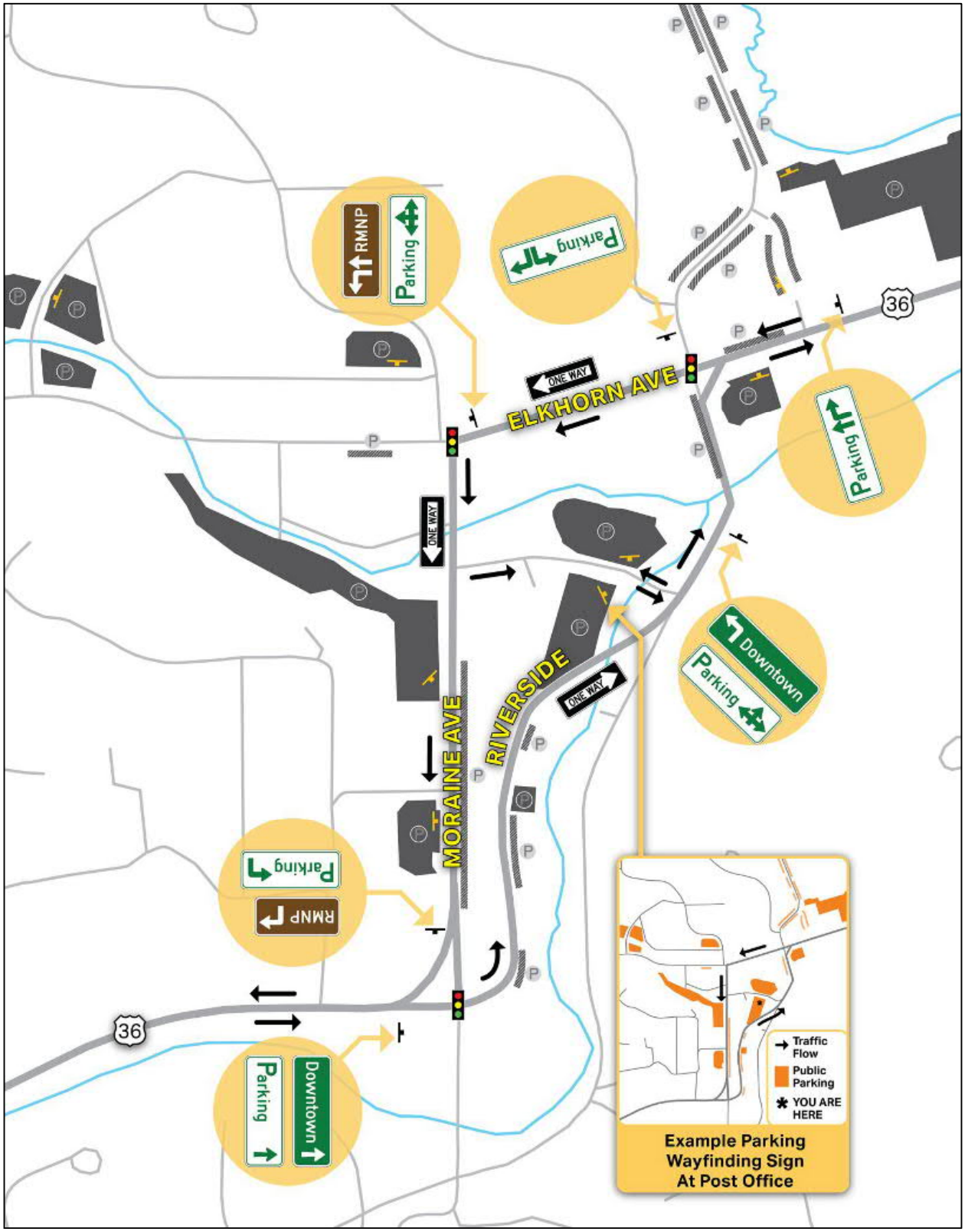
- Conduct regular public outreach to inform residents, business owners, business operators and visitors of construction activities and scheduling, and provide options for travel routes and parking in the area. Include public outreach to let the local community and region know that the downtown is open for business.
- Provide pedestrian access to businesses via sidewalks and trails. Provide trail detours.
- Maintain availability of vehicle access along Elkhorn, Moraine, Riverside and other local streets to the extent possible through implementation of specific construction phase measures that maintain traffic. If closures are required and considered unavoidable, the process will apply techniques to minimize the duration of the closure.
- Incorporate stakeholder involvement at final design to enhance access, parking, and aesthetic features that would contribute to business and tourism potential.
- Implement the reconstruction of the Moraine Avenue/Crags Drive intersection and Riverside Drive reconstruction and bridge construction so that the majority of the work is completed in the fall/winter/spring months.

- Implement the resurfacing and traffic signal installations required on Elkhorn and Moraine Avenue with daytime shoulder and single lane closures.
- Develop a construction staging plan that minimizes impact to existing parking and business access.

The following are outside the scope of this project but may benefit the future Estes Park economy/downtown area. The Town of Estes Park should consider:

- Moving forward with projects that would add parking in and near the downtown and seek additional funding to increase parking availability and enhance transit service in collaboration with the National Park Service.
- Exploring the possibility of adding paid parking/parking meters in the downtown core as a means of generating revenue and optimizing economic activity in the downtown through increased parking space turnover.

Figure 3.5-2: Downtown Estes Wayfinding Signage Example



Conceptual Plan (subject to change): final details to be determined in coordination with Downtown Plan and final design of this project.

3.6 Air Quality

This section addresses regional and local air quality conditions and potential effects of the alternatives on air quality.

3.6.1 Affected Environment

Criteria Air Pollutants

In accordance with the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for the following six air pollutants:

- Carbon monoxide
- Ground level ozone
- Nitrogen dioxide (NO2)
- Sulfur dioxide (SO2)
- Lead
- Microscopic particles referred to as “particulate matter” (PM) for two size ranges: 2.5 micrometers in diameter and 10 micrometers in diameter. These are referred to as $PM_{2.5}$ and PM_{10}, respectively.

The NAAQS indicate the concentration of pollutants in the air that should not be exceeded in order to protect human health. The 1991 Clean Air Act Amendment (CAAA) established regulations to ensure that proposed federal transportation plans, programs, or projects will not cause or contribute to a NAAQS violation in areas with ongoing or past NAAQS violations. These “conformity” regulations are detailed in 40 CFR Part 93.

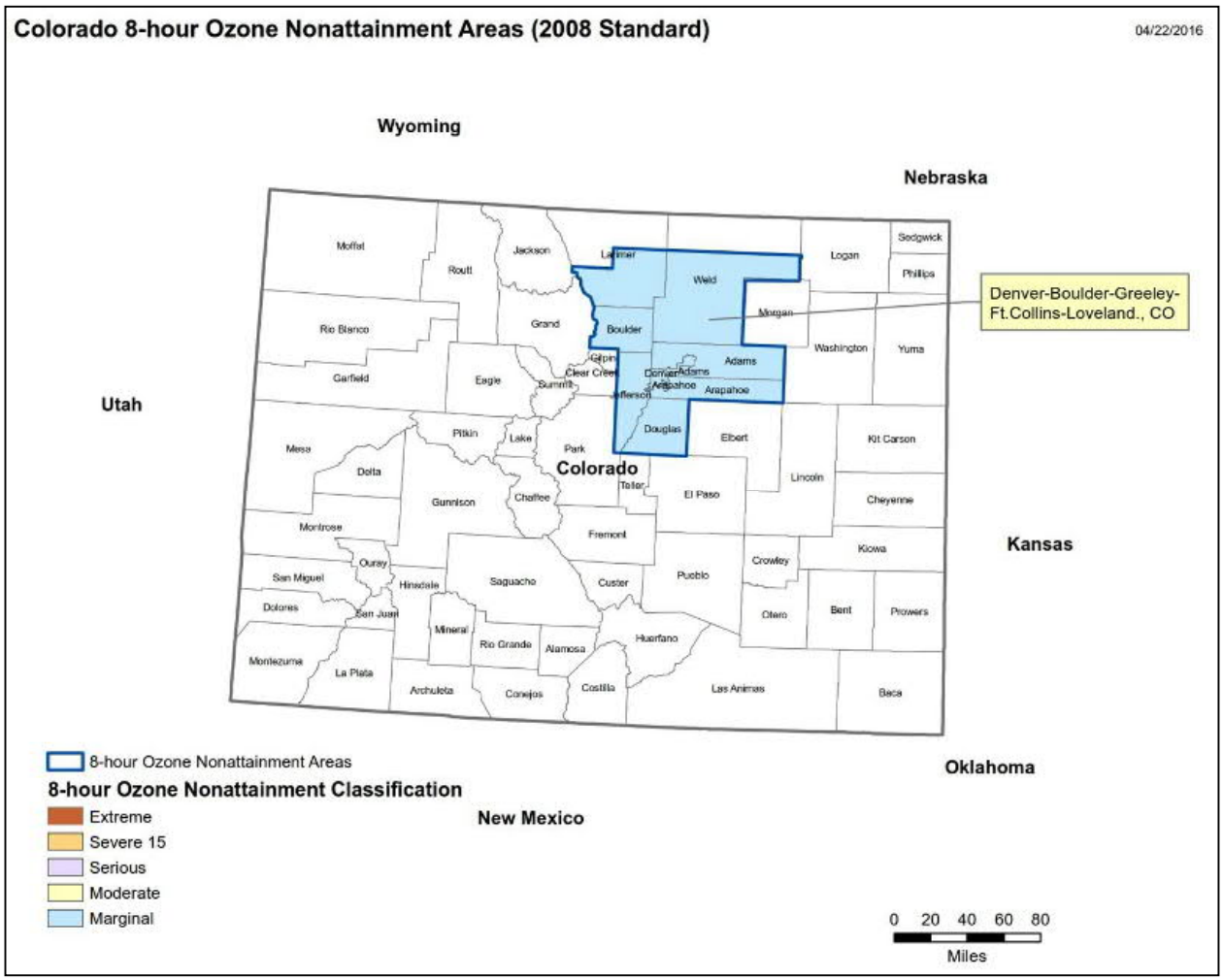
Geographic areas are classified as having non-attainment, attainment, or maintenance of NAAQS. Areas that exceed a particular NAAQS for a criteria pollutant are considered “non-attainment” areas for that pollutant. Conversely, areas that are below a criteria pollutant standard are considered “attainment” areas. A maintenance area is an area that was designated nonattainment for one of the NAAQS, but later met the standard and was re-designated to attainment.

Ozone associated with the NAAQS is formed in the lower atmosphere by photochemical reactions involving hydrocarbons, nitrogen-containing gases, and sunlight. Fossil fuel combustion is a primary source of the hydrocarbons and nitrogen-containing gases that form ozone in the lower atmosphere.

Existing Air Quality

The project site is located in Estes Park, Colorado, which is part of the Denver-Boulder-Greeley-Fort Collins-Loveland 2008 8-hour ozone nonattainment area. The nonattainment area includes all of Boulder, Jefferson, Douglas, Arapahoe, and Adams Counties and the southern portion of Weld and Larimer Counties. Estes Park is located in the southern portion of Larimer County and thus is included in the ozone nonattainment area. Figure 3.6-1 presents the boundaries of the Denver-Boulder-Greeley-Fort Collins-Loveland ozone nonattainment area.

Figure 3.6-1: Colorado Ozone Nonattainment Areas



Source: EPA 2016.

Haze is an atmospheric phenomenon where dust, smoke, and other dry particles obscure the clarity of the sky and hence affect visibility. These pollutants include fine particulate matter ($PM_{2.5}$), and compounds that contribute to $PM_{2.5}$ formation such as nitrogen oxides (NO_x), SO_2, certain volatile organic compounds (VOCs), and ammonia (NH_3). Sources for the fine particles that create haze include soil tillage, transportation, manufacturing, and forest fires.

The Regional Haze Rule, instituted in 1999 by the EPA, calls for state and federal agencies to work together to improve visibility in 156 National Parks, wilderness areas, and designated portions of Indian Reservations. Such areas are known as Class 1 airsheds. An airshed is a geographic area that, because of topography, meteorology and/or climate, is frequently affected by the same air mass. The CAA defines mandatory Class I federal airsheds as certain national parks (over 6,000 acres), wilderness areas (over 5,000 acres), national memorial parks (over 5,000 acres), and international parks that were in existence as of August 1977. The Class I designation requires the highest level of protection under the CAA.

RMNP has been a designated Class 1 Airshed since 1977. Research and monitoring are showing RMNP air quality is affected by air pollution from a variety of human made sources. Air pollution in the park reduces visibility, increases ozone levels and causes excess nitrogen deposition. The State of Colorado is working to reduce air pollution through strategies including engine regulations, vehicle standards and power plant controls which should improve visibility conditions in the park. The park is prone to high ozone levels on warm, summer afternoons and evenings. Car exhaust from Front Range communities is a main source of nitrogen oxides.

General Conformity

General conformity requirements were adopted by Congress as part of the CAAA and were implemented by EPA regulations in the November 30, 1993 Federal Register (40 CFR Sections 6, 51, and 93: "Determining Conformity of General Federal Actions to State or Federal Implementation Plans; Final Rule"). General conformity requires that all federal actions conform to the State Implementation Plan (SIP) as approved or promulgated by EPA, by determining that the action is either exempt from the General Conformity Rule requirements, or subject to a formal conformity determination.

The purpose of the general conformity program is to ensure that actions taken by the federal government do not undermine state or local efforts to achieve and maintain NAAQS. Before a federal action is taken, it must be evaluated for conformity with the SIP. All reasonably foreseeable emissions, both direct and indirect, predicted to result from the action are taken into consideration and must be identified with respect to location and quantity. Direct emissions occur at the same time and place as the action. Indirect emissions are reasonably foreseeable emissions that may occur later in time and/or farther removed from the action; they are subject to conformity if the federal agency can practicably control them and maintain control through a continuing program responsibility. If it is found that the action would create emissions above *de minimis* threshold levels specified in EPA regulations, the action cannot proceed unless mitigation measures are specified that would bring the project into conformance.

General conformity applies in both federal nonattainment and maintenance areas. In these areas, it applies to any federal action not specifically exempted by the CAA or EPA regulations. General conformity does not apply to projects or actions that are covered by the transportation conformity rule. If a federal action falls under the general conformity rule, the federal agency responsible for the action is responsible for making the conformity determination. In some instances, a state will make the conformity determination under delegation from a federal agency. Private developers are not responsible for making a conformity determination, but can be directly affected by a determination.

The Town of Estes Park is in Larimer County. As described above, the region is designated as nonattainment for the 8-hour ozone standard. Therefore, the General Conformity Rule is applicable for emissions of ozone precursors (VOCs and NO_X) from construction of the Proposed Action. The applicable General Conformity *de minimis* thresholds based on the region's nonattainment status would be 100 tons per year of VOC or NO_X.

Transportation Conformity

In November 1993, EPA, in conjunction with the United States Department of Transportation (DOT), established the Transportation Conformity Rule, as defined in 40 CFR Parts 51 and 93. The rule implements the Federal CAA conformity provisions. The CAAAs require transportation plans, programs, and projects that are funded by or approved under Title 23 United States Code (U.S.C.) or the Federal Transit Act to conform to state or federal air quality plans for achieving NAAQS.

Transportation conformity is a process that ensures transportation plans conform to SIPs and do not degrade air quality. In determining whether a project conforms with an approved air quality plan, agencies must use current emission estimates based on the most recent population, employment, travel, and congestion estimates determined by an area's MPO. The MPOs are required to develop and maintain long-term and short-term plans and programs that set out transportation policies and programs for the region. A conforming transportation plan includes provisions to ensure that the impact of regulated pollutants from approved projects will be reduced to acceptable levels within time frames that meet the NAAQS.

The process is detailed in Colorado Air Quality Control Commission Regulation 10, Criteria for Analysis of Transportation Conformity. In summary, emissions resulting from transportation plans cannot exceed the emission budgets in the applicable SIP. Conformity with SIPs is determined by forecasting future mobile source emissions and comparing these with SIP emission budgets for the relevant pollutant(s).

Consequently, the effects of a specific project included in the SIP are addressed when the overall SIP is analyzed and projects that are proposed, but are not yet included within a SIP, are subject to individual conformity determinations. Estes Park is within the Upper Front Range Transportation Planning Region (UFR). US 36 is considered a medium priority corridor in the 2035 UFR Regional Transportation Plan (RTP).

The North Front Range Metropolitan Planning Organization is responsible for air-quality conformity throughout the NFRMPO. The Town of Estes Park, while a member jurisdiction of the three-county planning UFR, is not included in the NFRMPO. However, the applicable SIP for Estes Park and the project was prepared by the NFRMPO. With respect to Estes Park, Appendix B of the 2015 Denver North Front Range Ozone Report, NFRMPO Regional Travel Model Description, dated March 2015 states the following:

"To facilitate modeling of the expanded ozone nonattainment area, the model was expanded to cover additional portions of Larimer and Weld counties not within the NFRMPO boundary. The majority of this additional area is very sparsely populated. The expanded area does include the Estes Park area, which is heavily influenced by seasonal tourist activity. To best reflect the unique nature of the Estes Park area, an additional lodging-based trip purpose is included for the area. In addition, the Estes Park area is modeled to represent summer conditions rather than school-season conditions due to the heavily seasonal nature of the area."

Modeling for regionally significant projects in the UFR is done by NFR MPO and included in the NFRMPO's regional emissions analysis. This project is included in the adopted UFR 2040 Regional Transportation Plan Priority Project Ranking List, but not in the NFR MPO regional

emissions model because it is not considered regionally significant. A project is considered regionally significant when it is in the Metropolitan Transportation System (MTS) and is identified in the fiscally constrained Metro Vision RTP. The MTS includes all principal arterial roadways, major regional arterials roadways, and freeways/tollways, as well as rapid transit facilities.

Mobile Source Air Toxics

Controlling air toxic emissions became a national priority with the passage of the CAAA, whereby Congress mandated that the EPA regulate 188 air toxics, also known as hazardous air pollutants (HAPs). Mobile Source Air Toxics (MSATs) are a subset of the 188 air toxics. MSATs are compounds emitted from roadway vehicles and non-road equipment. Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products.

FHWA's December 6, 2012 Interim Guidance on Mobile Source Air Toxics in NEPA (MSAT Interim Guidance) provided projects with consistent guidance and requirements for evaluating mobile source air toxics (MSATs) in NEPA analyses (FHWA 2012). As part of the MSAT Interim Guidance, FHWA has developed a tiered approach for analyzing MSAT, depending on specific project circumstances. The interim guidance update reflects recent regulatory changes, addresses stakeholder requests to broaden the horizon years of emission trends, and updates stakeholders on the status of scientific research on air toxics. The guidance is described as interim because MSAT science is still evolving. As the science progresses, FHWA will update the guidance accordingly.

The analysis below will use the MSAT Interim Guidance to evaluate its potential MSAT effects.

3.6.2 Environmental Consequences

Based on regional and local air quality conditions, a qualitative (rather than quantitative) analysis of air quality impacts is provided for the project. The impact analysis compares impacts of the No Action Alternative and Proposed Action and identifies mitigation measures as needed.

No Action Alternative

Congestion days within the study area are anticipated to increase from 40 days of congestion per year under existing conditions to 147 days per year under No Action Alternative conditions (2040 conditions). Therefore, air quality would continue to degrade over time due to increased vehicle emissions from increased traffic and idling occurring in the downtown area.

Receptors that may be sensitive to air quality conditions in the study area include homes within and adjacent to the downtown area, visitors walking in downtown or along trails within and adjacent to downtown, patrons and employees of businesses downtown and in adjacent areas, as well as patrons to the main U.S. Post Office off Riverside Drive, employees and visitors to Town Hall, the police department, and the library. The increase of more than 250 percent in the number of congestion days would expose these receptors to more vehicle emissions, higher incidental pollutant levels and more frequent odor impacts. This would also contribute to increased degradation of air quality within RMNP.

Proposed Action

Clean Air Act General Conformity Analysis

Under the Proposed Action, it is anticipated that even without adding capacity in the study area, traffic operations would improve beyond the No Action Alternative and therefore result in a slight reduction in air quality emissions resulting from reduced vehicle idling and more efficient vehicle operating speeds. Thus, the change in long-term operations associated with the Proposed Action would not indirectly generate emissions that exceed any of the applicable *de minimis* thresholds.

Transportation Conformity

As described above, the Proposed Action is not considered regionally significant and does need to be modeled for transportation conformity purposes. It is anticipated that the Proposed Action would result in an improvement to air quality conditions because it would improve local traffic operations and safety, through a net decrease in congestion and allow vehicles in the affected area to travel at more efficient vehicle speeds.

Regional Haze

Regional haze impacts are a result of cumulative air quality emission sources in a region. To perform a regional visibility analysis, long-range transport dispersion models that account for atmospheric chemical reactions are required. Emissions that can contribute to visual impairment and regional haze include primary or secondary emissions of SO2, NOx, VOCs, and PM.

The Proposed Action would generate short-term construction emissions over the anticipated 12- to 24-month period. Based on the magnitude and temporary nature of construction activities involved in the Proposed Action, it is unlikely that the Proposed Action would substantially contribute to regional haze impacts. In addition, following completion of the Proposed Action, traffic operations would improve beyond No Action conditions. Therefore, when considering the long-term impacts of the Proposed Action, exhaust-related emissions such as VOC, SO2, PM, and NOx, which contribute to regional impairment and air quality in RMNP, would be reduced as a result of less vehicle idling and vehicles traveling at more fuel efficient speeds.

Local Impacts within Downtown Estes Park

The Proposed Action is anticipated to provide more efficient motor vehicle travel and reduce the number of days where congestion occurs, compared to the No Action Alternative. Under the Proposed Action, the proposed roadway configuration would allow for a greater number of vehicles to move through, which would help reduce idling at intersections. These changes would reduce emissions as well as reduce odor impacts on downtown visitors due to fewer idling vehicles compared to the No Action Alternative. In addition, vehicle emissions would be divided between the Elkhorn/Moraine Avenue Corridor and the Riverside Drive Corridor, reducing the accumulated total emissions at receptor locations (i.e., sidewalks). Vehicular emissions along the Riverside Drive Corridor would likely increase relative to No Action conditions due to the increase in traffic volume. This increase is not expected to violate air quality standards, but would introduce emission and odors near park, residential, and commercial receptors.

Mobile Source Air Toxics

EPA has not established regulatory concentration targets for the relevant MSAT pollutants appropriate for use in the project development process. For the same reason, states are neither required to achieve an identified level of air toxics in the ambient air nor identify air toxics reduction measures in the SIP. Developing strategies for reduction of MSATs is a cooperative effort between federal and local authorized agencies.

Assessment of the Proposed Action MSAT Effects

As part of the traffic operations improvements, the Proposed Action would not expand the roadway capacity of the affected arterials and therefore is not anticipated to generate additional vehicle traffic in the project area. The arterials that would be affected by the Proposed Action would carry summertime traffic of 29,600 on East Elkhorn Avenue (the highest daily traffic figure in the Project area). Pursuant to the MSAT Interim Guidance, Appendix B of the MSAT Interim Guidance was used to qualitatively evaluate the Proposed Action's MSAT effects.

Analysis of MSATs

The amount of MSATs emitted would be proportional to the VMT, assuming that other variables such as fleet mix are the same. Given that the Proposed Action would not result in a substantial net increase in VMT in the project area, it is not anticipated that the Proposed Action would lead to higher MSAT emissions compared to the No Action Alternative. Furthermore, because the Proposed Action would result in decreased congestion, MSAT emissions could be reduced due to increased speeds; according to EPA's MOVES2010b model, emissions of all of the priority MSATs decrease as speed increases.

Because the estimated VMT under the Proposed Action and No Action Alternative would be nearly the same, it is expected there would be no appreciable difference in overall MSAT emissions associated with the Proposed Action. There may be localized areas, such as the Riverside Drive Corridor, where the Proposed Action could result in localized changes to MSAT emissions, as the sources of emissions would be closer to sensitive receptors. However, even if these changes would occur, MSAT emissions would be substantially reduced compared to existing conditions due to implementation of EPA's vehicle and fuel regulations. EPA's national control programs are projected to reduce annual MSAT emissions by over 80 percent between 2010 and 2050. Local conditions may differ from these national projections in terms of fleet mix and turnover, VMT growth rates, and local control measures. However, the magnitude of the EPA-projected reductions is so great (even after accounting for VMT growth) that MSAT emissions in the study area are likely to be lower in the future in nearly all cases. Therefore, it is not anticipated that the Proposed Action would cause a substantial increase in MSAT emissions in the project area.

Comparison of Impacts of Signalized Intersection and Roundabout

Quantitative hot-spot analysis was not conducted on the Estes Park Loop project for both intersection alternatives. Qualitatively, air quality would be slightly improved under the roundabout alternative compared to the signalized intersection, as the main benefit of a roundabout is the continuous flow of vehicular traffic, as cars generally do not stop at a this type of intersection. Reducing the number of idling vehicles is one of the most important ways to reduce air quality impacts for transportation systems.

Construction Impacts

The Proposed Action would generate short-term construction emissions during roadway construction activities. Emissions of VOC and NOx would be generated as a result of construction equipment, material haul trucks, and construction worker vehicles. Construction activities are anticipated to last approximately 8 to 10 months, during which construction emissions would vary day-by-day based on the types of construction activities occurring. Construction phases that require additional mechanical power, such as bridge removal or site grading, would likely generate higher emissions due to the use of heavy construction equipment. Although construction of the Proposed Action would generate air quality emissions that contribute to cumulative regional levels, based on the magnitude of proposed construction activities, it is not anticipated that annual VOC or NOX construction emissions would exceed the applicable *de minimis* thresholds. Therefore, the direct impact on regional air quality would be negligible.

3.6.3 Mitigation

The following mitigation measures are proposed to reduce potential emissions from construction activities:

- CFLHD and its contractors will comply with the fugitive dust permitting and control requirements of the Colorado Air Quality Control Commission (CAQCC), as applicable.
- CFLHD and its contractors will implement construction best management practices to control potential emissions of fugitive dust and reduce potential emissions from construction vehicles/equipment during construction. Best practices may include, but are not limited to, the following:
    - Apply water and chemical stabilizers in active construction areas and on haul roads as necessary to suppress dust.
    - Post speed limit signs and enforce speeds in active construction areas and on haul roads.
    - Water, perform soil compaction, and revegetate disturbed areas, as needed and appropriate for site conditions.
    - Cover haul trucks, as appropriate, to reduce dust.
    - Require construction contractor to limit the idling equipment time.

3.7 Noise

This section addresses noise issues associated with the alternatives. Additional information may be found in *Noise Technical Report*, Volume 3. The state and federal transportation departments have developed traffic noise evaluation criteria specifically for their environmental impact analyses. Title 23 CFR Part 772 establishes federal standards for the abatement of highway traffic noise (FHWA, 2012). CDOT has developed traffic noise analysis guidance based on the federal standard (CDOT, 2015). All highway projects that involve federal lands or funds must follow these federal regulations and state highway guidelines. Because the proposed project is using federal funds, the project must comply with the federal and state highway guidelines. Table 3.7-1 shows the CDOT Noise Abatement Criteria (NAC) that set the noise impact threshold levels.

Table 3.7-1: CDOT Noise Abatement Criteria

Land Activity Category	CDOT NAC (Leq)	Description of Land Activity Category
A	56 dBA (Exterior)	Tracts of land in which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B[1]	66 dBA (Exterior)	Residential.
C	66 dBA (Exterior)	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or non-profit institutional structures, radio studios, recording studios, schools, Section 4(f) sites, trails, trail crossings, and television studios.
D	51 dBA (Interior)	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or non-profit institutional structures, radio studios, recording studios, schools and television studios.
E	71 dBA (Exterior)	Hotels, motels, offices, restaurants, bars and other developed lands, properties or activities not included in A-D or F.
F	NA	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, ship yards, utilities (water resources, water treatment, electrical), and warehousing.
G	NA	Undeveloped lands that are not permitted for development.

Source: CDOT, Noise Analysis and Abatement Guidelines, 2013.
[1] – Includes undeveloped lands permitted for this activity category.
Leq – Equivalent sound level for a one-hour period.

To summarize the traffic noise analysis process, noise impacts occur when properties near the project roads will produce traffic noise levels at or above the relevant CDOT NAC or future noise levels will increase by 10 dBA or more over existing conditions. Typically, the most crucial NAC on road projects is for homes (Land Activity Category B), which is an hourly Leq of 66 dBA.

Most of the NAC are aimed toward exterior areas of frequent human use on properties. These areas include uses such as yards/decks for Category B, park activity areas for Category C or

exterior dining areas at restaurants for Category E. For a noise impact to occur, an applicable area of frequent human use must be present on the property and the noise level must meet one of the two impact thresholds described above. Because many residential buildings in the study area are used as short-term rental properties, they are therefore classified as Category E receptors, rather than Category B receptors.

On busy roads and highways, the loudest traffic noise generally occurs when the largest traffic volume can travel at the highest speed, which may not be during rush hour if the traffic volumes become so high that roads become congested and speeds slow. This noisiest traffic condition generally corresponds to Level of Service C or D for a highway (CDOT, 2015).

The traffic noise levels are evaluated through computer modeling. Any properties found to be impacted by noise are then considered for abatement actions. Noise abatement actions that are found to be both feasible and reasonable according to CDOT guidelines are recommended for construction under the proposed improvements. Note that for the noise impact discussion, the "peak hour" refers to the highest traffic noise hour, which may or may not correspond to the hour of largest traffic volume.

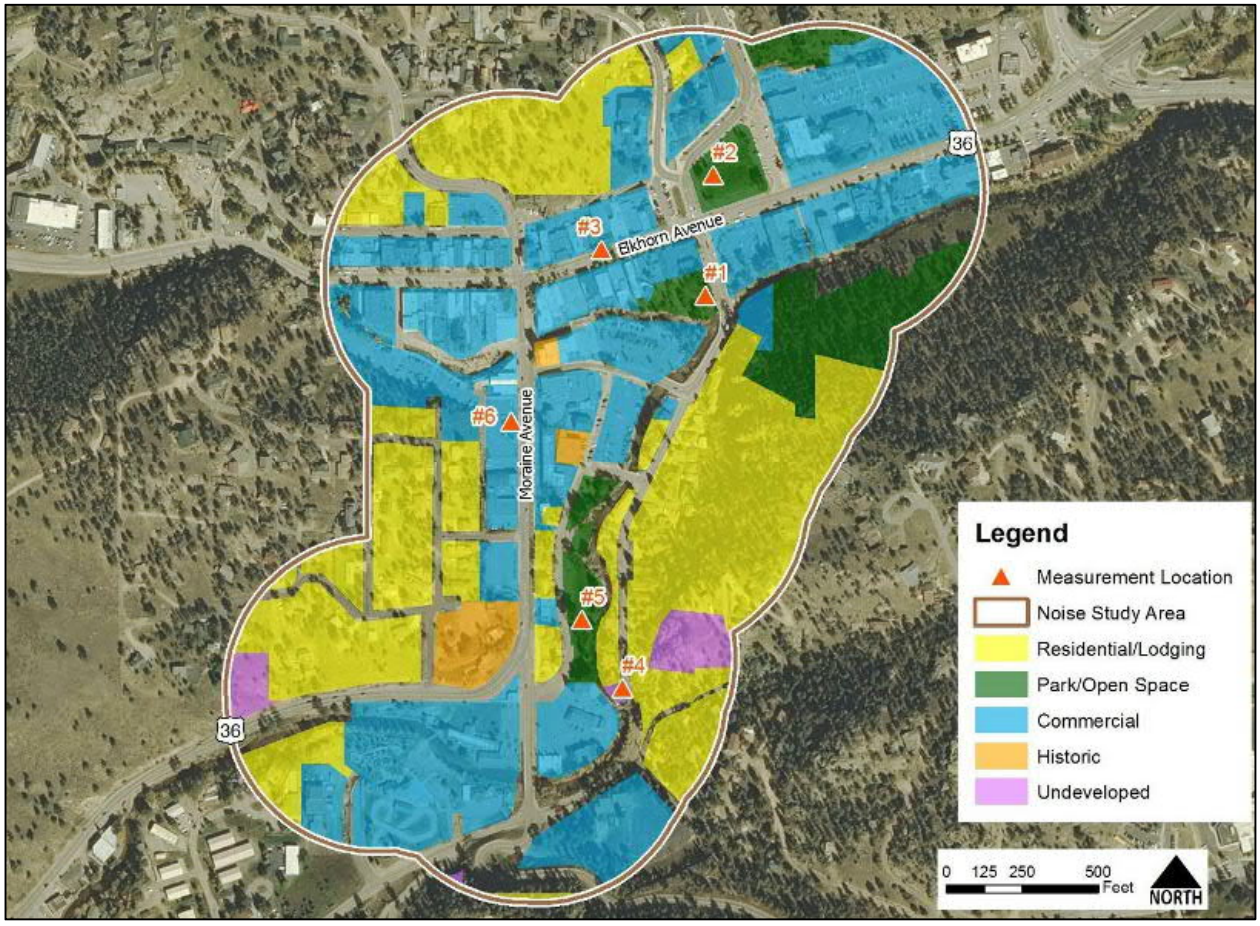
3.7.1 Affected Environment

The current traffic noise conditions in the study area were assessed through a combination of measurements and modeling. There are residential, park and commercial areas within the study area that are of interest to the project. Existing conditions for traffic noise are presented below.

Traffic Noise Measurement Results

Short-term traffic noise measurements were performed at six locations on January 15, 2015 to document ambient conditions for noise model verification, as illustrated on Figure 3.7-1. The analysis examined roads that would be changed or newly built by the project, would have substantially different traffic volumes because of an alternative, or would be important local traffic noise sources. Table 3.7-2 presents the measurement results. None of the measurement results reached or exceeded the CDOT NAC for Category B.

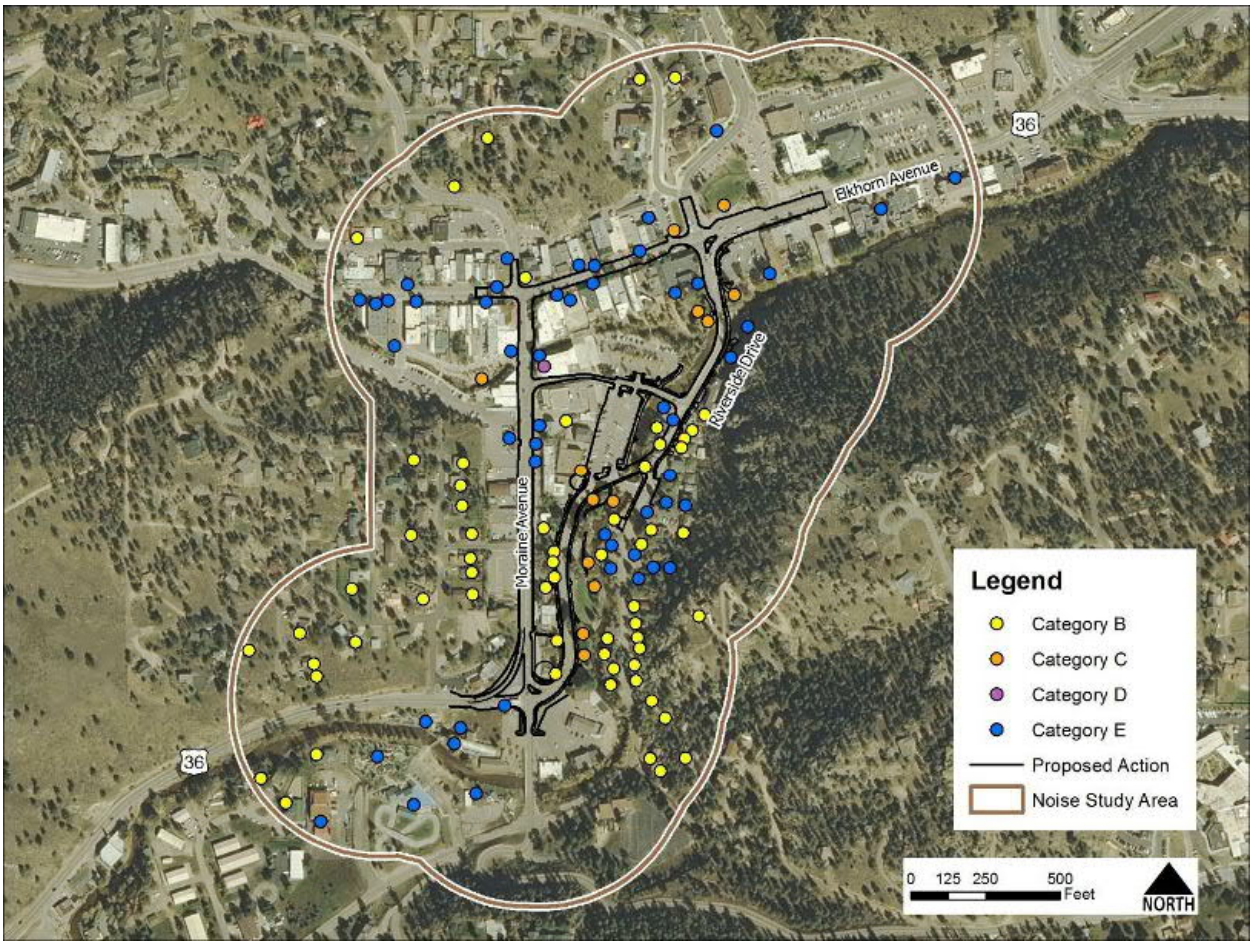
Figure 3.7-1: Noise Measurement Locations and Associated Land Uses



Source: FHU, 2016.

Typically, the noise modeling will represent predicted average daily traffic conditions during peak noise periods. Estes Park is a tourist destination and traffic conditions are very seasonal, and volumes can be inconsistent from week to week. The *Traffic Conditions Technical Report*, Volume 3, describes the decisions made to evaluate traffic volumes and operations. In accordance with those decisions and the CDOT guidance, the existing traffic conditions noise model included the 2014 road configurations and volumes for the 30th busiest traffic hour of a year.

Figure 3.7-2: Modeled Traffic Noise Points and Activity Categories



Source: FHU, 2016.

Table 3.7-2: Existing Traffic Noise Measurement Results

Location Number	Location Description	Activity Category*	CDOT NAC (dBA)*	Measured Leq (dBA)
1	Confluence Park North	C	66	57.1
2	Bond Park	C	66	55.7
3	145 Elkhorn Avenue	E	71	65.2
4	257 East Riverside Drive	G	None	56.2
5	Riverside Park	C	66	52.2
6	201 Moraine Avenue	E	71	60.3

Source: FHU, 2016.

Traffic Noise Verification Model

As a check on noise model parameters, the traffic conditions observed during the noise measurements were used to construct a verification model in FHWA's traffic noise model. The intent was to check the accuracy of the noise levels calculated through a model that reflected the road alignment, traffic volumes, and model receptors at the time of field measurement. A

close match between model results and field measurements ensured that the traffic noise models provided accurate noise results (CDOT 2015).

The verification models covered the areas where noise level measurements were made. The model was constructed using the same approach as the alternatives models.

The verification results were in close agreement with the measurements, as shown in Table 3.7-3. The results were acceptable according to the CDOT guidelines (CDOT 2015), which require the difference in results to be no more than 3 dBA.

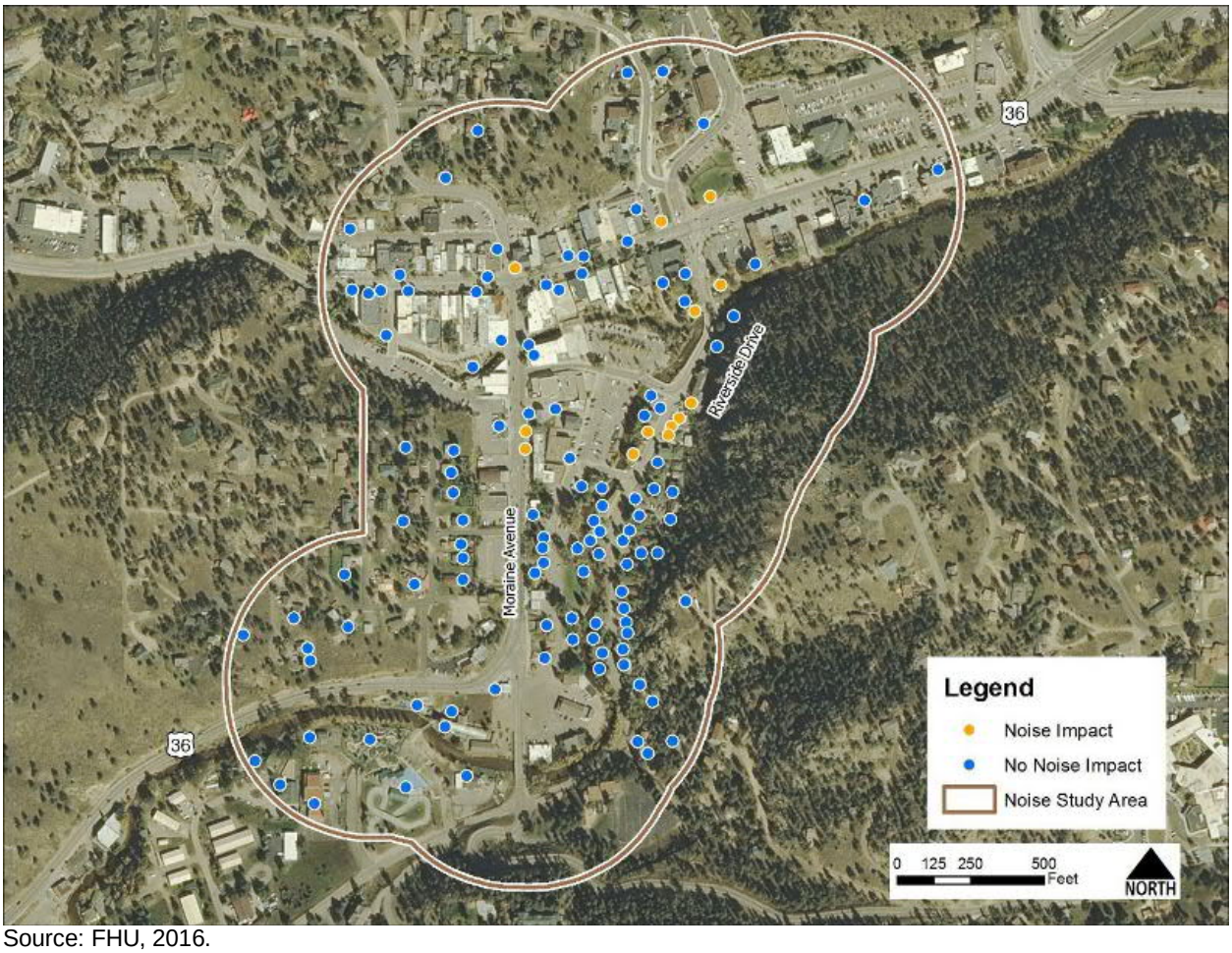
Table 3.7-3: Verification Noise Model Results

Location Number	Location	Measurement Leq (dBA)	Verification Model Result (dBA)	Difference (dBA)
1	Confluence Park North	57.1	56.9	-0.2
2	Bond Park	55.7	57.4	+1.7
3	145 Elkhorn Avenue	65.2	64.1	-1.1
4	257 East Riverside Drive	56.9	54.9	-2.0
5	Riverside Park	52.2	51.8	-0.4
6	201 Moraine Avenue	60.3	57.3	-3.0

Source: FHU, 2016.

A total of 128 points were modeled for traffic noise. Overall, the calculated noise level range for the model points was 43-72 dBA. These results showed 13 modeled points representing 13 receptors (seven residences, four park areas and two dining areas or downtown public seating areas) were calculated to be impacted through existing traffic noise levels being above the NAC during the peak noise hour, as shown in Figure 3.7-3.

Figure 3.7-3: Noise Impacts from Existing Conditions Model



Source: FHU, 2016.

3.7.2 Environmental Consequences

Two alternatives are being evaluated for the project – No Action and the Proposed Action. Future roadway traffic scenarios were modeled to predict 2040 noise levels for study area receptors for both alternatives. The traffic noise modeling effort was conducted to assess whether 2040 noise levels near the project alternatives would exceed relevant CDOT thresholds. If so, abatement measures to alleviate the predicted impacts were considered and evaluated for the Proposed Action following CDOT guidelines. The models included the major project roads using predicted future traffic volumes and road layouts.

No Action Alternative

The 2040 noise impact results for the No Action Alternative are shown on Figure 3.7-4 (the points indicate noise receptors). Calculated noise level range for the model points was 58-73 dBA. These results showed that 27 modeled points, representing 27 receptors (13 residences, 5 park areas and 9 dining areas or downtown public seating areas along Elkhorn Avenue), were calculated to be impacted through 2040 traffic noise levels being above the NAC during the peak noise hour, as shown in Table 3.7-4. No receptors are expected to experience a 10-dBA increase; the largest increase is predicted to be 2 dBA.

Proposed Action

Proposed Action with Signalized Intersection Option

The noise impact results for the Proposed Action with an intersection at Moraine/Riverside are shown on Figure 3.7-5. Eleven model points representing twelve receptors would be removed if the Proposed Action is constructed.

These results showed 30 modeled points, representing 32 receptors (10 residences, 9 park areas, 1 seating area at the Post Office, and 12 dining areas or downtown public seating areas) were calculated to be impacted through 2040 traffic noise levels being above the NAC during the peak noise hour, as shown in Table 3.7-4. Overall, the calculated noise level range for the model points was 46-73 dBA. No receptors are expected to experience a 10-dBA increase; the largest increase is predicted to be 7 dBA.

Proposed Action with Roundabout Option

The noise impact results for the Proposed Action with a roundabout at Moraine/Riverside are shown on Figure 3.7-6. Eleven model points representing twelve receptors would be removed if the Proposed Action is constructed. Three of the removed receptors were impacted under the No Action Alternative.

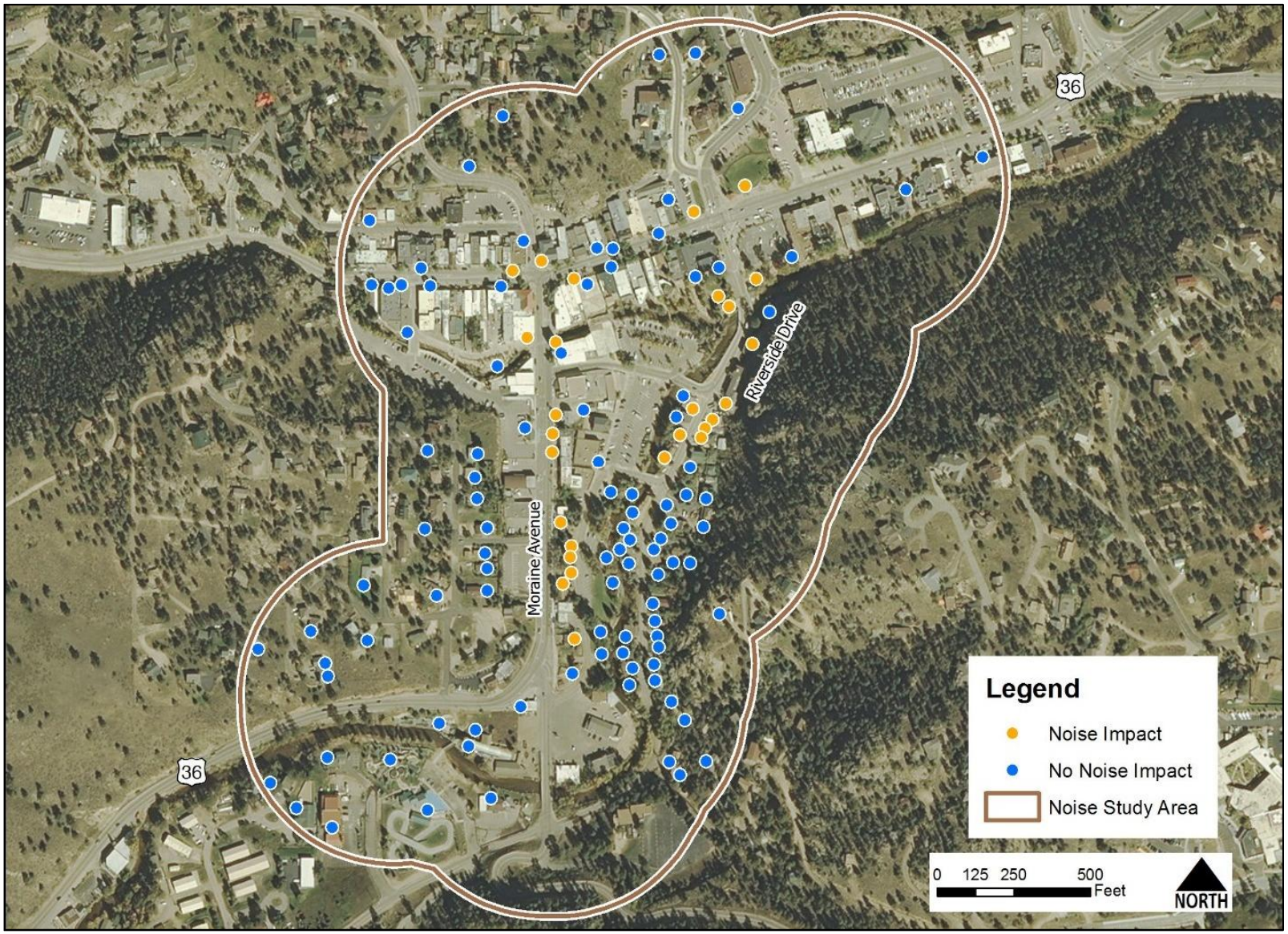
The calculated noise level range for the model points was 46-73 dBA. These results showed 30 modeled points, representing 32 receptors (10 residences, 9 park areas, 1 seating area at the Post Office, and 12 dining areas or downtown public seating areas along Elkhorn Avenue) were calculated to be impacted through 2040 traffic noise levels being above the NAC during the peak noise hour, as shown in Table 3.7-4. No receptors are expected to experience a 10-dBA increase; the largest increase is predicted to be 7 dBA.

Table 3.7-4: Summary of Receptors Impacted by Traffic Noise

Land Use Category	Existing Conditions (2015)	No Action (2040)	Proposed Action (Intersection) (2040)	Proposed Action (Roundabout) (2040)
Category B	7	13	10	10
Category C	4	5	10	10
Category E	2	9	12	12
Total	**13**	**27**	**32**	**32**

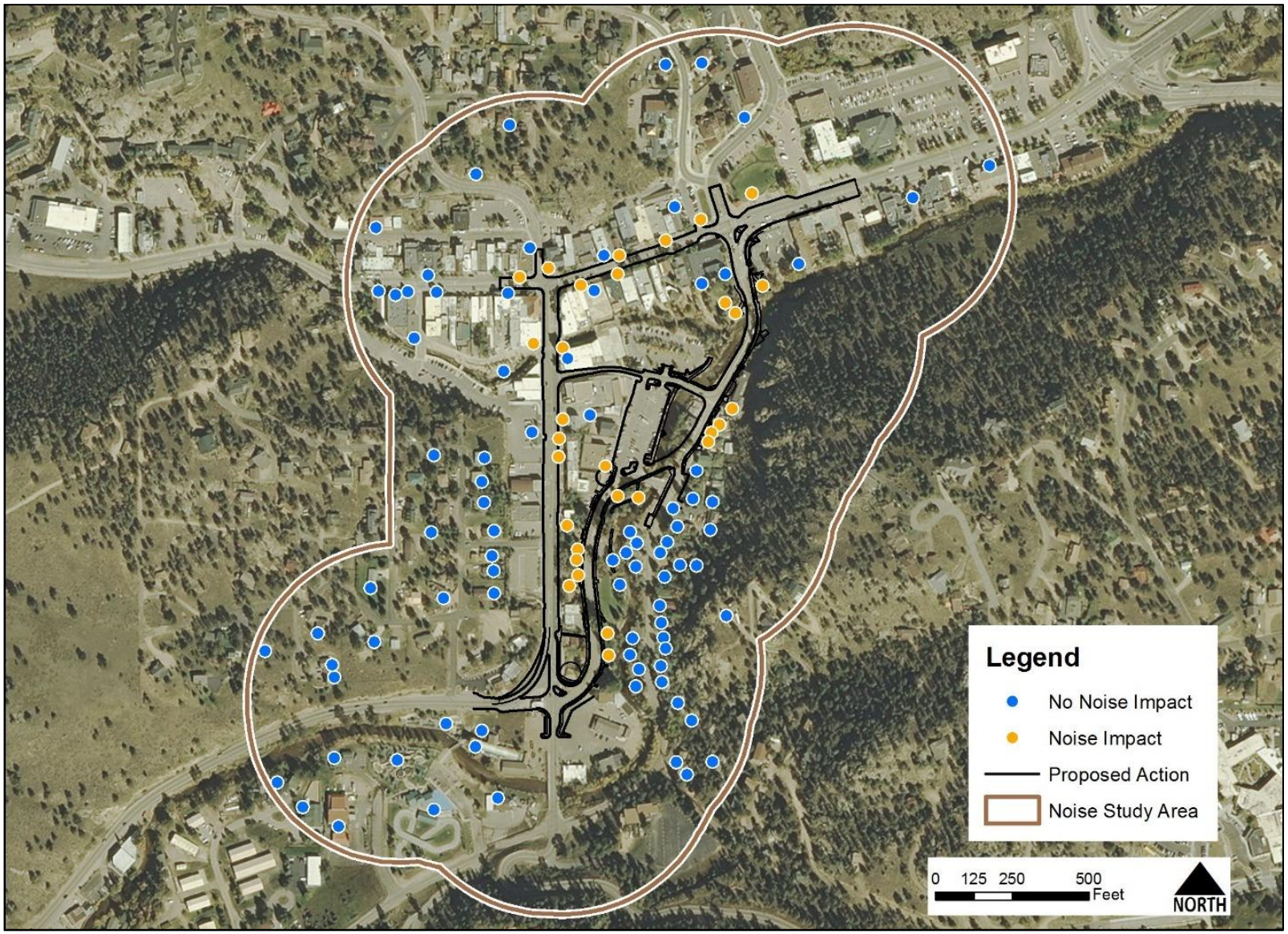
Source: FHU, 2016.

Figure 3.7-4: Noise Impacts for No Action Alternative (Year 2040)



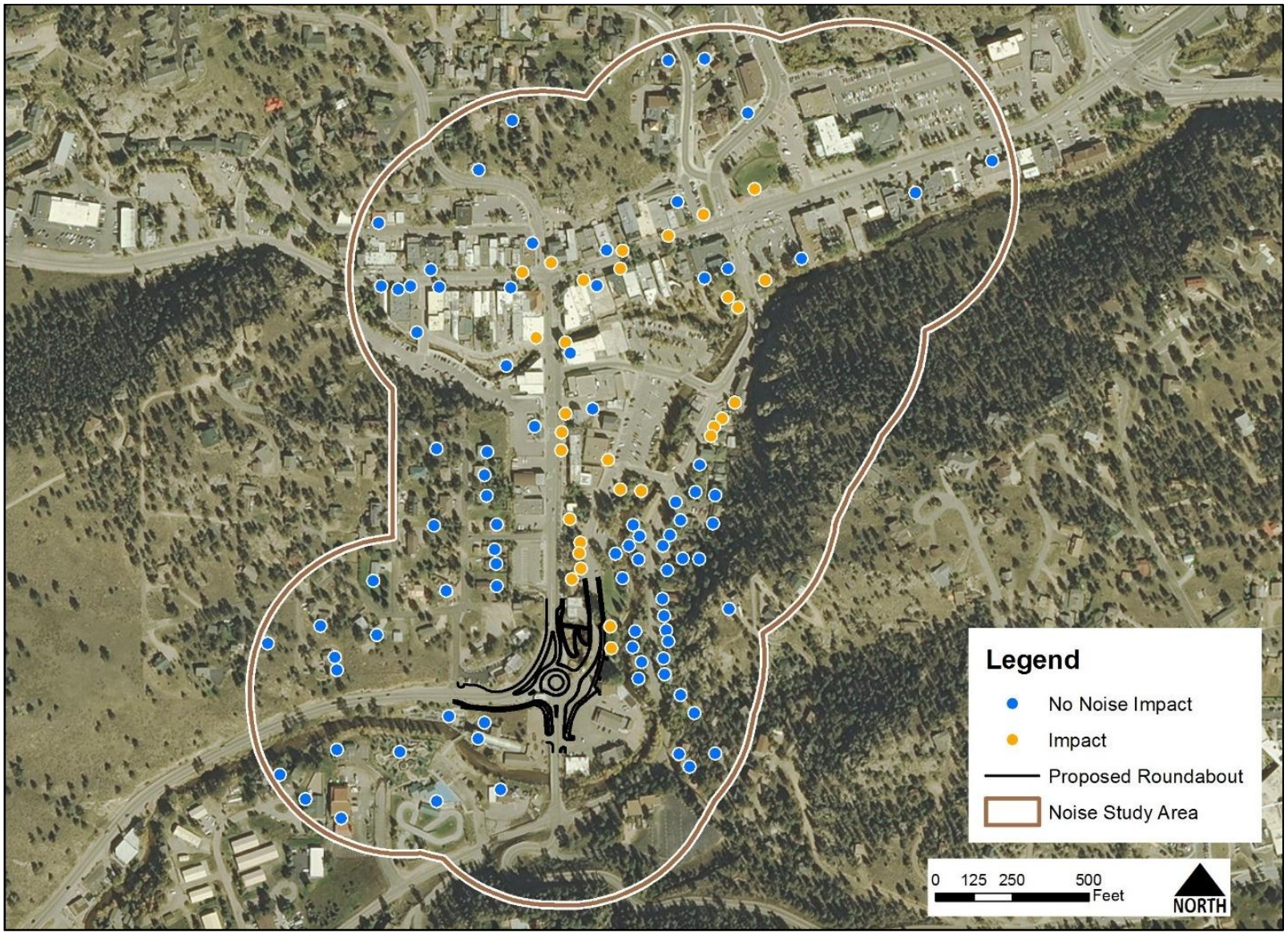
Source: FHU, 2016.

Figure 3.7-5: Noise Impacts for Proposed Action (Year 2040 with Signalized Intersection at Moraine/Riverside)



Source: FHU, 2016.

Figure 3.7-6: Noise Impacts for Proposed Action (Year 2040 with Roundabout at Moraine/Riverside)



Source: FHU, 2016.

Table 3.7-5: Modeled Noise Levels

Model Point*	CDOT NAC (dBA)	No. of Receptors	Existing (2014) Leq (dBA)	Existing Result	No Action (2040) Leq (dBA)	No Action Result	Proposed Action Intersection (2040) Leq (dBA)	Proposed Action Intersection Result	Proposed Action Roundabout (2040) Leq (dBA)	Proposed Action Roundabout Result
E004	71	1	67		68		NA	Removed	NA	Removed
E012	71	1	72	Impact	73	Impact	73	Impact	73	Impact
E013	71	1	71	Impact	73	Impact	72	Impact	72	Impact
E015	71	1	70		71	Impact	71	Impact	71	Impact
E018	71	1	69		71	Impact	73	Impact	73	Impact
E019	71	1	69		71	Impact	72	Impact	72	Impact
E021	71	1	70		72	Impact	73	Impact	73	Impact
B023 2	66	1	66	Impact	68	Impact	69	Impact	69	Impact
E024	71	1	70		71	Impact	72	Impact	72	Impact
E027	71	2	66		68		71	Impact	71	Impact
E028	71	2	66		68		72	Impact	72	Impact
E029	71	1	68		69		73	Impact	73	Impact
C031	66	1	67	Impact	68	Impact	73	Impact	73	Impact
C033	66	1	67	Impact	67	Impact	72	Impact	72	Impact
C037	66	1	67	Impact	68	Impact	70	Impact	70	Impact
C038	66	1	65		67	Impact	69	Impact	69	Impact
C039	66	1	68	Impact	68	Impact	71	Impact	71	Impact
E040	71	1	65		66		NA	Removed	NA	Removed
E041	71	1	69		71	Impact	NA	Removed	NA	Removed
E042	71	1	67		68		NA	Removed	NA	Removed
B043	66	1	69	Impact	70	Impact	71	Impact	71	Impact
E044	71	1	69		71	Impact	NA	Removed	NA	Removed
B045 3	66	1	60		62		NA	Removed	NA	Removed
B046	66	1	67	Impact	69	Impact	70	Impact	70	Impact
B047	66	1	67	Impact	69	Impact	69	Impact	69	Impact
B048	66	1	68	Impact	69	Impact	NA	Removed	NA	Removed
B049	66	1	67	Impact	68	Impact	68	Impact	68	Impact
E050	71	1	66	Impact	68	Impact	NA	Removed	NA	Removed
C051	66	1	61		63		66	Impact	66	Impact

Model Point*	CDOT NAC (dBA)	No. of Receptors	Existing (2014) Leq (dBA)	Existing Result	No Action (2040) Leq (dBA)	No Action Result	Proposed Action Intersection (2040) Leq (dBA)	Proposed Action Intersection Result	Proposed Action Roundabout (2040) Leq (dBA)	Proposed Action Roundabout Result
C053	66	1	62		64		69	Impact	69	Impact
C054	66	1	62		63		66	Impact	66	Impact
B058	66	1	59		61		NA	Removed	NA	Removed
B059	66	1	65		67	Impact	68	Impact	68	Impact
B065	66	1	64		66	Impact	71	Impact	71	Impact
B068	66	1	64		66	Impact	70	Impact	70	Impact
B073	66	1	64		66	Impact	71	Impact	71	Impact
B076	66	1	65		67	Impact	68	Impact	68	Impact
C079	66	1	62		64		67	Impact	66	Impact
B082	66	1	64		66	Impact	NA	Removed	NA	Removed
C085	66	1	62		64		66	Impact	66	Impact
B088	66	2	63		65		NA	Removed	NA	Removed

Source: FHU, 2016.

* Letter in the name indicates the Activity Category for the receptor

Note: This table only shows impacts (under any of the alternatives). A full table showing all receptors is provided in the *Noise Technical Report*, Volume 3.

NA = not applicable; receptor would be removed by Proposed Action

Construction Noise

Adjoining properties in the study area could be exposed to noise from construction activities from the Proposed Action. The construction activities would be common road construction equipment and methods, such as milling/paving equipment, dump trucks, loaders, backhoes, jackhammering, excavating and the like. Construction noise differs from traffic noise in several ways:

- Construction noise lasts only for the duration of the construction event, with most construction activities in noise-sensitive areas being conducted during hours that are least disturbing to adjacent and nearby residents.
- Construction activities generally are short-term and, depending on the nature of the construction operations, could last from seconds (i.e., a truck passing a receptor) to months (i.e., constructing a bridge).
- Construction noise is intermittent and depends on the type of operation, location, and function of the equipment, and the equipment usage cycle.

Construction noise is not assessed like operational traffic noise; there are no CDOT NACs for construction noise. Construction noise would be subject to relevant local regulations and ordinances, and any construction activities would be expected to comply with them.

The Proposed Action will also alter the Big Thompson River streambed from approximately Riverside Drive to North St. Vrain Avenue. Clearly, these modifications are not traffic related. This construction is expected during a later phase of the project, when funding is identified. It is currently expected this construction may involve blasting. Blasting is beyond the scope of a traffic noise analysis and cannot be analyzed by the traffic noise tools. Blasting would be an exceptional event that should be handled on a case by case basis with local authorities. Appropriate actions should be taken to prevent damage and disruption to neighbors, which will be coordinated with the Town prior to the blasting events. Actions may include: consulting with blasting experts; acquiring any necessary variances; minimizing amounts of explosives used; employing appropriate protection methods; notifying neighbors in advance; and, timing blasting activities for the least disruption.

3.7.3 Mitigation

The results from the traffic noise analysis indicated that receptors would be impacted by noise under both the No Action and Proposed Action. Therefore, potential abatement actions for the impacted receptors under the Proposed Action were investigated in accordance with relevant guidelines (CDOT, 2015; FHWA, 2011). Impacted areas are not guaranteed abatement measures under these guidelines, but abatement measures for the areas must be evaluated for feasibility and reasonableness.

Several types of noise abatement for the impacts were considered. Noise barriers are a common abatement action and were evaluated, but other kinds of abatement were also considered. The overall feasibility and reasonableness of noise abatement actions that provide a substantive benefit for the impacted receptors were evaluated. Other types of noise abatement included:

- Traffic management measures such as lane closures or reduced speeds could reduce noise but a primary reason for the proposed improvements in the study area is to improve local traffic access and flow.
- Changes in horizontal or vertical alignments of the roads near the impacted receptors could reduce noise but are not practical as Estes Park is already developed and extremely constrained, so there is no vacant land on which to shift the roads.
- Noise buffer zones could reduce noise levels, but sufficient space for buffers is not available at the noise impact areas.

Evaluation of Abatement Other than Barriers

The CDOT guidelines present several non-barrier noise abatement options. For various reasons, none of these options appeared to be viable for the Proposed Action.

Changes in horizontal alignments of the roads near impacted receptors may reduce noise but are not practical as a noise abatement action for this project. Central Estes Park is already developed and extremely constrained, so there is not vacant land present to shift the roads. The flood channels for Big Thompson River and Fall River have to be considered by the project, which further constrains opportunities to shift the roads. In summary, horizontal shifts were considered, but such changes just to reduce traffic noise are not practical.

Changes in vertical alignments (cuts or fills) could also reduce noise. However, changes in road elevations in the noise study area would present challenges to the numerous local connections that must be maintained for property access. There are numerous street, alley and private driveway connections directly adjacent to the project roads that would be negatively affected by depressing or elevating the roads. There are other constraints related to protection of the nearby streams (Big Thompson River and Fall River) that must be accommodated by the project and preclude large shifts in project road elevations. In summary, vertical elevation changes were considered, but vertical realignments just to reduce traffic noise are not practical.

Finally, noise buffer zones could reduce noise levels, but there are no opportunities in the noise study area due to prior development within central Estes Park. Sufficient space for buffers is not available at the noise impact areas. Noise insulation actions may be considered for Category D (indoor) impacts, but there are none for this project.

Traffic Noise Barrier Evaluations

Noise barriers and other abatement actions must be both feasible and reasonable to be included in the Proposed Action. For a noise barrier to be feasible it must:

- Provide at least 5 dBA of noise reduction
- Not have any “fatal flaw” issues (safety, maintenance, access, drainage, etc.)
- Be constructible using reliable and common practices
- Not exceed 20 feet in height

For a noise barrier to be reasonable it must:

- Meet the minimum design goal of at least 7 dBA of noise reduction
- Meet the cost/benefit index of not more than $6,800/dBA/receptor of benefit

- Have support from more than 50 percent of the potentially benefitting receptors

The physical characteristics of the noise study area, with the identified noise impacts from the Proposed Action, were reviewed for the potential placement of noise abatement barriers. From this review, it was concluded that these noise barriers would be infeasible; therefore, no noise abatement barriers are recommended for the Proposed Action.

Estes Park is a small town and the study area is in the core of the downtown area. Barriers that are effective in reducing traffic noise in this area would cause unacceptable safety, pedestrian movement and property access issues; barriers would dramatically (negatively) change the character of the downtown area.

Because most of the impacted properties have direct access only from the project streets, which must be maintained by the Proposed Action, gaps in the prospective barriers would be required that would compromise the noise abatement effectiveness. Preserving safe driver sight lines in such tight quarters, with numerous pedestrians expected, would require even larger gaps. In some locations, such as along West Riverside Drive, this would effectively preclude barriers.

The footprint of disturbances by the Proposed Action was intended to be as small as possible because of the numerous social and environmental considerations in the noise study area. Inserting a noise barrier into the proposed cross-sections of the new roads would require space that is not readily available and would have negative consequences for other resources. The amount of right-of-way needed would increase and could lead to park land or private property acquisitions not otherwise anticipated. From this review, it was concluded that noise barriers in the noise study area would be infeasible. Therefore, an assessment of reasonableness is not required. No noise abatement barriers are recommended for the Proposed Action.

Summary of Recommended Abatement

As described above, noise barriers throughout the noise study area were found to be infeasible. Therefore, no barriers are recommended for the Proposed Action.

Noise Mitigation during Construction

The proposed road improvements abut residential areas. To address the temporary elevated noise levels that may be experienced during construction, standard abatement measures should be incorporated into construction contracts, where it is feasible to do so, including:

- Notify neighbors in advance when construction noise may occur and its expected duration so that they may plan appropriately.
- Manage construction activities to keep noisy activities as far from sensitive receptors as possible.
- Maintain exhaust systems on equipment in good working order. Equipment would be maintained on a regular basis, and equipment may be subject to inspection by the construction project manager to ensure maintenance.
- Use properly designed engine enclosures and intake silencers where appropriate.
- Limit night time work to areas that will not impact residential receptors.

3.8 Water Resources, Floodplains and Water Quality

This section summarizes potential impacts to water resources, floodplains and water quality. The study team gathered water resources information and data for the Big Thompson River and Fall River within the study area from federal, state, and local agency resources. More detail is provided in *Hydrology and Hydraulics Preliminary Report*, Volume 3.

3.8.1 Affected Environment

The study area is within the Big Thompson River Watershed which originates in the Rocky Mountains just west of the continental divide and extends easterly to the southern part of Larimer County. The Big Thompson River Watershed is a minor river basin to the South Platte Basin. The river is steep and narrow in this area and as it travels easterly, eventually widens out to a meandering channel. Elevations of the Big Thompson River watershed range from 7,500 to 12,900 feet. Mean monthly temperatures range from lows of 30 degrees Fahrenheit (°F) to highs of 60°F.

Fall River is a tributary of the Big Thompson River that begins within RMNP. Fall River has an approximately 17-mile long stretch that flows easterly prior to joining the Big Thompson River at center of downtown Estes Park.

The roadway at Ivy Street Bridge crosses the Big Thompson River at an 85 degree angle and constricts the flow through the existing 35-foot, single span bridge opening. The bridge deck elevation is a few feet higher and there is minimal freeboard (less than 2 feet).

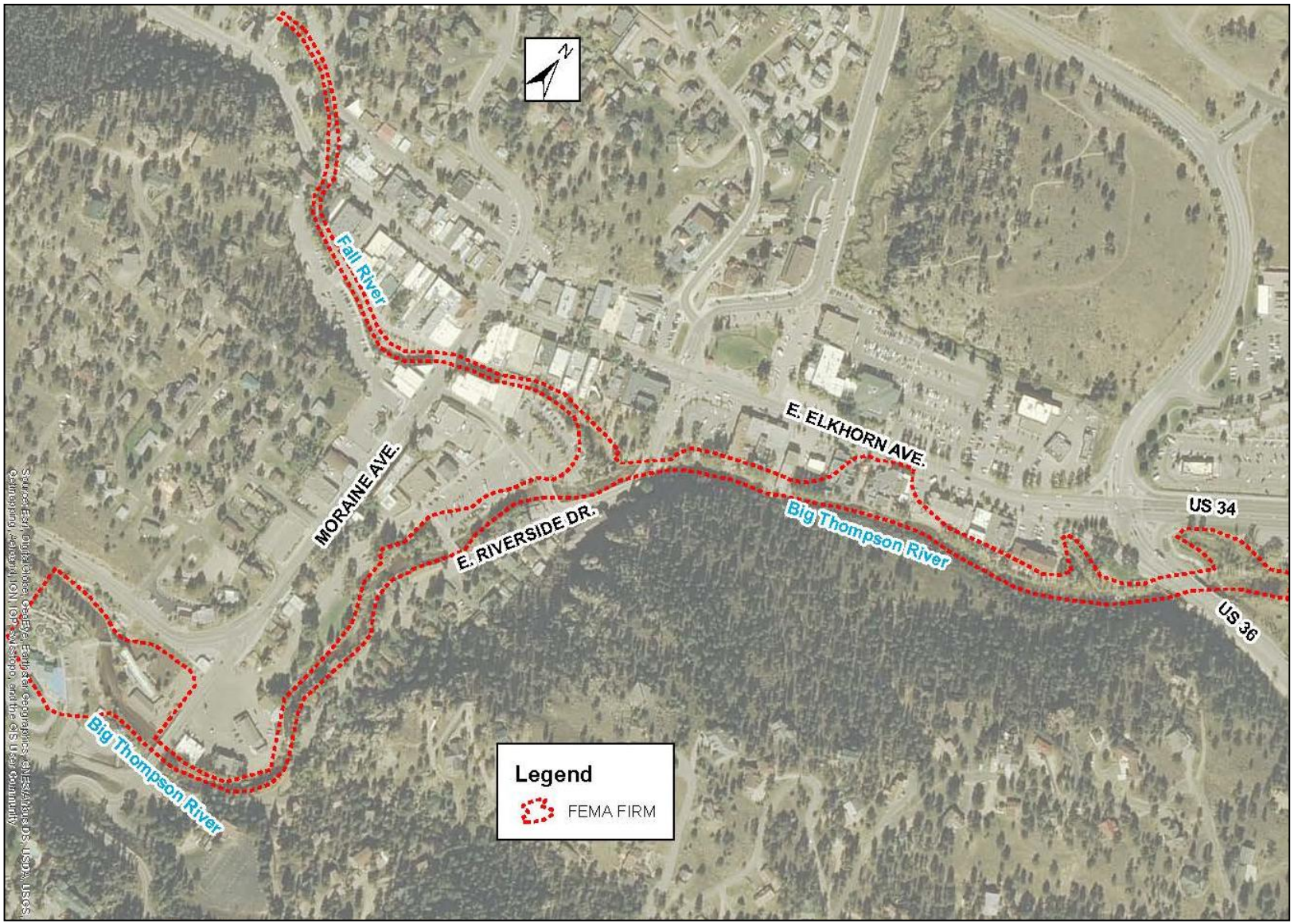
Approximately 250 feet downstream of the Ivy Street Bridge is the Rockwell Street Bridge, which is at a 95 degree angle and constricts the flow through the existing 50-foot, single span bridge opening. The bridge deck elevation is a few feet higher and there is minimal freeboard (less than 2 feet).

Approximately 200 feet downstream of the Rockwell Street Bridge is the Fall River and Big Thompson River confluence. Another 20 feet downstream of the confluence is the Riverside Drive Bridge. This bridge is skewed at a 45 degree angle and constricts the flow through the existing 75-foot, two span bridge opening. The bridge deck elevation is a few feet higher and there is minimal freeboard (less than 2 feet).

Floodplains

Executive Order 11988 requires federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. The project improvements lie within a Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) designation map numbers 08069C1094F and 08069C1282F. The project extents lie in a regulatory floodplain designated Zone AE, where the area inundated by the 1% annual chance flooding (100-year) has base flood elevations (BFE). The project is also designated Zone X, with areas determined to be outside of the 0.2% annual chance floodplains (500-year) delineated outside of the 100-year floodplains. In addition, the project extents are within a FEMA regulated floodway. The current FEMA FIRM is shown on Figure 3.8-1.

Figure 3.8-1: FEMA Floodplain



Source: AECOM, 2016.

In September 2013, Estes Park and the surrounding areas experienced one of the worst flood disasters in Colorado's history. Relevant to this project, the Fall River and Big Thompson River breached their banks and flooded the Downtown area resulting in property damage and road closures.

As a result, the Colorado Water Conservation Board (CWCB) has recommended that this is the appropriate time to restudy basin hydrology. The Town issued a request for proposal to study and update the hydrology in December 2015 with an estimated completion in summer of 2016. For this project to continue with analysis of floodplains, the Town provided the project team with flows that they are currently using to regulate work within floodplains that supersede the FEMA effective flows at the Fall River and Big Thompson River and are considered "Best Available Flows" (CWCB Best available Flows). The CWCB Best Available Flows were obtained from CWCB's study of the Big Thompson River and Fall River (Jacobs 2014). This study focused on the Big Thompson River downstream of Lake Estes, but also included the upper reaches of the Big Thompson River and Fall River in less detailed analysis. The Town's current Hydrologic Study will study in detail the upper reaches of the Big Thompson and Fall Rivers that affect downtown Estes Park.

The CWCB Best Available Flow data shows flows peak discharges for a 1 percent annual event (100-year storm event) approximately 2.5 times higher than the current FEMA regulatory peak flows. These flows would result in wider and deeper floodplains than the current regulated FEMA FIRM floodplain delineation.

The following presents a summary timeline of the events, studies, and future regulatory changes resulting from the 2013 floods.

1. September 2013 Floods (Results in breaches of Big Thompson and Fall Rivers and flooding throughout downtown and surrounding areas)
2. CWCB Hydrologic Evaluation of the Big Thompson River Watershed: Post September 2013 Flood Event (August 2014)
3. Town of Estes Park adopts Ordinance 16-14, which allows the Town to regulate floodplains using CWCB Best Available Flows (October 2014)
4. Estes Downtown Loop Project preliminary hydraulic analysis and development of channel/floodplain improvement concepts (Spring 2016)
5. Town of Estes Park Hydrologic Evaluation of the Upper Reaches of Big Thompson River. Black Canyon Creek, Dry Gulch and Fall River (anticipated completion for downtown is Fall of 2016 and the remainder of the Estes Valley in 2017)
6. CWCB Hydraulic Analysis of Downtown Estes Park (Begins after Town Hydrologic Study (anticipated completion for the downtown area in fall 2016 and the rest of the Estes Valley in 2017)
7. FEMA completion of revised Flood Insurance Study and associated revised Flood Insurance Rate Maps (anticipated by 2020)

Water Quality

The federal Clean Water Act (CWA) requires each state to designate uses of all surface water bodies and develop criteria to protect the designated uses of these water bodies. Colorado currently has five designated uses for surface water bodies: aquatic life, water supply, recreation, wetlands, and agriculture. The beneficial use classifications of the Big Thompson River and the Fall River are recreation, water supply, agriculture, and aquatic life (CDPHE 2012b).

The CWA also requires each state to publish an annual list of water bodies that are not meeting their designated uses because of excess pollutants; these pollutants can be naturally occurring or a result of human activity. The list, known as the Section 303(d) list, is based on violations of water quality standards and is organized by watersheds, which are further divided into stream segments.

The Big Thompson River segment upstream of the study area (Water Body ID COSPBT02) is included on the Impaired Waters 303(d) List for the State of Colorado (CDPHE 2012a and 2012d). Starting at the RMNP and extending to the Home Supply Canal Diversion, impairments for the Big Thompson River include arsenic and aquatic life (CDPHE 2012c). However, the Big Thompson River segment in the study area is not impaired. Fall River (Water Body ID COSPCL09a) is also included on Colorado's Impaired Waters List, but does not require a Total Maximum Daily Load (TMDL).

The bridges at Ivy Street, Rockwell Street, and Riverside Drive do not have modern technologies to reduce and treat stormwater runoff. Therefore, water drains directly into the Big Thompson River from these bridges.

3.8.2 Environmental Consequences

No Action Alternative

Floodplains

The No Action Alternative would leave the existing hydraulic capacity of the Big Thompson River and Fall River and associated structures unchanged, resulting in the rivers potential to continue to breach their banks during large storm events. In the next one to four years the CWCB and FEMA will be defining the new regulatory floodplains based on revised flood flows that will be determined from the 2016 hydrology study. The revised floodplain delineations and subsequent Flood Insurance Rate Maps could result in numerous additional downtown commercial and residential properties being within the 100-year floodplain resulting in higher flood insurance rates for many property owners. If a 100-year flood or a more extensive flood event occurred, substantial property damage and related effects would be expected. Figure 3.8-2 shows the estimated 100-year floodplain limits for the No Action Alternative using the CWCB Best Available Flows which the Town is currently uses to regulate floodplain development activities.

Water Quality

The No Action Alternative would not create construction disruption with the potential to cause increased turbidity in the Big Thompson River channel. Existing conditions would remain

unchanged. No new sources of contamination would be introduced into the study area. Water quality risks from flood damage and associated roadway drainage runoff would remain. Roadway runoff directly from the existing bridges would continue to run directly into the Big Thompson River.

Proposed Action

The Proposed Action has been designed to replace all three bridges (Ivy Street Bridge, Rockwell Bridge and Riverside Bridge) and provide channel/floodplain improvements just upstream of the Ivy Street Bridge to the US 36 Bridge (with the Ivy Street Bridge replacement and upstream channel/floodplain improvements being completed in Phase 1, along with the implementation of the one-way couplet). This includes channel improvements and floodplain widening, and stream profile modification. In coordination with replacing, enlarging and raising the Ivy Street, Rockwell Street, and East Riverside Bridges the flow line of the Big Thompson River will be lowered up to 18-inches between the East Riverside Drive Bridge to 100 feet upstream of the new Ivy Street Bridge. In addition to channel profile lowering, the flow line of the channel will be realigned between the Rockwell Bridge and Ivy Street Bridge, and the channel and floodplain will be widened to provide additional drainage capacity. Water surface depth will remain the same. This channel profile lowering and channel widening will be constructed by constraining (to the west edge) the existing flow with temporary berms and excavating material for the new channel cross section east of the existing channel, before diverting the water into the new channel alignment. Downstream of the East Riverside Drive Bridge, the Big Thompson River corridor would be widened into the adjacent hillside to the south of the existing river. The widening would include creating a floodplain bench, up to 100 feet wide, adjacent to the existing river channel. The floodplain bench would be consistent with the concepts presented in the Big Thompson River Restoration Master Plan and the Fall River Master Plan.

Improving the channel capacity and constructing an active floodplain will improve resiliency of the proposed roadway infrastructure, while promoting terrestrial and aquatic habitats within the project area. These improvements could include the construction of numerous stream restoration features. These may include, but are not limited to:

- Low flow channel alignments
- Floodplain benches
- Step pool or riffle pool systems
- Large woody debris structures
- Habitat complexity features
- Wetland/Riparian restoration

All Phase 1 and future phase channel widening and floodplain improvements are anticipated to be designed in consultation with the Town of Estes Park, Estes Valley Watershed Coalition, Colorado Water Conservation Board, FEMA, and U.S. Army Corps of Engineers and implemented with a broad range of measures necessary to protect construction and post-construction water quality and comply with Clean Water Act Section 404 permitting requirements. These measures would be designed and implemented to limit discharge of

contaminants and sediments into the river during and after construction and to create long-term channel stability.

Construction Impacts

The Proposed Action includes extensive earthwork within and near the Big Thompson River channel and adjacent floodplains. Land disturbances will increase the potential for sediment and other pollutants to enter the rivers. The channel work between Ivy Street and East Riverside Drive would require work in the Big Thompson River which presents increased risk to adversely affect water quality. Also, refueling and operation of construction equipment near the Fall and Big Thompson Rivers could result in release of contaminants to these waterways. During construction the contractor will be required to apply best management practices BMPs to reduce transport of sediment, debris, oils, concrete waste and hazardous substances into the rivers. These often include the installation of silt fences, fiber rolls, sandbag barriers, stream bank stabilization, and street sweeping.

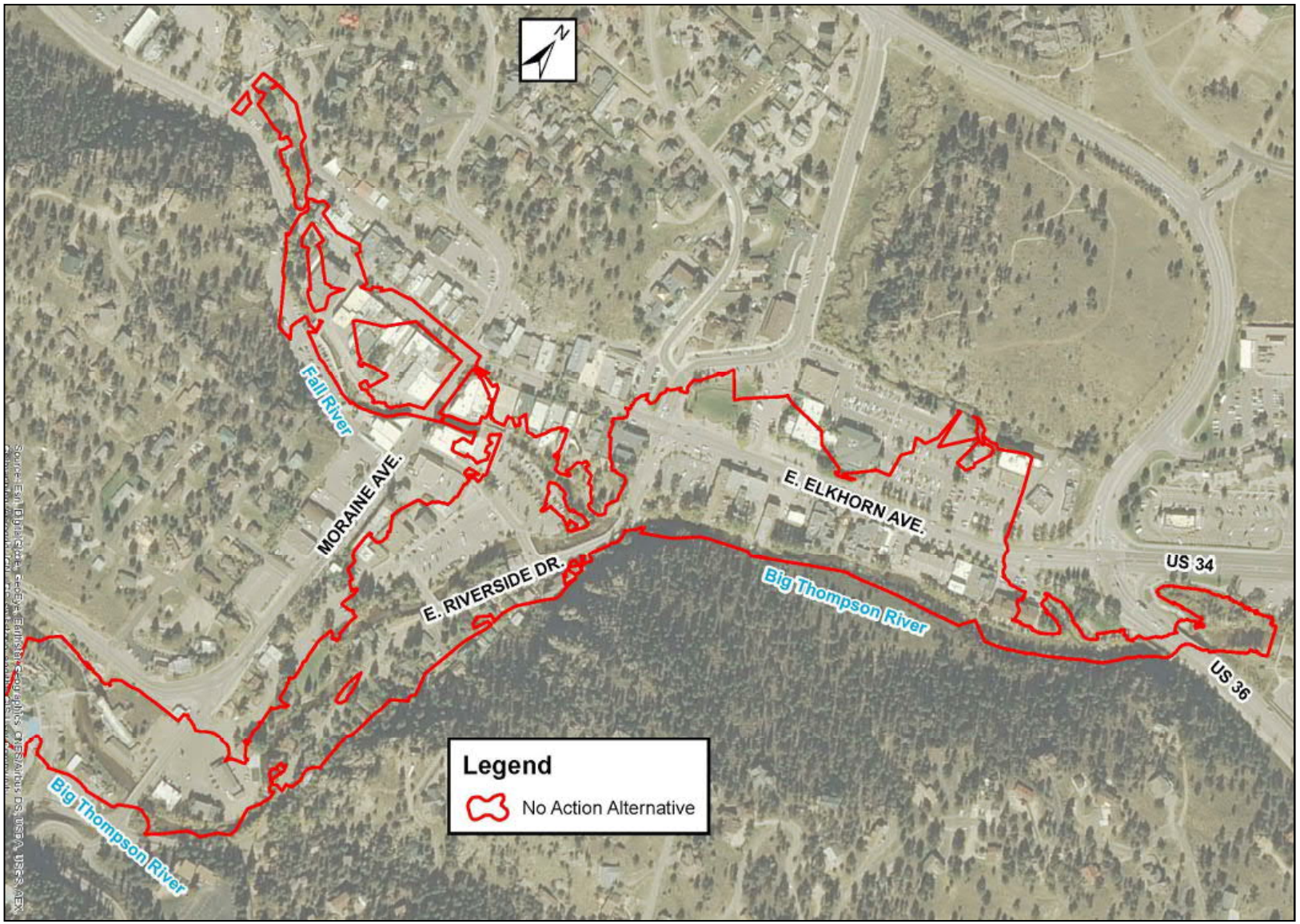
Floodplain Impacts

Channel/floodplain improvements would provide increased channel capacity so that the majority of CWCB best available 100-year flows would be conveyed in the main river channel. New bridges would be designed to pass the 100-year flows without overtopping the roadways. The added river conveyance provides resiliency to the transportation infrastructure investment and increased resiliency for adjacent infrastructure. The beneficial effects would include mitigating or preventing potential property damage from flood flows and reducing the estimated revised floodplain boundary in the downtown area. If the 100-year flood or more extensive flood events occurred with the Proposed Action, there would be less substantial property damage than with the No Action Alternative. Unresolved floodplain issues, due to existing channel restrictions, would remain in locations outside the scope of this project. This would include flooding and damage upstream of the Ivy Street Bridge or downstream of the US 36 Bridge on the Big Thompson River and along Fall River upstream of the confluence with the Big Thompson River, as shown on Figure 3.8-3. The floodplain boundaries shown on Figure 3.8-3 are preliminary based on the CWCB Best Available Flows. As discussed previously the regulatory environment for flood flows and floodplains is undergoing further studies and evaluation. This analysis and channel/floodplain concepts developed to date for the Proposed Action will continue to be analyzed as new data becomes available.

Water Quality

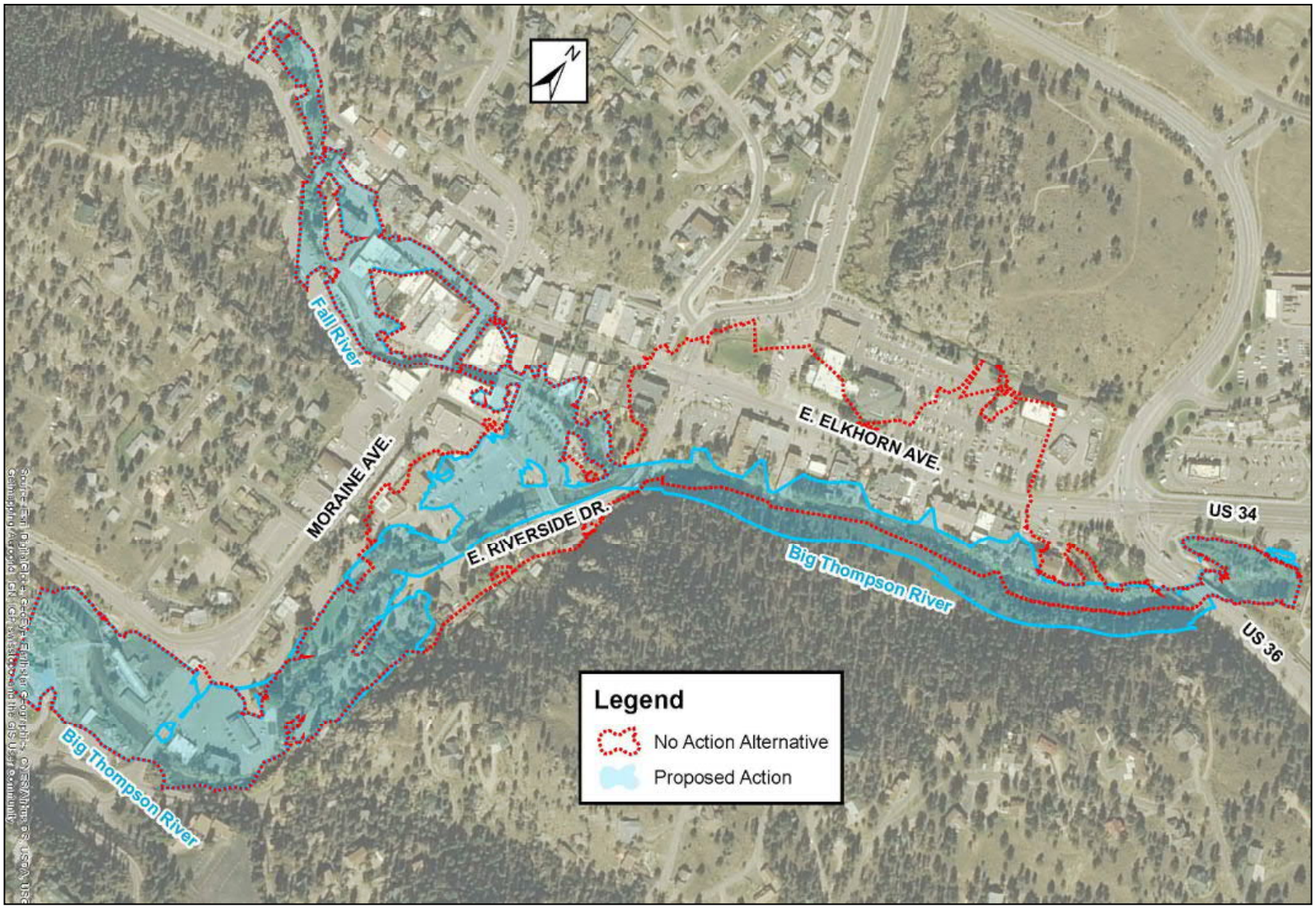
The Proposed Action is not expected to result in long-term impacts to Big Thompson River or surface waters. All new bridges and roadways will include storm drainage systems, eliminating the direct runoff from the existing bridges into the Big Thompson River. Proposed improvements will limit land disturbances and best management practices (BMPs) will be used to mitigate sediment transport and erosion.

Figure 3.8-2: Floodplain with No Action Alternative (CWCB Best Available Flows)



Source: AECOM, 2016.

Figure 3.8-3: Floodplain with Proposed Action (CWCB Best Available Flows Downstream Floodplain Improvements)



Source: AECOM, 2016.

3.8.3 Mitigation

The following mitigation measures are recommended to address impacts during construction and post-construction:

- Implement standard erosion control and sediment control BMPs in accordance with CFLHD Specifications FP 14 and provide sound engineering practices during and post construction activities.
- Develop and implement a site-specific stormwater management plan (SWMP). Include BMPs in the project's Stormwater Management Plan (SWMP) and future Clean Water Act (CWA) Section 404/401 permit requirements to protect water quality during and after construction could include: limitation of disturbance areas; stabilize disturbed areas and catch sediment using soil blankets, silt fence, fiber rolls, sediment traps, temporary detention ponds, and other sediment control devices; control velocity of runoff and water flow using check dams, diversion ditches, rip rap, and other velocity dissipation devices; revegetate using seeding, plantings, and mulching.
- Perform all work in accordance with CFLHD's Specifications FP 14 Section 157 (Soil Erosion and Sediment Control), Section 629 (Rolled erosion control products and Cellular Confinement Systems), and Section 713 (Roadside Improvement Material).
- Locate construction staging and materials stockpiling farther than 50 feet from the edge of Big Thompson River or Fall River, when possible. If this buffer is not achievable, placement of materials closer to the edge of water with appropriate additional BMPs is permissible.
- Designate refueling containment areas and concrete washouts away from the Big Thompson River and Fall River channels and floodplains.
- CFLHD or its contractor must file a notice of intent with the Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division for groundwater dewatering, if dewatering is required for construction. A discharge permit would also be required if groundwater is discharged to a water body (i.e., the Big Thompson River). The CDPHE may require that water proposed for discharge be analyzed, and that the discharged water be treated to meet the surface water quality standards applicable to that river segment. The project will comply with all CDPHE dewatering and/or discharge permit requirements. In the event that discharged water cannot be treated to meet the surface water quality standards, discharged water will be stored and transported off site for disposal.
- Perform final hydraulic analysis with updated hydrology in close coordination with CWCB, Town of Estes Park, and FEMA. Prepare a Conditional Letter of Map Revision and follow up Letter of Map Revision for the Ivy Street Bridge and related channel work near the bridge as determined necessary by the Town of Estes Park and FEMA.

3.9 Wetlands and Waters of United States

This section summarizes potential impacts to wetlands and Waters of the U.S. More detail is provided in *Wetlands and Waters of the U.S. Delineation Report*, Volume 3.

3.9.1 Affected Environment

Wetlands and other waters of the United States (OWUS) were evaluated in October 2014 and again in October 2015 for the downstream Big Thompson River channel improvement areas. The wetland delineation was conducted in accordance with the *USACE 1987 Corps of Engineers Wetlands Delineation Manual* (USACE 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coasts* (USACE 2010).

Fall River flows in a southeasterly direction through the project area before it joins the Big Thompson River within the Town of Estes Park. The Big Thompson River then continues to flow east, into Lake Estes. Both rivers within the Town of Estes Park have been channelized through the construction of concrete walls retaining the river, and placement of rock-lined banks. Due to this, there is little opportunity for wetlands to form along the banks of these rivers within the town of Estes Park. Three small wetland sites were identified within the project limits and one continuous OWUS covering Fall River and Big Thompson River throughout the project area.

Three small wetland sites were identified within the project limits, one near the northeast corner of the existing Rockwell Bridge, and the other two on a small tributary of the Big Thompson River (Black Canyon Creek) near US 36. Wetlands are areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support (and that under normal circumstances do support) a prevalence of vegetation adapted for life in saturated soil conditions. Executive Order 11990, Protection of Wetlands, directs federal agencies to protect wetlands by avoiding construction in wetlands whenever possible. FHWA requirements for compliance with this Executive Order are outlined in 23 CFR 777.

The Big Thompson and Fall Rivers fall under the USACE's jurisdiction as OWUS. Section 404 of the CWA regulates wetlands and other waters of the United States. This Act defines jurisdictional Waters of the U.S. to include all surface waters, such as navigable waters and their tributaries, interstate waters and their tributaries, wetlands adjacent to these waters, and all impoundments of these waters. The U.S. Army Corps of Engineers (USACE) regulates and administers the Section 404 Program.

3.9.2 Environmental Consequences

No Action Alternative

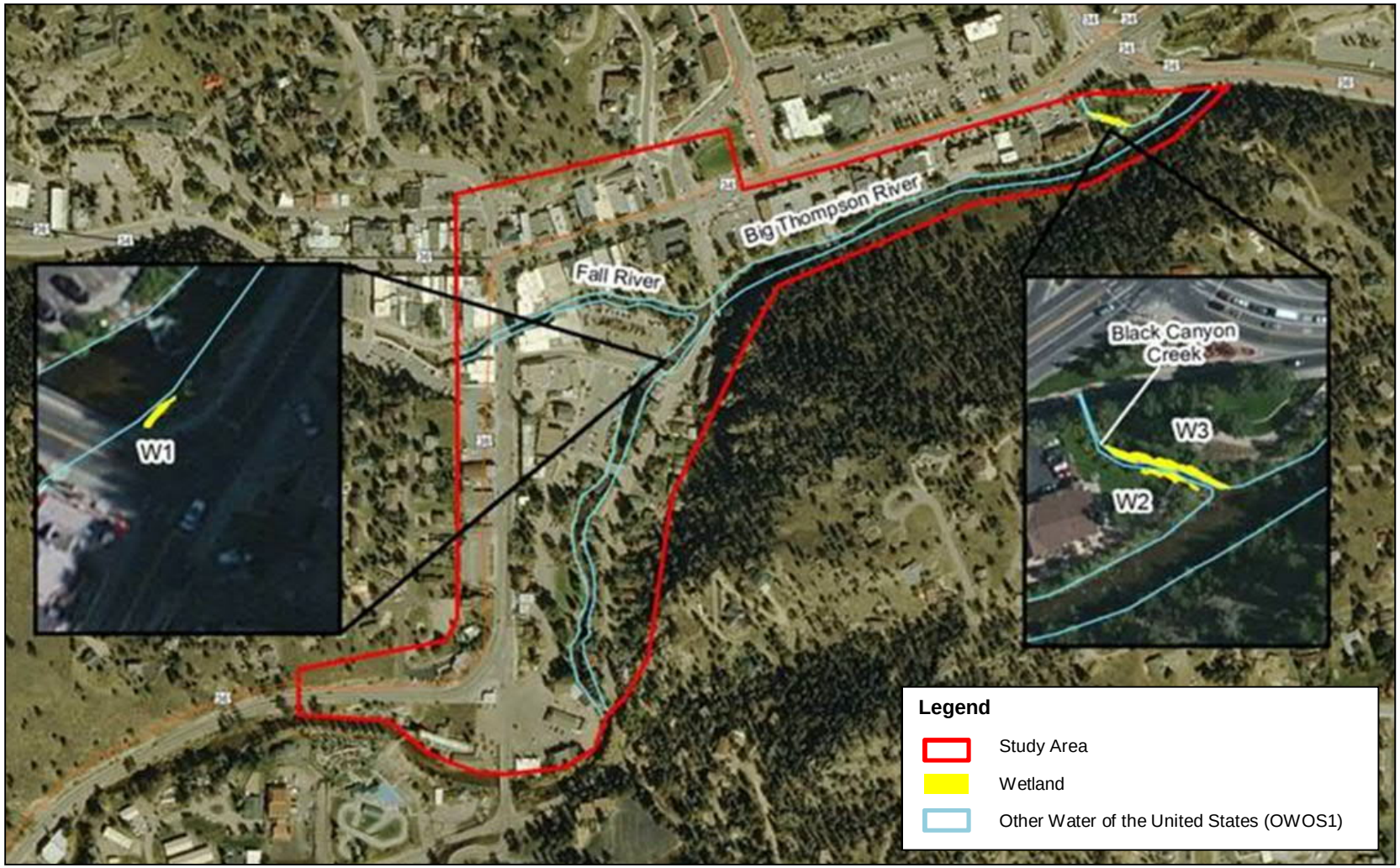
No wetlands or Waters of the U.S. would be impacted by the No Action Alternative.

Proposed Action

The Proposed Action would require 0.002 ac of permanent impact to wetlands at the northeast corner of the existing Rockwell Bridge. These impacts would be required for excavation of channel widening at the Rockwell Bridge. See Figure 3-9.1, indicated by W1 on the map, for the location of these permanent impacts. In addition, 0.8 acres of impact to Other Waters of the U.S

are anticipated under the Proposed Action. These impacts are required for channel widening and reconfiguration of the Big Thompson River. Under the Proposed Action, surface areas would increase for Other Waters of the U.S., creating a net benefit.

Figure 3.9-1: Wetland Impacts



Construction Impacts

There would be no temporary impacts to wetlands under the Proposed Action. Temporary impacts to OWUS of the Big Thompson River would result from the removal of existing bridges and walls, and expansion of the Big Thompson River cross section. The upstream channel work from the Rockwell Bridge to the Ivy Street bridge would result in approximately 0.61 acres of temporary impacts to the Big Thompson River's OHWM for the duration of the construction work for the upstream channel work and removal of the existing walls along the east side of the river and the removal of the existing Ivy Street and Rockwell Bridges, which is estimated to be six to eight months. The downstream channel work from the eastern limits of the downstream widening near US 36 to the upstream limits of the widening at the East Riverside Bridge would result in approximately 0.21 acres of temporary impacts to the Big Thompson River's OHWM for the duration of the construction work for the downstream channel widening work, and removal of the existing East Riverside Bridge, which is estimated to be approximately six to eight months. With the completion of the channel improvements there would be a net increase in area of the OWUS.

3.9.3 Mitigation

Mitigation for permanent impacts to wetlands under the Proposed Action will be determined in consultation with the lead agency responsible for future phases, and with the U.S. Army Corps of Engineers.

Revegetation and landscaping planned along the channel widening will enhance existing wetland areas as well as the quality of Other Waters of the U.S.

The following mitigation measures are recommended during construction:

- The implementing agency will obtain Section 404 permit authorization from the USACE for work along and in the Big Thompson River. Based on current estimated impacts, it is anticipated the Proposed Action would meet the requirements for a Nationwide Permit.
- The implementing agency will coordinate the final design for channel improvements with the USACE and Estes Valley Watershed Coalition. Impacts to wetlands and OWUS will be minimized and avoided as possible.
- The implementing agency will work within the Rivers will be completed during winter months during lower flows and outside of fish spawning time frames. Measures to protect existing riparian areas during construction activities through placement of temporary and/or construction-limit fencing will be included in the construction package.
- Dewatering for bridge construction would require a dewatering permit through the CDPHE.

3.10 Vegetation, Wildlife and Threatened and Endangered Species

This section summarizes potential impacts to vegetation (including noxious weeds), wildlife and threatened and endangered species. Additional detail is provided in the *Biological Assessment*, Volume 3.

3.10.1 Affected Environment

The study methodology consisted of conducting U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Conservation System (IPAC) queries, consultation (via the project scoping process) with biological staff at the USFWS Colorado Field Office, and a general habitat assessment based on a field visit. A biologist surveyed the floodplain improvement area on project area October 7, 2014, and October 27, 2015. Protocol-level surveys were not conducted; however, general habitat assessments of the project area were performed. Species were evaluated for their potential to occur within the project area based on species-specific habitat requirements and habitat conditions present within the project area. During the field surveys, AECOM took photographs from representative vantage points (included in the *Biological Assessment*, Volume 3). The following information was recorded:

- A general assessment of habitat conditions;
- The occurrence and distribution of noxious weed species; and
- The occurrence of any wildlife, nests, burrows, or dens

3.10.2 Environmental Consequences

No Action Alternative

The No Action Alternative would not result in any direct or indirect impacts to vegetation, wildlife or threatened and endangered species.

Proposed Action

Federally Listed Species in the Action Area

The Endangered Species Act (ESA) directs all federal agencies to work to conserve endangered and threatened species and to use their authorities to further the purposes of the Act. Section 7 of the Act, called "Interagency Cooperation," is the mechanism by which federal agencies ensure the actions they take, including those they fund or authorize, do not jeopardize the existence of any listed species. Under Section 7 of the ESA, federal agencies must consult with the USFWS when any action the agency carries out, funds, or authorizes *may affect* a listed endangered or threatened species. This process usually begins as informal consultation. A federal agency, in the early stages of project planning, approaches the USFWS and discusses what types of listed species may occur in the proposed action area and what effect the proposed action may have on those species.

If the federal agency, after discussions with the USFWS, determines that the proposed action is not likely to affect any listed species in the project area, and if the USFWS concurs, the informal consultation is complete and the proposed project moves ahead. If it appears that the agency's action may affect a listed species, that agency may then prepare a biological assessment to assist in its determination of the project's effect on a species. Based on review of the data

obtained during the IPAC query, consultation with biological staff at the USFWS Colorado Field Office, and the general habitat assessment conducted at the project area, it has been determined that implementation of the proposed project would have "no effect" on any federally listed species. This is based on the lack of suitable habitat present in the project area or the species known distribution does not overlap with the project area.

Table 3.10-1 presents a summary assessment of the species found in the IPAC query through the USFWS website. The full results of the USFWS IPAC query are provided in the *Biological Assessment*, Volume 3.

Designated Critical Habitat

Critical habitat is defined in Section 3(5) A of the Endangered Species Act (ESA) as specific regions in the geographical area occupied by federally listed species which contain the physical or biological features essential to the conservation of the species and which may require special management considerations or protection. Specific areas outside of the geographical area occupied by the species may also be included in critical habitat designations, upon a determination that such areas are essential for the conservation of the species.

Based on review of the USFWS IPAC report, and early coordination with the USFWS Colorado Field Office, critical habitat for federally listed species does not occur in the project area. Therefore, the project will have "no effect" on designated critical habitat.

Species Protected Under the Migratory Bird Treaty Act and Bald Eagle and Golden Eagle Protection Act

The Migratory Bird Treaty Act (MBTA), 916 United States Code 703–711, provides protection for 1,007 migratory bird species, 58 of which are legally hunted. The MBTA regulates impacts to these species such as direct mortality, habitat degradation, and/or displacement of individual birds. The MBTA defines "taking" to include by any means or in any manner, any attempt at hunting, pursuing, wounding, killing, possessing, or transporting any migratory bird, nest, egg, or part thereof, except when specifically permitted by regulations.

The proposed project study area is used as resting grounds for birds on their spring and fall migrations, and may be used for nesting and breeding grounds. Due to the presence of suitable habitat at the proposed project site for migratory bird species, proposed construction activities occurring during the migratory bird nesting season (February 1 through July 15) may impact individuals by displacing birds from suitable habitat or disrupting breeding activities (i.e. nest or young abandonment).

Common birds protected under the MBTA that may nest in the project area include American robin (*Turus migratorius*), downy woodpecker (*Picoides pubescens)*, western tanager (*Piranga ludoviciana*), and chickadees (*Poecile* spp.). Swallows may nest on bridges in the area and this should be determined before construction. A number of raptors protected under the MBTA may also nest in or adjacent to the project area including great-horned owl (*Bubo virginianus*), red-tailed hawk (*Buteo jamacensis*), and Cooper's hawk (*Accipiter cooperii*).

Delisted and candidate species are not subject to consultation with the USFWS and are not afforded protection under federal ESA. The USFWS delisted the bald eagle on July 9, 2007 (70 FR 37346). However, the bald eagle and golden eagle are still protected under the Bald and

Golden Eagle Protection Act (16 U.S.C. 668-668c), which prohibits the "take" of bald and golden eagles, including their parts, nests, or eggs without a permit issued by the Secretary of the Interior. Take is defined as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." To disturb an eagle includes actions that result in the direct injury of an eagle, or activities that would substantially interfere with normal feeding, breeding, or sheltering behavior, or result in nest abandonment. Due to the urbanized setting of the project area, it is unlikely that suitable nesting habitat is present and there are currently no known breeding sites within the project area. Therefore, impacts to bald eagles are not anticipated. In summary, implementation of the proposed action will have "no effect" to bald or golden eagles.

Construction Impacts

The construction activities could result in noise and vibration impacts to individuals if migratory birds are nearby during construction. Therefore, the project could result in short-term, temporary impacts to individual birds, but no long-term change in habitat availability or any significant change in the existing condition are anticipated.

Vegetation

The Proposed Action will permanently remove both coniferous and deciduous trees. The tree removals are required within Baldwin Park, along the East and West Riverside corridor roadsides and along the river channel (near the Post Office). The areas will be revegetated after construction is complete.

In addition, approximately 3.7 acres of forested land will be impacted along the south bank of the Big Thompson River due to downstream channel widening.

Noxious Weeds

The Colorado Noxious Weed Act of 2003 (35-5.5-101 through 199, Colorado Revised Statute [C.R.S.]) recognizes that, "…certain undesirable plants constitute a present threat to continued economic and environmental value of the lands to the state, and if present in any area of the state must be managed." This legislation gives jurisdiction to local governments to manage noxious weeds on public and private lands.

The project site includes areas of native plant species, non-native species introduced during landscaping, and non-native species defined as exotics, invasive weeds and/or noxious weeds. Invasive/noxious weeds are found in small, isolated and untended areas along the Big Thompson River, Fall River and along West Elkhorn west of the downtown. Due to the timing of the weed survey (autumn), two weed species were identified - common mullein (*Verbascum thapsus*) and an unidentifiable thistle (most likely *Cirsium* spp.).

The Town's Parks Division handles noxious weed control on Town property and complies with the Colorado State Noxious Weed Act. Also, the Town and the Estes Land Stewardship Association hold an annual Weed-Round Up in late summer.

Big Game Wildlife

Within the project area and Estes Park, big game wildlife has the potential to occur. The Town is within the general ranges for Rocky Mountain elk (*Cervus canadensis*) and mule deer (*Odocoileus hemionus*). Elk move throughout the urban downtown area, particularly along the

banks of the Big Thompson River and within Riverside/Baldwin parks. Mule deer are also present and common within and near the project and are often seen throughout the urban downtown area. The Town has resident populations of both species. The project also is within the black bear (*Ursus americanus*) overall range and they are known in Estes Park. The Town is within the overall range for bighorn sheep (*Ovis canadensis*), with a resident population in Rocky Mountain National Park.

The Proposed Action will bring a net increase in the acreage of park and open lands, which would benefit habitat for elk and other big game wildlife. In addition, the roadway width along East and West Riverside Drives will not change substantially (no increase in lanes near Riverside/Baldwin Parks) so wildlife migration is not anticipated to be negatively affected. The natural topography would be restored in areas disrupted by construction.

General Fish Species

No state-listed fish occur within the project area. Surveys occurred within Lake Estes and the Big Thompson River below Olympus dam (east end of Lake Estes) in 2014 and 2015 and the following fish were observed: white sucker (*Catostomus commersoni*), longnose sucker (*Catostomus catostomus*), brook trout (Salvelinus fontinalis), brown trout (Salmo trutta), tiger trout (Salmo trutta x Salvelinus fontinalis), rainbow trout (Oncorhynchus mykiss), tiger muskie, and yellow perch (Perca flavescens). Other species known to occur in the project area include longnose dace (*Rhinichthys cataractae*), fathead minnow (*Pimephales promelas*), Johnny darter (*Etheostoma nigrum*), and Iowa darter (*Etheostoma exile*) (CPW 2016). For information on how the project may affect water quality, refer to *Section 3.8: Water Resources, Floodplains, and Water Quality*.

When conducting post-flood stream modification, CPW recommends that a multi-stage channel design be constructed for the benefit of river ecosystems. They recommend a four channel component to modification including (1) a low flow channel that maintains aquatic habitat during base flow conditions; (2) a bankfull or active channel; (3) riparian bench for conveyance of flood conditions; and (4) a flood-prone area between terraces to convey infrequent floods. Pools spacing should be at intervals of approximately five to seven times the stream width. Drop structures should not exceed 12 inches, with six inches being the preferred distance. Cover for fish should include woody debris and cobble and boulder substrates. All rip-rap must be angular and backfilled with 12 inches of topsoil. No grouting of any structure should be done. If weirs are used, interstitial spaces must be maintained.

The following criteria were developed to provide guidance for stream restoration as a result of post-recovery assessment and include the following hydraulic parameters:

- Velocity – 3 to 6 feet/second;
- Minimum depth – 0.5 to 1 foot;
- Vertical drop – 0.5 to 1 foot;
- Turbulence - <7 Energy Dissipation Factor

Stream design for macroinvertebrates should include a diverse substrate composition and food sources provided by detritus or vascular plants. The sediment composition in riffles should include a mixture of gravel (2-60 millimeters, mm), small cobble (60-120 mm), large cobble

(120-250 mm), and boulder (.250 mm). Detritus should be provided through natural decomposition processes from the accumulation of leaf accumulations and other coarse particulate detritus behind obstructions such as logs or large cobbles or boulders and woody debris (i.e., logs, branches). Vascular plants should be able to grow in slow-moving sections of stream pools (Richer et al. 2015). For more information on CPW-recommended stream design, refer to the post-flood recovery guidelines found at https://cpw.state.co.us/Documents/Research/Aquatic/pdf/PostFloodAssessmentandGuidelines.pdf.

Federally Listed Species in the Action Area

Table 3.10-1 presents a summary assessment of the species found in the IPAC query. The full results of the USFWS IPAC query are provided in the *Biological Assessment*, Volume 3.

Based on review of the data obtained during the IPAC query, early coordination (via the project scoping process) with biological staff at the USFWS Colorado Field Office, and the general habitat assessment conducted at the project area, it has been determined that implementation of the proposed project would have “no effect” on any federally listed special-status species based on the lack of suitable habitat present in the project area or because the species known distribution does not overlap with the project area.

Table 3.10-1: Federally Listed Special-Status Species with Potential to Occur in the Project Area

Species	USFWS	Other[1]	Habitat	Potential for Occurrence
Plants				
Colorado Butterfly plant *Gaura neomexicana var. coloradensis*	T		Stream channel sites that are periodically disturbed. Low depressions along bends in wide, active meandering stream channels. Requires early- to mid-succession riparian habitat (USFWS 2016).	Not present. Surface waters present include the Fall River and Big Thompson River which do not exhibit habitat characteristics required for the species. Critical habitat exists, but not within the project area. Therefore, the proposed project will have "no effect" on the Colorado butterfly plant.
North Park phacelia *Phacelia formosula*	E		North park phacelia is found only in North Park of northern Colorado's Jackson County. The species is limited to eroded soil outcrops composed of barren exposures of the Coalmont Formation, a coal-bearing substrate. The species is found at about 8,000 to 8,300 feet in elevation (USFWS 2016).	Not present. Species is only known to occur in North Park of northern Colorado's Jackson County. Project area does not exhibit the habitat characteristics required for the species. Project occurs at a lower elevation than the desired elevation for the species. Therefore, the proposed project will have "no effect" on the North Park phacelia.
Ute ladies'-tresses *Spiranthes diluvialis*	T		Occurs in moist meadows associated with perennial stream terraces, floodplains, and oxbows (USFWS 2016).	Not present. The urbanized project area does not exhibit the habitat characteristics required for the species. Ute ladies'-tresses was not observed during field survey. Therefore, the proposed project will have "no effect" on the Ute ladies'-tresses.
Invertebrates				
Arapahoe Snowfly *Capnia arapahoe*	C		Streams with intermittent flow and a substrate of pebble, cobble, and bedrock. Species has only been documented in stretches of Young Gulch and Elkhorn Creek in Colorado (USFWS 2012).	Not present. Surface waters present include the Fall River and Big Thompson River. Project area does not include waters where Arapahoe snowfly has been documented. Therefore, the proposed project will have "no effect" on the Arapahoe snowfly.
Mammals				
Black-Footed ferret *Mustela nigripes*	Exp.		The Black-Footed ferret depends on prairie dogs for food and on their burrows for shelter (USFWS 2013).	There are currently no re-introduction sites near the project area or suitable habitat. Therefore, the project will have "no effect" on Black-Footed ferrets.
Canada Lynx *Lynx canadensis*	T		Canada lynx habitat can generally be described as moist boreal forests that have cold, snowy winters and a high-density snowshoe hare prey base (USFWS 2016).	Not present. The urbanized project area does not exhibit habitat characteristics and high-density snowshoe hare prey base needed to support the species. Critical habitat exists, but not within the project area. Therefore, the project will have "no effect" on Canada lynx.

Species	USFWS	Other[1]	Habitat	Potential for Occurrence
Preble's meadow jumping mouse *Zapus hudsonius preblei*	T		Inhabits well developed riparian habitat with adjacent, relatively undisturbed grassland communities, and a nearby water source. Well-developed riparian habitat includes a dense combination of grasses, forbs and shrubs; a taller shrub and tree canopy may be present (USFWS 2016).	Not present. The urbanized project area does not exhibit habitat characteristics for the species. Critical habitat exists, but not within the project area. Therefore, the proposed project will have "no effect" on the Preble's meadow jumping mouse.
Fishes				
Greenback Cutthroat trout *Oncorhynchus clarki stomias*	T		Inhabits mid- to high-elevation cold water streams and lakes. Requires cold, well-oxygenated water and streams that do not contain excess fine sediment and have healthy, intact riparian areas. Spawning may begin as early as April and conclude as late as July.	Greenback cutthroat trout occur in headwater streams and lakes in Rocky Mountain National Park upstream of the project area; however, the species has not been documented in the project area or downstream. In addition, greenback cutthroat trout in Rocky Mountain National Park are not a pure lineage and comprise a mix of genes from greenback cutthroat and Colorado River cutthroat trout. There is no potential for spawning in Fall River and Big Thompson Rivers in or downstream of the project area. Therefore, the project will have "no effect" on greenback cutthroat trout.
Birds				
Mexican Spotted owl *Strix occidentalis lucida*	T		The species inhabits old-growth or mature forests that possess complex structural components. Canyons with riparian or conifer communities are also important components (USFWS 2016).	Not present. The urbanized project area does not exhibit habitat characteristics required for the species. Critical habitat exists, but not within the project area. Therefore, the proposed project will have "no effect" on the Mexican spotted owl.
Golden eagle *Aquila chrysaetos*	None[1]		Uses cliffs or the largest trees in forested area that allow unobstructed views (Audubon 2016).	Due to the urbanized setting of the project area, no suitable nesting habitat is present. No known breeding sites within the project area. Therefore, impacts to golden eagles are not anticipated.
Bald eagle *Haliaeetus leucocephalus*	D[1]		Breeds and forages in forested areas adjacent to large bodies of water (USFWS 2016).	Due to the urbanized setting of the project area, no suitable nesting habitat is present. No known breeding sites within the project area. Therefore, impacts to bald eagles are not anticipated.

Source: USFWS 2015, compiled by AECOM 2015Notes:

1 Golden eagles and Bald eagles have no special-status under federal ESA. However, this species is protected by the Bald and Golden Eagle Protection Act and were therefore included in this table.

Federal Status: E=Endangered; T=Threatened; C=Candidate; Exp=Experimental Population; D=Delisted

3.10.3 Mitigation

The following mitigation measures are recommended to address impacts during construction and post-construction:

Vegetation and Noxious Weeds:

- Tree removal will be minimized to the extent practicable.
- Landscaped areas disturbed during construction will be revegetated with native species. Landscaping will be determined during the final design process.
- The introduction of noxious weeds and non-native plant species into the work site will be prevented. Dirt, plant, and foreign material will be removed from vehicles and equipment before mobilizing to work site.
- Cleaning and inspection records will be maintained.
- Conformance to the Federal Seed Act, the Federal Noxious Weed Act, and applicable State and local seed and noxious weed laws will be maintained.

Wildlife:

- If construction activities will occur during the migratory bird season, a qualified biologist will conduct a preconstruction survey two weeks prior to the start of construction to determine if nesting migratory birds are present.
- If bird species protected under the MBTA are actively nesting in the project area during construction, the biologist will identify appropriate conservation measures to protect the species. These measures may include, but are not limited to: establishing a construction-free buffer zone around the breeding site, biological monitoring of the breeding site, delaying construction activities in the vicinity of the breeding site until the young have dispersed, and/or removing vegetation that supports active nest or den sites once the sites are determined to no longer be active (typically by July 15).
- Cut slopes would be constructed to allow elk to continue to access the existing conservation easement area along the Big Thompson River riverbank (as required by the Estes Valley Land Trust).

3.11 Cultural Resources

This section addresses cultural resource issues associated with the alternatives. As a federal agency, the CFLHD is obliged under the provisions of the National Historic Preservation Act (NHPA) of 1966, as amended 2014 (54 U.S.C. §306108) to take into account the effect of an undertaking on any historic property; i.e., any cultural resource that is listed, or considered eligible for listing, in the National Register of Historic Places (NRHP). This procedure, once known as the Section 106 process, requires that the CFLHD identify any historic properties within the area of potential effects (APE, defined at 36 CFR §800.16[d] as "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist"), assess effects, and resolve any adverse effects. Under 36 CFR §800.2, the CFLHD must consult on determinations of NRHP eligibility and effect with the State Historic Preservation Officer (SHPO), Indian tribes, and representatives of local governments.

In a letter dated February 27, 2015, the Colorado SHPO (Nichols 2015a) concurred with the definition of the APE for direct project effects, as proposed by the CFLHD (2015), which consisted of two distinct areas: the "Overlay APE," defined as the area between the curbs along Elkhorn Avenue and Moraine Avenue, including adjacent sidewalks but not the adjoining properties; and the "Riverside APE," which encompasses one legal parcel out from the existing roadway along East Riverside Drive and West Riverside Drive. The CFLHD recently expanded the APE to include an area on the south side of the Big Thompson River where the river will be widened. This area has been labeled the "Downstream APE." In a letter dated May 19, 2016, the SHPO concurred with this expansion of the APE. The APE for indirect project effects is consistent with the direct APE because project construction, operation, and maintenance activities are unlikely to introduce long-term visual, atmospheric, or audible elements outside the defined APEs that would alter the characteristics of any properties that qualify those properties for inclusion in the NRHP and diminish their integrity. The APE is shown on Figure 3.11-1.

3.11.1 Affected Environment

From December 2014 through March 2015, and in April 2016, an intensive cultural resources inventory of the APE for direct project effects and prepared a summary report. The survey documented 39 cultural resources, evaluated the NRHP eligibility of each resource, and assessed project effects. Details about each of these documented resources are summarized in Table 3.11-1.

The criteria for NRHP eligibility are described at 36 CFR 60.4.

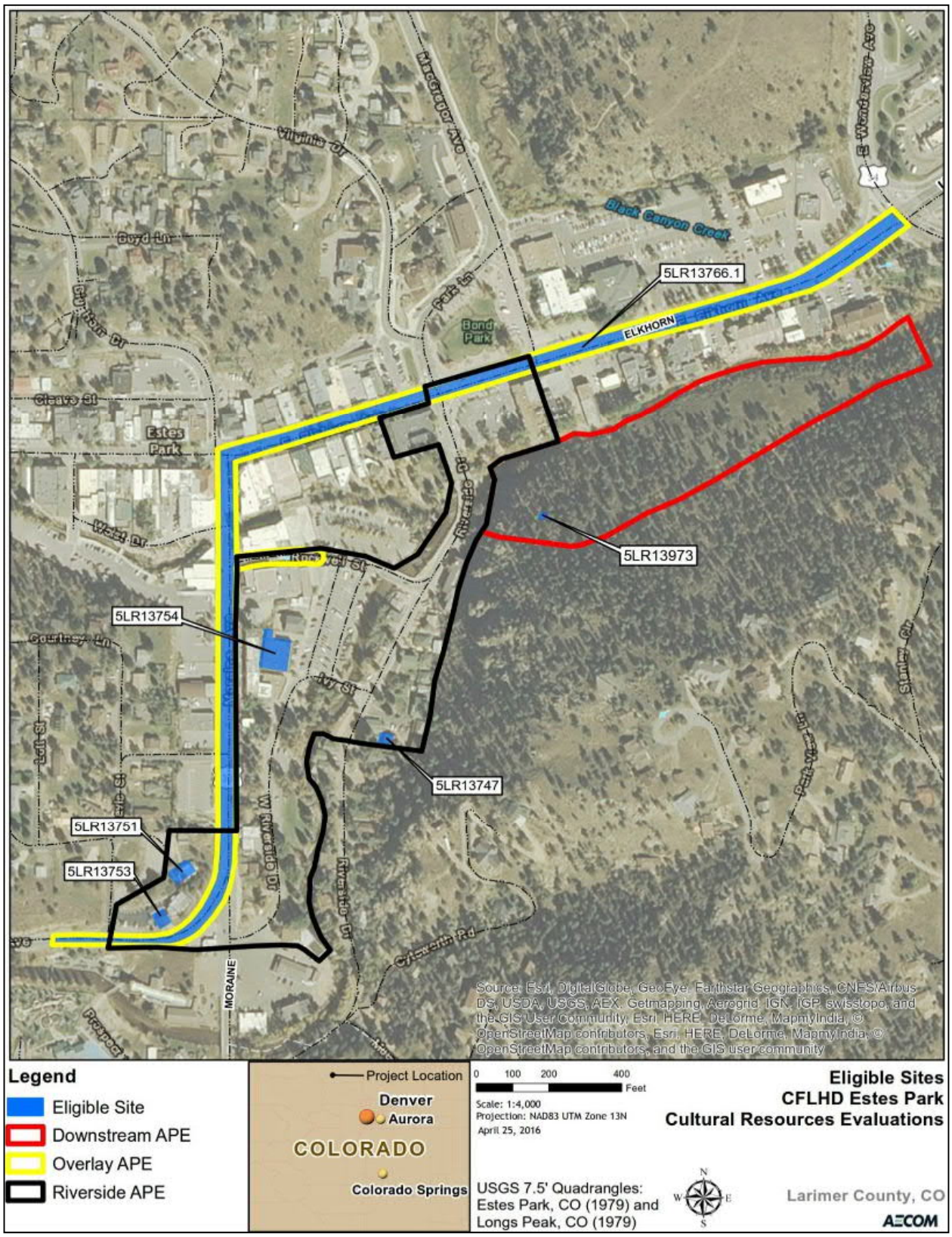
The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- Criterion A: The resource is associated with events that have made a significant contribution to the broad patterns of our history.
- Criterion B: The resource is associated with the lives of significant persons in our past.
- Criterion C: The resource embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high

artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

- Criterion D: The resource has yielded or may be likely to yield, information important in history or prehistory.

Figure 3.11-1: Area of Potential Effect (and NRHP-Eligible Properties)



Source: AECOM, 2016.

Table 3.11-1: Documented Cultural Resources within the APE for Direct Project Effects

Site No.	Address	Historic Name	Construction Date(s)	NRHP Eligibility (criteria)	Effects Finding
5LR13747	236 East Riverside Drive, Unit #1	Clayton Newell Rockwell Residence	1912-1922	Eligible (B, C)	No Effect
5LR13751	341 Moraine Avenue	RMNP Headquarters	1923	Eligible (A, B)	No Adverse Effect
5LR13753	351 Moraine Avenue	RMNP Museum and Visitor Center	1931	Eligible (A, B)	No Adverse Effect
5LR13754	215 West Riverside Drive	Estes Park Post Office	1961	Eligible (C)	No Effect
5LR13766.1	N/A	State Highway 262	1939	Eligible (A)	No Adverse Effect
5LR13973	N/A	Panoramic Point	Unknown	Eligible (A)	No Adverse Effect
5LR12761	342 West Riverside Drive		1960-1963	Not Eligible	No Effect
5LR12910	200-242 Moraine Avenue		1955	Not Eligible	No Effect
5LR12911	311 West Riverside Drive		1919	Not Eligible	No Effect
5LR12912	335 West Riverside Drive		1909-1916	Not Eligible	No Effect
5LR13732	164-184 East Elkhorn Avenue	Boyd Building	1925	Not Eligible	No Effect
5LR13733	200-222 East Elkhorn Avenue		1957	Not Eligible	No Effect
5LR13734	116 East Riverside Drive	Estes Park Public Restroom	1926-1935	Not Eligible	No Effect
5LR13735	124 East Riverside Drive		1936-1937	Not Eligible	No Effect
5LR13736	160 East Riverside Drive		1924	Not Eligible	No Effect
5LR13737	164 East Riverside Drive	Kindred	1924	Not Eligible	No Effect
5LR13738	170 East Riverside Drive		1917	Not Eligible	No Effect
5LR13739	189 East Riverside Drive		1945	Not Eligible	No Effect
5LR13740	201 East Riverside Drive		1949	Not Eligible	No Effect
5LR13741	220 East Riverside Drive		1920-1925	Not Eligible	No Effect
5LR13742	220 East Riverside Drive		1920-1925	Not Eligible	No Effect
5LR13743	221 East Riverside Drive		1940	Not Eligible	No Effect
5LR13744	231-233 East Riverside Drive		1959	Not Eligible	No Effect
5LR13745	232 East Riverside Drive		1900-1947	Not Eligible	No Effect
5LR13746	232 East Riverside Drive		1900-1947	Not Eligible	No Effect
5LR13748	236 East Riverside Drive, Unit #2		1939	Not Eligible	No Effect
5LR13749	225-235 West Riverside Drive	Estes Park Laundry	1921	Not Eligible	No Effect
5LR13750	250-253 Moraine Avenue	K & B Packing and Provision Co.	1928-1934	Not Eligible	No Effect

Site No.	Address	Historic Name	Construction Date(s)	NRHP Eligibility (criteria)	Effects Finding
5LR13752	342 Moraine Avenue	Philips 66 Service Station	1947	Not Eligible	No Effect
5LR13755	251 West Riverside Drive		1909	Not Eligible	No Effect
5LR13756	261 West Riverside Drive	Hayden No. 11 (rental cottage)	1904-1909	Not Eligible	No Effect
5LR13757	271 West Riverside Drive	Hayden No. 12 (rental cottage)	1915-1920	Not Eligible	No Effect
5LR13758	281 West Riverside Drive	Ak-Sar-Ben	1915	Not Eligible	No Effect
5LR13759	286 West Riverside Drive		1960	Not Eligible	No Effect
5LR13760	338 West Riverside Drive	Liquor Store	1954	Not Eligible	No Effect
5LR13762	344 West Riverside Drive		1958	Not Eligible	No Effect
5LR13763	350 West Riverside Drive	Pigley Wigley Grocery Store	1947	Not Eligible	No Effect
5LR13764	380-386 West Riverside Drive	Miller's Mountain Home Laundry-ette & Movie Wax Museum	1948	Not Eligible	No Effect
5LR13765	460-464 West Riverside Drive		1954	Not Eligible	No Effect
5LR6945	240 West Riverside Drive (Demolished)	Hazel Baldwin House and Cabins	1918-1940	Not Eligible	No Effect

Source: AECOM, 2016.

CFLHD determined, in consultation with the SHPO, that the following six sites are eligible for listing in the NRHP:

- **Clayton Newell Rockwell Residence (5LR13747)**: This site is a one-story, rustic style, hog-trough cornered, log-sided single family residence. It is at 236 East Riverside Drive and set back approximately 100 feet from the road. The building was built in 1912 or possibly 1922. The property is eligible for listing in the NRHP under Criterion B for its association with Clayton "Casey" Newell Rockwell, a well-known local personage, and under Criterion C because it is a representative example of a Late 19th Century and 20th Century American Movement, Vernacular Estes Park Rustic architectural style.
- **RMNP Headquarters (5LR13751)**: This site is a one-and-a-half-story log building with stone foundation, which is presently used as a mixed use residential and commercial building. It is on a hill, just west of Moraine Avenue, where that street turns west towards the entrance to RMNP. A stone stairway leads from the building's front entrance to the sidewalk below. Along the sidewalk, the street curb is lined with stone. This building was constructed in 1923 to be the RMNP headquarters and contained an information bureau in the lobby, the park superintendent's office, a ranger's office, and a business office. The park headquarters was moved west to Beaver Meadows in 1967. The building is eligible for listing in the NRHP under Criterion A for its association with the RMNP, and under Criterion B for its association with Carl Piltz, a locally prominent stonemason.
- **RMNP Museum and Visitor Center (5LR13753)**: This site is a square, one-story, Rustic Style cottage with elements of the Craftsman Style. The building was originally built in 1931 as the RMNP Museum and Visitor Center. It remained the museum/visitor center until 1967, when the park headquarters was moved to Beaver Meadows. The building is eligible for listing in the NRHP under Criterion A for its association with the RMNP, and under Criterion B for its association with Carl Piltz, a locally prominent stonemason.
- **Estes Park Post Office (5LR13754)**: This U.S. Post Office building, which is now leased by the U.S. Post Office, was built in 1961 in the International Style. This building was originally determined to be not eligible for listing in the NRHP, but the SHPO disagreed with this determination (Nichols 2015b), noting that "this resource embodies the distinctive characteristics of the International Style with its flat roof, smooth surface, and bands of windows. Additionally, this building appears to have sustained little to no alteration and has served as a post office since its construction." The SHPO concluded that this building is eligible for listing in the NRHP under Criterion C for its architectural significance, and the CFLHD concurred with this assessment.
- **SH 262 (5LR13766.1)**: This resource is a segment of SH 262. The documented segments begins at the intersection of US 34 and US 36 at the east end of Elkhorn Avenue, continues west along Elkhorn Avenue to its intersection with Moraine Avenue and south along Moraine Avenue, turns to the west-southwest near Moraine Park Road, and ends approximately 400 feet west of 351 Moraine Avenue. SH 262 was originally a local road used by residents of Estes Park. After the RMNP opened in 1915, it was used as an entrance road into the park. The road was designated SH 262 in 1939 and, by 1946 it had been extended into the RMNP, ending at the intersection of Fall River Road (US 34) and Deer Ridge Junction. This route was used until 1965, when the Beaver

Meadows park entrance opened. At that time, the road was renamed SH 66 and, in 1977, it became part of US 36. The CFLHD originally determined that this road segment did not support the NRHP eligibility of the larger linear resource, but the SHPO did not concur with this determination (Nichols 2015b). They believed that this segment retains its original alignment and function and supports the overall eligibility of the road. They requested additional information about engineering features of the road, including a retaining wall on the north side of the road where it turns to the west. The CFLHD provided this information and concurred that the road segment supports the eligibility of the larger linear resource, which would eligible for listing in the NRHP under Criterion A for its association with RMNP and travel to that destination.

- **Panoramic Point (5LR13973)**: This site consists of a dirt platform that was constructed by removing the dirt and some bedrock from a steep slope on the south side of the Big Thompson River, cutting into the approximate 40° slope with hand tools, packing the dirt in front of the cut, and then supporting the packed dirt with a rock retaining wall. The retaining wall is oriented approximately N60°E and measures approximately 35 feet long, 3 feet thick, and 4 to 5 feet in height. It has approximately eight main courses of stones with some chinking stone layers scattered across the wall's face. The rocks are unaltered, include all shapes and sizes, and are dry laid. The packed dirt flat platform area measures 35 feet long by 20 feet wide with the cut into the upslope continuing for 10 more feet. Some loosely stacked stones are located at the edges of the cut, providing additional stability to the platform's upper edges. The general location of the wall is a photographic location on Little Prospect Mountain that has been used since the early 1900s by several local and national photographers to take panoramic views of the town of Estes Park. The platform offers an ideal spot to keep camera equipment and the extra glass plates safe on the steep slope and close by to where the camera is actually set up. No period-specific artifacts were found in association with the rock wall and platform. The site is eligible for listing in the NRHP under Criterion A, for its association with an activity (panoramic photography) that has distinguished Estes Park from nearly its beginning.

3.11.2 Environmental Consequences

No Action Alternative

The No Action Alternative would leave existing 2015 roadway and other study area conditions as they are through 2040. No roadway capacity, safety, mobility or accessibility improvements would be made within the downtown involving Elkhorn Avenue, Moraine Avenue or Riverside Drive.

No ground-disturbing activities are associated with the No Action Alternative and no cultural resources will be affected. Over time, however, additional noise and congestion resulting from increased traffic may result in indirect, if not direct, effects upon extant historic properties and diminish the qualities for which those properties are considered significant.

Proposed Action

Archaeological

The Proposed Action would not disturb any archaeological resources as the project area lies within an urbanized developed area, and the downstream area contains a rock outcrop with a nearly vertical slope and a river channel that has been scoured to bedrock. The Northern Arapaho Tribe was consulted to determine if archaeological resources could be discovered, and given the topography in the area, it is determined that no such resources would be located in the Project Area.

Historic

The Proposed Action involves conversion of existing roadways from two-way to one-way through downtown Estes Park. Additional noise and congestion resulting from increased traffic may result in indirect, if not direct, effects upon extant historic properties and diminish the qualities for which those properties are considered significant.

In previous consultation with the SHPO, CFLHD determined that the project will have *no effect* on the following resources. The expansion of the project with the downstream APE and consideration of the roundabout intersection option at Moraine/Crags/Riverside will not change these determinations.

- Clayton Newell Rockwell Residence (5LR13747)
- Estes Park Post Office (5LR13754)

The following resources are near the Moraine/Crags/Riverside intersection or in the downstream APE. CFLHD has made the following determinations of effects on these resources.

- **RMNP Headquarters (5LR13751)**: Two roadway intersection options, traffic signalization or roundabout, are being considered at the Moraine/Crags/Riverside intersection. Neither option would encroach on the former RMNP Headquarters, which is eligible for its association with the park and with a locally prominent stonemason, nor will they affect the stone-lined curb, which is a contributing element to the property. Therefore, we conclude a finding of ***no adverse effect*** to this property by this undertaking.
- **RMNP Museum and Visitor Center (5LR13753)**: Two roadway intersection options, traffic signalization or roundabout, are being considered at the Moraine/Crags/Riverside intersection. Neither option would encroach on the former RMNP Museum and Visitor Center, which is eligible for its association with the park and with a locally prominent stonemason, nor will they affect the stone-lined curb, which is a contributing element to the property. Therefore, we conclude a finding of ***no adverse effect*** to this property by this undertaking.
- **State Highway 262 (5LR13766.1)**: This section of State Highway 262 within the APE will be repaved and signaling will be upgraded over current paving along the original road alignment. These changes are consistent with routine maintenance operations and will not diminish those aspects of those elements of the site that make it eligible. A slightly different intersection will be built, requiring the removal of a non-historic building that did not allow for a straight approach from Moraine Avenue to West Riverside or Crags Road (Moraine/Crags/Riverside). Two roadway intersection options, traffic

signalization or roundabout, are being considered at the Moraine/Crags/Riverside intersection. Both options are in the same location but it is now safer because awkward turning movements have been eliminated. The grade at the intersection will be dropped 4 to 6 feet to address local topography and connectivity requirements. The historic short rock retaining wall and rock-lined curb, along the west side of the curve in front of sites 5LR13751 and 5LR13753 (the former Rocky Mountain Park headquarters and museum/visitor center), will remain in place. A new short retaining wall will be added, if necessary, in front of these older wall features in conjunction with the lower road grade. The retaining wall along the east side of Moraine Avenue that stretches from 250 Moraine to 281 Moraine Avenue will also not be directly impacted. This wall is located more than 100 feet north of the proposed new construction. In short, the proposed improvements to Moraine Avenue will not adversely affect the historic integrity of SH 262 or any of its associated features. Therefore, we conclude a finding of ***no adverse effect*** to this property by this undertaking.

- **Panoramic Point (5LR13973)**: The edge of the cut to widen the downstream Big Thompson River channel is located 50-60 feet north of this distinctive feature. The channel widening cut work will be completed in such a way that will not destabilize the hillslope and cause the feature to slide downhill. The distinctive feature will be protected during construction to ensure that it is not damaged by adjacent construction. Therefore, we conclude a finding of ***no adverse effect*** to this property by this undertaking.

Concurrence letters may be found in *Appendix C: Agency Coordination*.

3.11.3 Mitigation

The Proposed Action will not adversely affect any of the six historic properties within the APE, as confirmed in a May 19, 2016 letter from the SHPO. Other than temporary stabilization of the rock platform at Panoramic Point (5LR.13973) during future phases (beyond Phase 1), no mitigation is required.

3.12 Soils and Geology

This section addresses soil and geology resources within the areas to be disturbed. Information on geologic resources was obtained from the United States Geological Survey (USGS) and the Colorado Geological Survey. Information regarding soil characteristics was obtained from Natural Resources Conservation Service (NRCS) literature or databases, including the Land Resource Regions and Major Land Resource Areas of the U.S., the Caribbean, and the Pacific Basin, U.S. Department of Agriculture (USDA) Handbook 296 (USDA-NRCS 2006). Soil baseline characterization for the study area is based on Web Soil Survey review and analyses (NRCS 2015). This tool uses the most detailed level of soil mapping completed by the USDA-NRCS.

3.12.1 Affected Environment

Geology

The study area is entirely within Major Land Resource Area (MLRA) 48A, the Southern Rocky Mountains Province of the Rocky Mountain System (USDA-NRCS 2006). This Major Land Resource Area consists primarily of two belts of strongly sloping to precipitous mountain ranges trending north to south. Several basins, or parks, are between the belts. Elevation ranges from 6,500 to 14,400 feet above mean sea level.

Knotted mica schist (Xbk) a Paleoproterozoic metamorphic rock, underlies the study area. The age of metamorphism is 1,713 million years ago, plus-or-minus 30 million years (Cole and Braddock 2009). Younger Precambrian intrusive rocks included within the study area include the Longs Peak granite (YgLP). Recent alluvial stream-deposited sand, silt, and gravel underlie the floodplains and terraces along major streams.

Paleontology

The igneous and metamorphic rocks that form bedrock in the area would not have preserved fossils and would be ranked as 1 (low potential for fossils under the Potential Fossil Yield Classification System (Bureau of Land Management 2008). In addition, these rocks may have preceded the presence of life on earth, precluding the potential presence of fossils. Exposures of these widespread igneous and metamorphic rocks would be expected to be devoid of fossils.

Mineral Resources

In the Rolling Uplands, pegmatites have been explored for gem quality minerals and rare earths. In addition, the metamorphic rock terrains may contain high-quality mica crystals.

Geologic Hazards

Geologic hazards that could occur within the general area include landslides, rock-fall, floods, and earthquakes. The most likely hazards in the study area are floods or slope instability that would be triggered by heavy precipitation (melting snow or rainfall) that saturates and lubricates unconsolidated materials. The potential for landslides is widespread in the general area, but not within the study area boundary based on hazard maps available from the Colorado Geological Survey (2012). Flooding is a known hazard within floodplains that exist within the project limits.

Soils

The soils in this area primarily formed in alluvium, slope alluvium, and colluvium derived from igneous and metamorphic materials. The soils formed on floodplains, hills, and mountain slopes. The soils generally have loamy to coarse textures, and have high rock fragment content. Table 3.12-1 provides a summary of the soil characteristics within the project vicinity, generated from the Larimer County Soil Survey (NRCS 2015). Because the study area is within a urbanized developed area, most of the soils have been previously disturbed or altered in some way due to anthropogenic causes, such as roads, structures, parking lots, and parks.

The soils within the project vicinity are rated as poor as a source for road fill due to shallow depth to bedrock (map units 50 and 51), wetness (map unit 52), and stone and cobble content. The floodplain soils are very deep, whereas, the soils occurring on hills or mountain slopes are shallow to moderately deep. All of the soils are low to moderately erodible by wind or water.

Table 3.12-1: Soil Characteristics in the Study Area

Map Unit Symbol	Map Unit Name	Acres	Geologic Parent Material	Geomorphic Description	Depth to Bedrock (inches)	Potential Source for Roadfill	Erosion Hazard	
							Water	Wind
50	Cathedral-Ratake complex, 5 to 15 percent slopes	0.03	slope alluvium derived from granite and gneiss	Hills	18	Poor	Moderate	Moderate
51	Cathedral-Ratake complex, 15 to 35 percent slopes	1.7	slope alluvium derived from granite and gneiss	Hills	18	Poor	Low	Moderate
52	Chaffee loam, 0 to 3 percent slopes	10.0	coarse-loamy alluvium derived from granite and gneiss and/or schist over sandy and gravelly alluvium derived from granite and gneiss and/or schist	Floodplains	79+	Poor	Moderate	Moderate
4703D	Bullwark-Catamount families-Rock outcrop complex, 40 to 150 percent slopes	0.19	colluvium and/or residuum derived from igneous and metamorphic rock	Mountain Slopes	49	Poor	Low	Moderate

Source: AECOM, 2016.

Note: Ratings listed for dominant soil components only.

3.12.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, no new construction would occur and therefore there would be no impacts to geologic resources. Soils would continue to develop in their current state, assuming no change in land use activities. Soil fertility, productivity, and erosion rates would remain similar to the past and present rates.

Proposed Action

Geology

No unique geologic features are located within the analysis area; therefore, the proposed project is anticipated to have no effect on such features.

Direct impacts from geological hazards could occur if those hazards resulted in a health and safety concern to people or damage to infrastructure or facilities causing loss of use. While seismic hazards are not a concern, slope instability and flooding may present potential hazards to the construction and operation of the Proposed Action. Direct impacts of geological hazards during construction would include the potential for grading and excavation to exacerbate slope instability. Impacts may be increased during periods of high precipitation or high soil moisture. Indirect effects during construction may include changes in slope or grade that may temporarily increase runoff or erosion that increases the risk of slope instability. Direct impacts from slope instability would be considered minor to moderate. Potential impacts from slope instability would likely be short-term. While short-term effects could be incurred during construction, they would be anticipated to be minor.

Minerals

It is not likely that there are potentially commercially extractable mineral resources within the study area so no impacts from construction of the alternatives would be anticipated.

Paleontological Resources

There is low potential for the presence of scientifically important fossils within the study area, so it is unlikely that paleontological resources would be adversely affected by construction. Therefore, impacts to scientifically significant paleontological resources are expected to be negligible from construction or operation in the roadway right-of-way.

Soils

Under the Proposed Action, project construction would result in approximately 12 acres of disturbance to soils within the proposed project limits. Based on the proposed alignment of the right-of-way within previously disturbed areas, it is anticipated that project construction would result in the re-disturbance of surface soils and in some cases new disturbance of subsurface soils. Some of the soils have been previously altered from productive states to parking lots, roads, and commercial or residential developments. Impacts to these soils would be minor because they have already been altered from their natural state, and are no longer productive soils.

The soils within the project vicinity are rated as poor as a source for road fill due to shallow depth to bedrock (map units 50 and 51), wetness (map unit 52), and stone and cobble content. The floodplain soils (map unit 52) are very deep and lack large stones or cobbles. Wetness is the primary constraint, and otherwise it is likely that these loamy textured soils would qualify as good road fill material.

Construction Impacts

Potential impacts to soils as a result of the proposed project would include mixing of previously unaltered subsurface soils, compaction, and a short-term increase in wind and water erosion during construction. Some productive soils, currently growing vegetation may be used as fill for the right-of-way and would be removed from a productive state. However, these areas are relatively small in size and impacts would be considered minor.

3.12.3 Mitigation

Any slope instability concerns will be mitigated through design. During construction topsoil will be conserved and replaced on any exposed slopes. All new slopes will be revegetated with native species.

A stormwater permit from the state of Colorado would be required for the project under the General Permit for Stormwater Discharges Associated with Construction Activities from the CDPHE. FHWA would develop a stormwater management plan in compliance with the provisions under the permit. This plan would include measures to minimize and mitigate erosion and sedimentation impacts associated with stormwater runoff or snowmelt.

3.13 Hazardous Materials

The following discussion summarizes information prepared for the project presented in *Hazardous Materials Assessment*, Volume 3 and then describes the potential effects of the No Action Alternative and the Proposed Action. The discussion concludes with measures to avoid and/or reduce identified effects.

The *Hazardous Materials Assessment* was prepared with modifications to the recommended guidelines established by the American Society for Testing and Materials (ASTM) Standard 1527-13, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process" (ASTM, 2013) and US Environmental Protection Agency (EPA) Standards and Practices for All Appropriate Inquiries (40 CFR Part 312). The purpose of the *Hazardous Materials Assessment* is to identify controlled, historical and recognized environmental conditions (RECs) in connection with the study area. ASTM Standard 1527-13 defines RECs as: "…the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property." When potential regulated material concerns as identified during the limited site reconnaissance or review of agency databases or other relevant resources could not be confirmed without additional inspection or investigation, the sites were distinguished as sites with potential RECs.

The ASTM definition for controlled recognized environmental condition (CREC) is: "a recognized environmental condition resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls."

The ASTM definition for historical recognized environmental condition (HREC) is: "a past release of any hazardous substances or petroleum products that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls.

The *Hazardous Materials Assessment* evaluated properties adjacent to and within the vicinity of the project footprint (i.e., study area) for the presence of contamination from hazardous materials and to identify if these sites have potential or recognized (known) existing or past soil and groundwater contamination. Contaminated soils and groundwater and the presence of hazardous materials require special consideration for worker health and safety, right-of-way acquisition processes and materials management practices. Encountering soil and groundwater contamination during the construction process without prior knowledge of contamination has the potential to affect the project in terms of mitigation, cost, schedule and project worker health and safety. Therefore, the identification of potential or recognized soil and groundwater contamination within the study area is necessary during the planning process so that avoidance or mitigation measures can be implemented when reasonably possible.

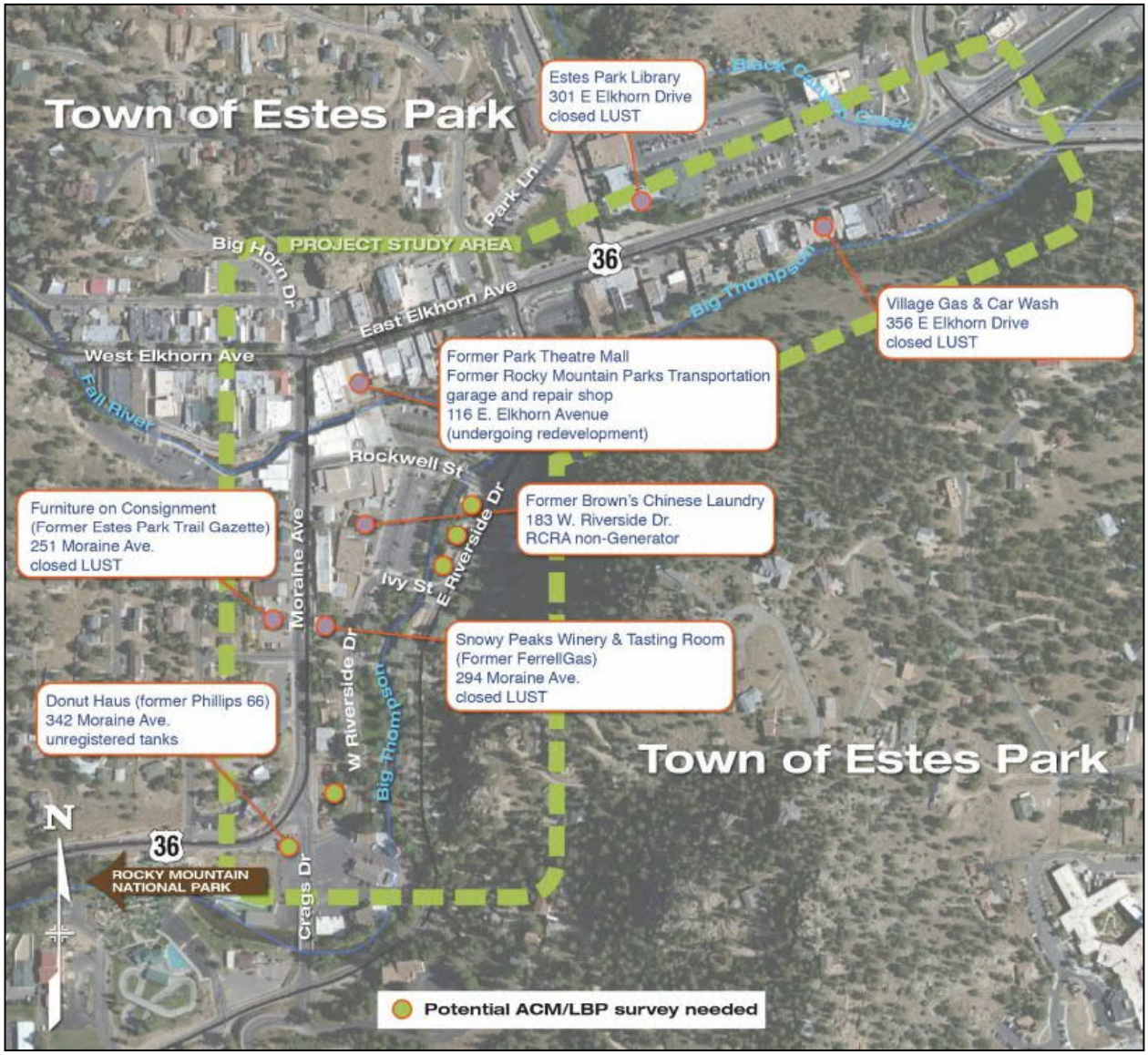
The *Hazardous Materials Assessment* was performed for the sole purpose of assisting in the identification of potential and RECs associated with properties within and adjacent to the study area. Limitations are described in *Hazardous Materials Assessment*, Volume 3.

3.13.1 Affected Environment

Environmental Database Search Results

Figure 3.13-1 and Table 3.13-1 present site locations and details identified from the environmental database search for sites located within 0.25 miles of the study area. The figure utilizes acronyms such as “UST”, “LUST”, and RCRA. A UST refers to an underground storage tank; a LUST refers to a leaking underground storage tank; and a RCRA refers to a Resource Conservation and Recovery Act. Closed underground storage tanks refers to the process of remediating by removal or leaving the tank in place and filling it with a harmless, solid like sand, or it can be closed in place in an approved manner.

Figure 3.13-1: Mapped Results of Environmental Database Search



Source: FHU, 2016.

Table 3.13-1: Environmental Database Search Result Descriptions

Site Address	Distance from Study Area	Present/Not Present	Site Description
172 West Elkhorn Avenue (Bob's Amoco)	Within 1/8 mile	Not present/out of study area – west and up-gradient	Site listed in the EDR database as a closed LUST/Trust/ UST site. A release was confirmed at the site in September 2001. Four USTs were installed in 1982 and have been permanently closed. Currently, there is no building present at the address listed for Bob's Amoco at the corner of Elkhorn and Moraine. The Bobs Amoco station (172 W. Elkhorn Avenue) was located on the west end of Elkhorn, where a livery used to be. This would be, today, 230 West Elkhorn, which is located outside the study area. There was also a service shop across the street in the 1920s-1930s. There was another station at the west end of Elkhorn. Based on the distance from the proposed project's limits of construction (more than 700 feet) and topographic position relative to Fall River, this facility is not considered a REC for the project. Further discussion is provided in the *Hazardous Materials Assessment,* Volume 3.
301 East Elkhorn Avenue (Estes Park Library) (associated address with 321 East Elkhorn Avenue regulatory files)	Within 1/8 mile	Present	Site listed in the EDR database as a closed LUST. Formerly the location of a filling station in the 1970s and two in the 1980s. Twelve (12) tanks were removed in 1986. Contaminated soil and a sheen on groundwater was observed during the tank extraction. The last record of communication between the Town and OPS indicated that the site was site undergoing assessment. Based on the project scope of work in relation to the contaminations located at this site and regulatory status, it is considered a CREC; however it is considered unlikely that it would impact project construction. Further discussion is provided in Section 4.3.2.1 and Table 5 in the *Hazardous Materials Assessment*, Volume 3.
356 East Elkhorn Avenue (Village Gas & Car Wash)	Within 1/8 mile	Out of study area – east	Site listed in the EDR database as a closed LUST/Trust/UST. A release was confirmed at the site in January 2000. Two USTs were installed in 1977 and it is unknown when the other three USTs were installed. The five USTs have been permanently closed. Based on the project scope of work in relation to the contaminations located at this site and regulatory status, it is considered a CREC; however it is considered unlikely that it would impact project construction. Further discussion is provided in Section 4.3.2.1 and Table 5in the *Hazardous Materials Assessment*, Volume 3.

Site Address	Distance from Study Area	Present/Not Present	Site Description
561 Big Thompson Avenue (Schrader's Country Store #480) (formerly Estes Park 66)	Within 1/8 mile	Out of study area – east	Site listed in the EDR database as a LUST Trust site. It is currently operated as a filling station and convenience store and appears to be undergoing remedial activity. The most recent remedial action plan listed in the EDR report was dated 2010. Current tanks in place contain diesel fuel and gasoline. The regulatory files tied to when the facility was operated as Estes Park 66 indicate those release events were closed to no further action in 1993. Based on the project scope of work in relation to the contaminations located at this site and regulatory status, it is considered a CREC; however it is considered unlikely that it would impact project construction. Further discussion is provided in Section 4.3.2.1 and Table 5 in the *Hazardous Materials Assessment*, Volume 3.
176 Moraine Avenue (Residence)	1/8 – ¼ mile	Not present – in study area, but could not verify address.	Site listed in the EDR database as a closed UST. One UST was installed at this property in 1936 and has been permanently closed. Based on the project scope of work in relation to the tanks formerly located at this site, it is considered an HREC; however it is considered unlikely that it would impact project construction.
251 Moraine Avenue (Furniture on Consignment / Formerly Estes Park Trail Gazette)	Within 1/8 mile	Present	Site listed in the EDR database as a closed LUST. One LUST was closed-in-place at this property in 1992 and has been permanently closed. See Photos 10 and 11 in Appendix C in the *Hazardous Materials Assessment*, Volume 3. Based on the project scope of work in relation to the tanks formerly located at this site, it is considered an HREC; however it is considered unlikely that it would impact project construction.
292-294 Moraine Avenue (Snowy Peaks Wine & Tasting Room / Formerly Ferrellgas)	Within 1/8 mile	Present	Site listed in the EDR database as a closed LUST. One LUST was closed at this property in 1999 and has been permanently closed. See Photos 8 and 9 in Appendix C of *Hazardous Materials Assessment*, Volume 3. Based on the project scope of work in relation to the tanks formerly located at this site, it is considered an HREC; however it is considered unlikely that it would impact project construction.

Site Address	Distance from Study Area	Present/Not Present	Site Description
342 Moraine Avenue (Donut Haus)	Within 1/8 mile	Present	Site not listed in the EDR database. During visual inspection (September 9, 2014), remnant fueling pads/ventilation systems were observed on property grounds. See Photos 3-7 in Appendix C of *Hazardous Materials Assessment*, Volume 3. Contact with the Town of Estes Park Community Development produced no records for the site (presumably from any potential recordation/tracking occurring prior to onset of Colorado Storage Tank Information System (COSTIS). Due to presence of fill ports, the site is likely to have a current UST(s). Further discussion is provided in Section 4.3.2.1 and Table 5 of *Hazardous Materials Assessment*, Volume 3. This site is considered a REC for project construction.
508 Pine River Lane (Alpine Automotive and Towing)	1/8 – 1/4 mile	Out of study – west	Sited listed in the EDR database as a historical auto station. Due to the distance relative to the project area, this site is not considered a REC.
183 West Riverside Drive (Browns Chinese Dry Cleaning)	Within 1/8 mile	Present – but does not appear to have violations.	Sited listed in the EDR database as a RCRA Non-generators and Historical Cleaners. Associated activities with drycleaners include the past usage of solvents; including perchlorethylene. No reported violations have been found on record and no indications of release were noted. Due to the project scope of work and above information this site is considered an HREC; however it is considered unlikely that it would impact project construction.
457 East Wonderview (Stanley Village Dry Cleaners)	1/8 – 1/4 mile	Out of study area – downgradient.	Sited listed in the EDR database as a Drycleaners; Historical Cleaners; RCRA Conditionally Exempt Small Quantity Generator (generates less than 100 kilograms [kg] of hazardous waste or less than 1 kg of acutely hazardous waste per month). No reported violations found. Due to the distance and topographic gradient relative to the project area, this site is not considered a REC.
451 Wonderview (Safeway)	1/8 – 1/4 mile	Out of study area – downgradient.	Sited listed in the EDR database as a RCRA Conditionally Exempt Small Quantity Generator (generates less than 100 kg of hazardous waste or less than 1 kg of acutely hazardous waste per month). Due to the distance and topographic gradient relative to the project area, this site is not considered a REC.

Site Address	Distance from Study Area	Present/Not Present	Site Description
116 East Elkhorn Avenue	Within 1/8 mile	Present	Potential RECs were identified during the historical resource review. The depicted Rocky Mountain Parks Transportation Company garage and repair shop is located at the present location of 116 East Elkhorn Avenue. The facility was reportedly constructed around 1907 as Estes Park Transportation Company before it was sold in 1916 and become the Rocky Mountain Parks Transportation Company. The facility was originally used to service mountain wagons and steam automobiles and later on tour buses. The facility became the Rocky Mountain Pottery Company in the 1950s and redeveloped into the Park Theatre Mall in the early 1970s. According to an article published by the Rocky Mountain Performance Arts Center called the “History of the Park Theater Mall Property”. The article was retrieved from the Rocky Mountain Performance Arts website on May 27, 2015, the building burned down in 2009 and has been vacant and potentially undergoing redevelopment.

Source: FHU, 2016.

Site Reconnaissance, Interviews and Regulatory Records Review: Results

A limited site reconnaissance was performed September 9, 2014 and revisited again on April 21, 2016. The site reconnaissance included an assessment of the study area for obvious evidence of potential contamination sources.

The study area and project vicinity were observed for evidence of potential presence of regulated materials, such as:

- General uses; in particular, uses that could result in the use and/or release of hazardous substances or petroleum products
- Evidence of USTs, including fill ports, vent pipes, and fueling facilities
- Presence of Aboveground Storage Tanks (ASTs) and evidence of secondary containment for spill prevention
- Disposal of solid waste, waste management practices, and general housekeeping of waste storage/disposal areas
- Evidence of on-site dumping or landfilling
- Presence of types of equipment that have been historically associated with the use of as a dielectric fluid coolant and stabilizer
- Handling and storage of hazardous materials, such as the presence of 55-gallon drums or tote containers
- Presence of drains, sumps, septic systems, wastewater discharges, pits, ponds, lagoons, staining, pooled liquids, stressed vegetation, odors or wells

Local agency interviews occurred with the Town of Estes Community Development Department, Estes Park Building Permit Office, and the Planning, Rural Land Use Center, Code Compliance section of the Larimer County Community Development Division. To the best of their knowledge and/or records, there has been no occurrence of or evidence of spills, releases, or undocumented USTs within the study area, aside from the UST(s) at 342 Moraine Avenue, the Donut Haus (Thompson 2015).

342 Moraine Avenue (Donut Haus)

During the limited site reconnaissance, evidence of former USTs was observed on the Donut Haus property at 342 Moraine Avenue. Observations included three fill-port caps and ventilation system apparatus. Additionally the structure of the building was indicative of a former filling station. Upon further research it was determined that prior to 1975, when ownership changed hands and it was operated as the Donut Haus, the property was operated as a Phillips 66 gas station for approximately 30 years (about 1947 to 1974). The years of operation indicate that the tanks were likely never registered under the state storage tank regulations, which were implemented in the late 1980s. Photographs online indicated that there were three pumps at the facility, which correlates with the three fill ports observed. The property was not listed in the EDR report (2014a) or the Colorado Storage Tank Information System (COSTIS) website. Furthermore, the Colorado Division of Oil & Public Safety (OPS), the Larimer County Planning, Rural Land Use Center, Code Compliance Department, Town of Estes Park Building Permit Office and the Estes Valley Fire Protection District EVFPD) do not have record of registered USTs at the property.

The OPS was also contacted in May 2015 to inquire on the presence of a UST site. Further investigation is needed during final design to evaluate the status further.

294 Moraine Avenue (Ferrellgas; now Snowy Peaks Winery & Tasting Room)

OPS records indicate that a 500-gallon gasoline fuel UST was closed-in-place at the former Ferrellgas property (OPS 2015a). The tank was located off the southeast corner of the building parcel, approximately 15 feet west of West Riverside Drive. There was also a liquid propane AST on the west side of the parking lot along Moraine Avenue, that has since been removed.

The UST was originally in operation from 1968-1985, kept empty from 1985-1996 and then closed-in-place using sand as the inert fill material. The piping and apparatus were also removed. The tank closure documentation for the UST indicated that several soil samples were collected. Readings for VOCs were taken at the time of sampling and the photoionization detector (PID) readings ranged from 3 to 13 parts per million (ppm). Minimal impacts to soil from petroleum were observed in the soil samples collected down gradient.

Groundwater samples were also collected. Low levels of petroleum compounds and VOCs were detected; however they did not exceed the Colorado Groundwater Quality Standards. A no further action letter was issued by the OPS on March 23, 1999.

251 Moraine Avenue (Estes Park Trail Gazette; now Furniture on Consignment)

In March of 1992, a 560-gallon UST was removed from the Estes Park Trail Gazette property by Inter-Mountain Petroleum Services, Inc. (OPS 2015b). The tank closure documentation indicated that the UST was located on the north side of the building. Soil samples were collected during the removal and readings for VOCs were taken at the time of sampling. No PID readings were recorded above background and the tank observations were reported as “in good shape with no holes or pitting.”

561 Big Thompson Avenue (Shrader’s Country Store #480)

The OPS records showed that a release was documented in August 2010 of petroleum contaminated soil discovered during a utility trenching project along the west side of the Schrader Country Store filling station property. The excavated soil was tested and was found to be below regulatory action levels. The contaminated soil that was already excavated from the trench site was removed and properly disposed of at the North Weld County Landfill in Ault, Colorado. Following coordination with OPS additional investigation and remediation was required. Groundwater flow was determined to be to the southeast toward Big Thompson River. Remedial activities at the facility consisted of using monitoring wells, soil vapor extraction and air sparge technology. Remaining soil that was affected by petroleum was remediated to OPS’ satisfaction and a ‘no further action’ letter was issued in November 2012.

301 East Elkhorn Avenue (Conoco Station and Husky Station; now Estes Park Library)

The two filling stations which occupied the site of the current public library and parking lot were located at 301 East Elkhorn Avenue and 321 East Elkhorn Avenue. During tank closure activity in 1986, twelve tanks were removed from the site. During excavation soil contamination was observed, including a sheen on groundwater in the excavation. Contamination was also discovered during the 1990 construction of the library. Sampling and analysis were conducted and monitoring wells were installed at the facility. Field investigations continued throughout the

1990s and into the 2000s. The most recently dated record was 2005 and assessment was on-going. However, based on plume maps located in the records, it appears that the contamination was located on the north side of Elkhorn Avenue and would not impact the proposed scope of work on the south side of Big Thompson River.

356 East Elkhorn Avenue (Village Gas & Car Wash; now strip mall)

A petroleum release was documented in 2000 at the former Village Gas & Car Wash facility located between the Big Thompson River and Elkhorn Avenue. Soil and groundwater contamination was discovered and remedial assessment has taken place. A sheen was observed in groundwater and also observed in Big Thompson River. Based on the background section of the 2004 quarterly monitoring report, a Corrective Action Plan was implemented in late 2000 and continued until April 2004. Remediation included the use of monitoring wells as well as the use of soil vapor extraction technology. Groundwater flow direction was determined to be to the southeast toward the river. The OPS issued a no further action letter in April 2005, stating that the source of contamination appears to have been removed and the potential for endangerment to harm health, safety and the environment was reduced. OPS close the facility to no further investigation; however, residual contamination may still be present. Contaminants of concern are petroleum products and the last sampling event showed concentrations above detection limits, but below regulatory action levels.

3.13.2 Environmental Consequences

No Action

The No Action Alternative would not require activities that would encounter hazardous materials or potentially expose workers or others to risks associated with hazardous materials. Existing hazardous materials present within the study area would remain in place.

Proposed Action

Site clearing and excavation as well as building demolition required to construct the Proposed Action would potentially expose workers to potential environmental hazards and present the need for specific environmental management requirements. This may also involve workers encountering unknown sites and unknown conditions. In either case, taking standard precautions and following prescriptive protocol will address potential worker exposure, right-of-way acquisition and materials management practices.

Further investigations will likely be conducted as part of the final design process to refine specific construction period requirements. One example is the need for subsurface soil and groundwater sampling and site characterization at 342 Moraine Avenue to fully understand environmental conditions in this location in relation to excavation required for lowering the Moraine Avenue/Crags Drive/Riverside Drive intersection and the potential need for cleanup (remediation).

Construction Impacts

Requirements defined as part of this follow-up work would be made part of the construction plans, specifications and estimates. This process is designed to address exposure risks and the potential for further environmental degradation from contaminants present in the environment.

Similar investigations and requirements will apply to PCBs, Lead Based Paint (LBP)/Asbestos Containing Materials (ACM), and previously unknown hazardous materials identified prior to construction and/or unexpectedly encountered during the construction process.

3.13.3 Mitigation Measures

The following mitigation measures would address the project requirements and the identified effects.

A full Phase I Environmental Site Assessment (ESA) and a Phase II investigation to evaluate nature and extent of soil and groundwater contamination will be completed for acquisition of 342 Moraine Avenue (Donut Haus). A chain-of-title search to establish ownership history will be conducted as part of the Phase I ESA. Tank closure permits from the EVFPD, in addition to OPS requirements and proper mitigation should be obtained for pulling the underground tanks that are on the property. The tanks should be removed and additional work will be performed in compliance with applicable permit requirements.

ACM and LBP surveys will be conducted for the following structures prior to demolition:

- 342 Moraine Avenue (Donut Haus)
- 189 East Riverside Drive
- 201 East Riverside Drive
- 221 East Riverside Drive
- Ivy Street Bridge
- Rockwell Street Bridge
- Riverside Drive Bridge

The findings of these surveys will be addressed with project-specific requirements and permit conditions as part of the final design process and should be followed when demolition occurs.

3.14 Public Services and Utilities

This section addresses issues and potential effects of the alternatives on primary public services (police, fire, emergency medical services) and utilities (water, sewer, electricity, gas, and telecommunications).

3.14.1 Affected Environment

Key public services provided in Estes Park include police, fire protection, and emergency medical services. The Estes Park Police Department is located downtown at Town Hall (170 MacGregor Avenue). The Police Operations Division of the Police Department provides patrol, investigation, and enforcement of traffic laws (State of Colorado 2015b). The Estes Valley Fire Protection District Station is just east of downtown at 901 North St. Vrain Avenue and provides fire protection and emergency services within the Town of Estes Park and throughout the unincorporated Estes Valley (Estes Valley Fire Protection District 2015). Emergency medical services are provided by the Ambulance Department of the Estes Park Medical Center located at 555 Prospect Avenue south of downtown on the other side of Prospect Mountain (Estes Park Medical Center 2015).

Water: The Town of Estes Park provides water utilities in the study area. The Water Division provides water and water treatment facilities, long-term water rights planning, EPA-regulated testing, backflow regulation and fire hydrant maintenance (State of Colorado 2015c). Water main lines are located within the study area on Elkhorn Avenue, Moraine Avenue, and parts of Riverside Drive (southern end and north of Ivy Street). Fire hydrants are located within the study area on Moraine Avenue and on Riverside Drive north of Ivy Street.

Future or proposed facilities, not part of the Proposed Action, include:

- The Town has evaluated several potential alignments for a new water main at Moraine Avenue /Elkhorn Avenue intersection
- The Town is exploring an opportunity to extend water facilities up Davis Hill

Electrical: The Town of Estes Park Light and Power Division provides electrical service to over 12,000 customers in the greater Estes Valley area including Glen Haven and Allenspark (State of Colorado 2015a). Electric power lines within the study area are located above ground along most of Moraine Avenue with two underground crossings and underground along Riverside Drive north of Ivy Street. Street lights existing along Elkhorn, Moraine and East and West Riverside within the project study area. The Light and Power division maintains and operates the street lights along all roadways within the study area including CDOT highways.

Wastewater: Wastewater facilities within the project area are provided by the Estes Park Sanitation District (EPSD), an independent governmental enterprise. The wastewater treatment facility is at 610 Big Thompson Avenue south of the study area (Estes Park Sanitation District 2015). Sewer mains are located within the study area on Elkhorn Avenue, the mid-section of Moraine Avenue, and along most of Riverside Drive. The EPSD sanitary sewer lines include service tie-ins to adjacent properties throughout the project area. The Upper Thompson Sanitation District (UTSD) provides wastewater treatment service to some locations within Town limits as well as areas around Estes Park (Upper Thompson Sanitation District 2015). Sewer

mains for this sanitation district are located within the study area along Elkhorn Avenue and along the northern end of Riverside Drive north of Ivy Street. All UTSD lines in downtown are transmission lines (no service lines).

Natural Gas: Natural gas is provided by Xcel Energy. Xcel gas pipelines are located within the road right-of-way on Elkhorn, Moraine, West and East Riverside Drives. Xcel gas provides service connection to buildings within the study area.

Telecommunications: Century Link provides telecommunication services within the Town of Estes Park, including internet and phone lines. Within project limits, Century Link lines are located underground along Elkhorn, Moraine and Rockwell. Century Link has their primary regional switching center within the project limits, located at 150 Moraine Avenue. Additionally, TDS Telecom, formerly Baja Broadband, provides cable television and internet services within the Town of Estes Park. The lines are located aerially or underground with Town of Estes Park's power lines along East and West Riverside Drives.

3.14.2 Environmental Consequences

No Action Alternative

Under the No Action Alternative, no construction would occur and therefore there would be no new impacts to public services or utilities. Future emergency response times for police, fire, and emergency medical services would be expected to increase over time as traffic congestion along Elkhorn and Moraine Avenues increases.

Proposed Action

There would be no adverse impacts from the Proposed Action on emergency response times or routes because reduced congestion and delay would provide for more rapid travel through the downtown during normally congested timeframes and because new traffic signals will include emergency preemption allowing for upfront warning and signal control for emergency service providers. Similarly, evacuation routes and travel times would not be adversely impacted because traffic signals will be pre-empted if emergency evacuations were required. The proposed lane configurations and on street bike lanes on Moraine and Riverside provide additional room for vehicles to yield to emergency vehicles.

The Proposed Action will impact Town of Estes Park water lines at Moraine Avenue/Riverside Drive/Crags Drive and the Riverside Drive Bridge at a minimum. Water lines will be relocated as necessary. Impacts to several existing Town of Estes Park power poles/street lights along Riverside are also likely. These power poles and street lights will be relocated. Power lines will be relocated as needed along Riverside Drives and new street lighting matching the downtown standard light pedestals will be installed along Riverside Drive.

The Proposed Action will impact sanitary sewer lines at the Riverside Drive Bridge. The existing sanitary sewer lines for both the EPSD and UTSD will be relocated to accommodate the new East Riverside Drive Bridge. Additional relocations and manhole adjustments are likely and will be confirmed and addressed during final design.

The Proposed Action will impact existing telecommunication lines for both Century Link and TDS Telecom at the intersection of Moraine Avenue/Riverside Drive/Crags Drive. Underground

telecommunication lines will be relocated to accommodate the construction of the Proposed Action. Similarly, existing underground Xcel gas lines will be relocated at this intersection.

The project will result in no loss of utility service to the public or businesses.

Construction Impacts

Construction of the project would have minor impacts on public services and utilities, but these effects (facility relocations and reconnections) would be resolved during the final design process to avoid service cutoffs and reductions in service. The final design process would provide detailed plans to maintain traffic and emergency response times during lane closures. The construction is expected to occur in the off-season so travel disruptions would not be exacerbated by congestion.

3.14.3 Mitigation

The following mitigation measures are proposed to address potential impacts to public services during construction:

- Coordinate construction activities and design details with local public service and utility service providers during final design, to minimize disruptions, maintain traffic and accommodate connectivity requirements.
- Replace fire hydrants at the same locations and spacing as existing, if fire hydrant replacement is necessary.
- Work with Town staff to explore opportunity to place conduits under the road during construction for existing and future electric facilities.
- Remove sanitary services back to the main line for buildings that will be removed/ relocated.
- Continue to coordinate with utility service providers to identify existing utility agreements, utilities that may need relocated, and develop designs and plans for relocation. Develop utility agreements detailing the scope and responsibilities for any utility requiring relocation.
- Public notice will be required and provided prior to any service disruptions.

3.15 Visual Resources

This section addresses the visual environment, including visual quality, aesthetics, and community design. The analysis is qualitative and references local policy documents where applicable.

Visual analysis involves evaluating views of the surrounding landscape from a project corridor as well as views from off-site vantage points of a proposed project or project feature (i.e., views available to residents living near a proposed highway alignment). The framework for evaluating project impacts on the visual environment is broken down into three parts:

- Characterization of the visual character and qualities of the project setting
- Determination of project-related impacts on visual resources and the quality of the visual experience
- Identification of the potentially affected viewing audience

The visual character of the project setting can be objectively described in terms of "pattern elements" including form, line, color, and texture. The relationship between these elements constitutes the "pattern character" (dominance, scale, diversity, and continuity) of a landscape and describes the manner in which the pattern elements relate to each other. After the visual character of a landscape has been defined, the existing level of visual quality associated with the project setting is characterized in terms of vividness, intactness, and unity. When all three of these criteria are rated highly in a project setting, visual quality is accordingly considered to be high. However, a landscape setting determined to possess low visual quality may nonetheless be sensitive to project-related changes and benefit from, or be negatively affected by, project impacts to such qualities.

The components of visual experience are as follows: (1) the visual resources (discussed above), and (2) the viewer response, or viewing audience. With respect to viewer response, major viewer groups, or audiences, are identified. Such audiences have defining characteristics that can be identified in the degree of detail appropriate for the project in question. Viewers are first classified either as users or neighbors of a given transportation route. They are further distinguished by the nature of their exposure to a given visual resource, which is defined by an audience's physical location and proximity, the number of people affected, and (for highway project users in particular) the duration of views.

The project would have a significant impact on visual character or qualities if:

- The visual character of project features contrasted sharply with the project setting, resulting in low visual compatibility
- The project changes, through introduction or removal, the existing balance between the qualities of vividness, intactness, and unity of landscape features

The project would have a significant impact on light and glare if:

- A new source of substantial light or glare was created that would adversely affect day or nighttime views in the area.

3.15.1 Affected Environment

Aesthetic and visual resources are generally defined as the natural and built features of the landscape visible from public view that contribute to the public's appreciative enjoyment of the environment. The goal is to characterize the aesthetic condition of the project site, and assess how the condition would be altered by implementation of the project.

The evaluation of visual resources in the context of environmental analysis typically addresses the contrast between visible landscape elements. Collectively, these elements comprise the aesthetic environment, or landscape character. The landscape character is compared to the proposed project's visual qualities to determine the compatibility or contrast resulting from the Proposed Action.

Views are characterized by their distance from the viewer, foreground, middleground, or background. Foreground views are those immediately presented to the viewer, and include objects at close range that tend to dominate the view. Middleground views occupy the center of the view shed and generally include objects that are the center of attention if they are sufficiently large or visually different from adjacent visual features. Background views include distant objects and other objects that form the horizon. Objects in the background eventually fade to obscurity with increasing distance. In the context of the background, the skyline can be an important visual context because objects above this point are highlighted against the typically blue background.

A view shed is the total range of views experienced from an observer's viewpoint. A view shed is defined by landscape features that define or obstruct sightlines, or the line of sight between an observer and a viewed object. Views may be partially or entirely obstructed by topography, buildings and structures, and/or vegetation. The closer an intervening obstruction is to the observer, the more it will obstruct the view shed.

Study Area Conditions and Local Policy

Downtown Estes Park is a primarily built environment in a scenic, mountainous region of Colorado. As noted in the *Estes Valley Comprehensive Plan* Chapter 8 Neighborhood Plans: Downtown, there are important view sheds in downtown, including views from downtown to RMNP and Longs Peak, as well as views of the rock cliffs surrounding downtown (Town of Estes Park and Larimer County 1996). These rock formations help define the character and boundaries of the downtown commercial core area and also provide context and scale to the downtown area.

According to the *Estes Valley Comprehensive Plan*, the steep slopes and rock outcrops adjacent to downtown should be preserved with view corridors (Town of Estes Park and Larimer County 1996).

Visual Character of the Elkhorn and Moraine Avenue Corridors

Within the study area, views from Elkhorn and Moraine Avenues are primarily of the built environment consisting of commercial buildings (small retail buildings) and vehicles along the street or in adjacent parking lots. Many streetscape improvements (lighting, planters, signs, street trees, etc.) and ornamental plantings are located along Elkhorn Avenue.

As noted in the *Estes Valley Comprehensive Plan*, "the streetscape along Elkhorn Avenue contributes to a lively and pedestrian-friendly downtown," (Town of Estes Park and Larimer County 1996). A portion of the study area along Elkhorn Avenue also includes views of Bond Park, a large grassy area with trees and benches. Views from the top of Moraine Avenue traveling south, at the southern end of the study area before the road turns west to RMNP, open up to a more natural view due to the dominance of Prospect Mountain in the view (in the middleground). Views from the top of Moraine Avenue traveling north include views of Lumpy Ridge Mountain in the background above the commercial buildings in downtown until the street descends into the downtown core. Viewers of Elkhorn and Moraine Avenues include motorists driving in and out of downtown and adjacent parking areas, pedestrians in downtown, and patrons/staff of commercial businesses along both streets.

Figures 3.15-1 through 3.15-6 demonstrate the visual character of the Elkhorn and Moraine travel corridors.

Figure 3.15-1: Elkhorn Avenue at Riverside Drive Intersection Facing West

Source: AECOM, 2016.

Figure 3.15-2: Elkhorn Avenue Facing East from the Moraine Avenue Intersection

Source: AECOM, 2016.

Figure 3.15-3: Moraine Avenue Facing South from Elkhorn Avenue Intersection

Source: AECOM, 2016.

Figure 3.15-4: Moraine Avenue Facing North from Midblock Pedestrian Crosswalk

Source: AECOM, 2016.

Figure 3.15-5: Moraine Avenue Facing South near the Turn toward RMNP

Source: AECOM, 2016.

Figure 3.15-6: Donut Haus at Moraine and Crags Intersection

Source: AECOM, 2016.

Visual Character of the Riverside Drive Corridor

Within the study area, views from Riverside Drive feature commercial and residential development and natural and park land environments along the Big Thompson River. Natural vegetation is intermixed with landscape species. Large trees and views of the river and park settings dominate the views. Views of the Big Thompson River are provided from trail vantage points along the river and from two river crossings.

The southern portion of Riverside Drive up to the crossing over the Big Thompson River at Ivy Street offers views of Riverside/Baldwin Park and has views of natural vegetation, a parking lot, residences, and a few commercial buildings. The view opens up at the Post Office parking lot to include a more panoramic view of Lumpy Ridge and Twin Owls, a well-known rock formation on Lumpy Ridge, in the background. The view from the southern portion of Riverside Drive heading south is similar to the view when heading north, except viewers can see the tree-covered Prospect Mountain behind the buildings on the street (in the middleground), rather than Lumpy Ridge in the background. Viewers of/from the road in this section include motorists, patrons/staff of commercial businesses, visitors to the river corridor and playground, and residences along the river. There is no existing sidewalk along this section of the road; the pedestrian paths generally follow the river.

West Riverside Drive (the portion located north of the Ivy Street crossing) provides views of commercial and residential development along both sides of the street. This portion of the road provides views of the Twin Owls rock outcrop and Lumpy Ridge in the background when driving north. The rock cliffs surrounding downtown are also visible in the middleground in one location with some residences and commercial businesses between the road and the cliffs. Views from this portion of Riverside Drive traveling south are similar to views when traveling north, except viewers can see the tree-covered Prospect Mountain behind the buildings on the street (in the middleground), rather than Lumpy Ridge in the background.

Viewers of Riverside Drive from Ivy Street north to Elkhorn Avenue include motorists, residents along the street, patrons/staff of commercial businesses, users of the Riverwalk, and people walking in the downtown commercial core area. The Riverwalk follows Fall River from Moraine to the confluence of Fall River and the Big Thompson River. The plaza near the confluence contains grass areas, plantings, lighting, trees, benches, bridges, and stone covered areas and stone walls.

Figure 3.15-7 through Figure 3.15-12 demonstrate the visual character of East and West Riverside Drives.

Figure 3.15-7: Riverside Corridor Facing North, North of the Moraine/Riverside Intersection

Source: AECOM, 2016.

Figure 3.15-8: Riverside Drive at Ivy Street Facing North at the Parking near Post Office

Source: AECOM, 2016.

Figure 3.15-9: Riverside Drive at Ivy Street Intersection Traveling North

Source: AECOM, 2016.

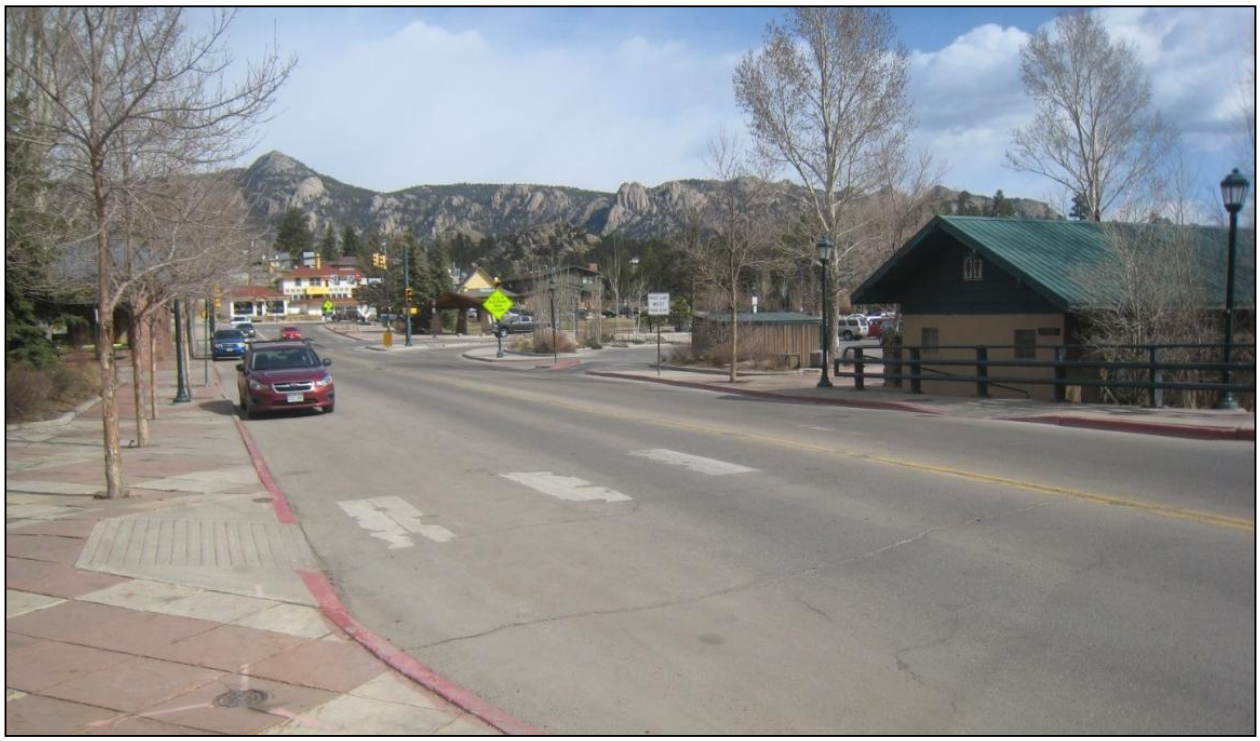
Figure 3.15-10: View of Riverside Drive Looking South from a Vantage Point just North of Ivy Street and South of Rockwell Street

Source: AECOM, 2016.

Figure 3.15-11: View of George Hix Riverside Plaza near Fall River/Big Thompson River Confluence

Source: AECOM, 2016.

Figure 3.15-12: View of the Riverwalk Crossing near Children's Park



Source: AECOM, 2016.

Visual Character of the Big Thompson River Corridor East of the Riverside Drive Bridge

Downstream of the Riverside Drive Bridge, the Big Thompson River flows east between the hillside and commercial buildings. The Riverwalk (described above) continues downstream along the Big Thompson River from the Riverside Drive Bridge/confluence with the Fall River to the Estes Park Visitor Center and consists of a wide sidewalk between the river and the commercial buildings on the north side of the river. Views of the Big Thompson River are generally confined to the foreground due to the commercial buildings and the hillside blocking middleground and background views for Riverwalk users. Closer to the US 36 Bridge, the view east opens up to the broader Estes Valley and development within the valley. Near the Riverside Drive Bridge, the view west opens up to the hillside in the background and rock cliffs on the south side of the river.

Along the Riverwalk between the Riverside Drive Bridge and the US 36 Bridge, views include the river, natural vegetation (grass, trees, shrubs) along the south bank and up the hillside, and commercial buildings on the north side of the river; some of these buildings are accessible from the Riverwalk. The riverbed itself is rocky along both the north and south banks and appears very natural with no man made development within the riverbed or along the south bank. Views from the commercial buildings include the river, the rocky south bank, and partial slope of the hillside.

Viewers of the Big Thompson River between the Riverside Drive Bridge and US 36 Bridge include patrons/staff of commercial businesses and users of the Riverwalk.

Figure 3.15-13 through Figure 3.15-16 demonstrate the visual character of the Big Thompson River been the Riverside Drive Bridge and the US 36 Bridge.

Figure 3.15-13: View of the Big Thompson River (facing west) near Riverside Drive Bridge

Source: AECOM, 2016.

Figure 3.15-14: View of the Big Thompson River (facing east) Downstream of Riverside Drive Bridge

Source: AECOM, 2016.

Figure 3.15-15 Rock Outcrop Proposed to be Cut (Just East of East of Riverside Drive)

Source: AECOM, 2016.

Figure 3.15-16: Rock Outcrop Proposed to be Cut (Further Downstream from Above)

Source: AECOM, 2016.

3.15.2 Environmental Consequences

No Action

Under the No Action Alternative, there would be no changes to the visual quality of the project setting that differ from existing conditions. The No Action Alternative would not affect the existing visual quality of the study area.

Proposed Action

The following analyses of the effects of the one-way couplet are divided into three broad corridor discussions linked to the characteristics of the proposed improvements:

- Elkhorn/Moraine Avenue Corridor
- Riverside Drive Corridor
- Big Thompson River Corridor

These discussions address construction requirements and the complete set of improvements described in *Chapter 2: Alternatives Considered*.

Elkhorn/Moraine Avenue Corridor

The broad views and existing visual character along Elkhorn Avenue and Moraine Avenue would not change with new pavement, sidewalks, signs, the addition of a bike sharrow on Elkhorn and a bike lane on Moraine and reconfigured parking associated with conversion of the two-way roadway network into a one-way system. However, the one-way couplet would replace motorist vantage points looking north along Moraine Avenue and east along Elkhorn Avenue within the study area with vantage points that have views looking north through the Riverside Drive corridor. This change in vantage points shifts visual impressions of Estes Park primarily for visitors, but this shift alone would not adversely impact available views or the visual character of the community.

Grading and removal of the Donut Haus and vegetation near the Moraine Avenue/Riverside Drive intersection would modify visual conditions in this location. Visual characteristics will differ depending on the signalized versus roundabout intersection options. The signalized intersection would require a traffic signal, which would introduce a new visual element. The roundabout would not require a new signal. Both options would add wayfinding signage. Landscape features would be possible under both intersection configurations, including gateway signage/special landscaping. This change would not be considered a substantial modification of the overall visual character of this portion of the study area because no views would be blocked, no vantage points would be eliminated and the outcome would help clarify the transition into and out of downtown Estes Park. Therefore, the Proposed Action would not contrast within the project setting, but would assist in maintaining unity in the landscape features of the downtown area.

Riverside Drive Corridor

Proposed construction within the Riverside Drive corridor would impact the visual character of this portion of the study area through widening of the road, broadening of the bridges, addition of new sidewalk and bike lane, widening of the Big Thompson River channel, replacement of park features and converting some parcels of non-park land to park land areas.

Park features such as trails, benches, paths, trees and vegetation would be removed and replaced with new features, park facilities, pathways, and vegetation. In addition, new connections and facilities would be added and linked to new park land areas creating new visual resources and vantages points.

The loss of mature trees and the installation of new channel features (rip rap and retaining walls) would create the most long-lasting visual effects. Full tree replacement, in terms of canopy coverage, would not be anticipated for more than 20 years. The loss of canopy coverage would provide a more open character to the park and river corridor, improving middleground and background views through the area.

Channel improvements and grading would alter the natural character of the river environment, increasing the park land character of the corridor. Landscape installation and natural restoration will occur where rip rap and walls will not be required. After installation of proposed park land features and landscaping, the park land visual character will be restored, but the appearance will be different from current conditions.

North of Rockwell Street along the Big Thompson River, developed parcels will be cleared and channel excavation and widening will occur. The site will be cleared and structural slopes and walls will be installed. The larger channel will provide for natural restoration, but this will occur over a long period of time even with installation of plant species that will grow quickly and encourage additional plant growth. Removal of buildings would open up views of Lumpy Ridge in the background and the cliffs in downtown in the middleground depending on vegetation replacement locations and final design of new park facilities.

The visual character of the East Riverside Drive corridor further north would change with the new larger bridge over the Big Thompson River/Fall River confluence area. The existing park restroom would be removed and relocated. A portion of the parking area and landscaped area near Children's Park would be converted to roadway lanes. New islands would serve pedestrians and provide opportunities for landscaping.

The one-way couplet design includes new areas for additional urban design features that would complement existing features and create gateways. This would assist with blending the new visual character of Riverside Drive with the adjacent park land and urban design features along the Elkhorn and Moraine Avenue corridors.

In summary, the visual character of Riverside Drive would be temporarily and permanently altered for all viewer groups and from many vantage points. The visual quality as a semi-natural, semi-developed roadway would continue, but would shift toward a more urban character in alignment with other downtown streets.

Proposed road improvements would not include installation of any lighting fixtures or include design components that would create additional daytime glare. Though roadway lighting would be upgraded to conform to existing CDOT standards, using the Town of Estes Park standard light pedestal and fixture, ambient nighttime lighting levels are not anticipated to substantially increase as a result of the lighting upgrade. There is the potential for glare at night due to headlights along Riverside Drive. It is expected that this would be a minor impact, as there are already headlights along this segment (currently in both directions). The conversion to a one-

way loop would add additional traffic, but all of the headlights would be seen in one direction, compared to the existing bi-directional traffic.

Big Thompson River Corridor

Channel widening of the Big Thompson River between the Riverside Drive Bridge and US 36 Bridge would result in temporary visual impacts along the river corridor. Vegetation and soil removal, along with the presence of heavy machinery, would temporarily alter the visual character of the river bank and the hillside from a natural vegetation setting to a bare-earth setting. Views for Riverwalk users and patrons/staff within the commercial buildings would be affected during construction. Following construction, the impacts to the visual character of the Big Thompson River would diminish as revegetation plantings began to mature and the river bank and mountainside returned to a more natural state and areas of bare earth were reduced. Though the visual character of the Big Thompson River may be temporarily altered during channel widening efforts, the long-term impact would be less than significant as the river corridor would return to a natural setting with a slightly altered, but still natural appearing hillside, thus returning to the visual character that exists under current conditions.

Following construction, the impacts to the visual character of the Big Thompson River would diminish as revegetation plantings began to mature and the river bank and mountain-side returned to a more natural state. Additionally, the newly cut rock wall will look different than the surrounding rock face until it becomes weathered similar to the surrounding stone surfaces. This is expected to be a temporary visual impact.

Construction Impacts

Construction activities would be highly visible. Construction would result in the removal of existing buildings, park features and vegetation within the construction disturbance area. Construction equipment, materials and vehicles would be visible in staging areas within and potentially outside of the Riverside Drive corridor. Visual and aesthetic conditions would be degraded during the construction period but these impacts would only be temporary would likely only impact the close range viewsheds.

3.15.3 Mitigation Measures

Lighting

Mitigation measures are proposed to reduce potential impacts from nighttime lighting, including:

- Incorporate lighting fixtures that minimize nighttime glare and sky glow. Where new light fixtures are added or old fixtures are replaced, use lamps and/or light shields that direct glare away from the street, buildings, or the sky to minimize glare and sky glow, in accordance with local ordinances. These measures will not preclude any aesthetic ambient lighting features that may be included in the project design.
- Minimize light glare during any nighttime construction activities by taking measures to direct the light inward toward the construction site and minimize glare for motorists, residents, pedestrians, and visitors in the vicinity of the construction sites.
- For the area surrounding the Ivy Street bridge (specifically the Misty Mountain Lodge), landscaping will be used to shield the nighttime headlight glare at this location.

Landscaping may also be used in other areas as needed. Further evaluation will be conducted during final design.

Mitigation to Impacts on Elkhorn/Moraine Corridor

Both the roundabout and signalized intersection options would add wayfinding signage. Landscape features would be possible under both intersection configurations, including gateway signage/special landscaping.

Mitigation to Impacts on Riverside Drive Corridor

Park features such as trails, benches, paths, trees and vegetation would be removed and replaced with new features, park facilities, pathways and vegetation. In addition, new connections and facilities would be added and linked to new park land areas creating new visual resources and vantages points.

The loss of mature trees and the installation of new channel features (rip rap and retaining walls) would create the most long-lasting visual effects. Trees would be re-planted as mitigation for the loss of existing trees. Therefore the visual impact is not intended to be permanent.

The one-way couplet design includes new areas for additional urban design features that would complement existing features and create gateways. This would assist with blending the new visual character of Riverside Drive with the adjacent park land and urban design features along the Elkhorn and Moraine Avenue corridors.

Mitigation to Impacts on Big Thompson River Corridor

The slopes would be seeded and mulched using native seed mixes and landscaping logs. Additionally, if blasting occurs, it will be done so to look like a naturally occurring rock face. No visible bore holes or half casts will remain upon completion.

Mitigation of Construction Impacts

Construction equipment, materials and vehicles would be visible in staging areas within and potentially outside of the Riverside corridor. Construction impacts would be temporary, and to the greatest extent possible, CFLHD and its contractors will screen construction equipment and construction materials. Construction phasing will be completed during final design, and final recommendations will be made in consultation with Town officials.

3.16 Parks, Recreation, Open Space, and Section 4(f) and 6(f)

This section addresses parks, recreation, open space and Section 4(f) and 6(f) resources.

3.16.1 Section 4(f)

Section 4(f) of the Department of Transportation Act stipulates that the FHWA cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or historic sites unless a determination is made that:

- There is no feasible and prudent avoidance alternative to the use of land from the property
- The action includes all possible planning to minimize harm to the property resulting from such use
- FHWA determines that the use of the property, including any measure(s) to minimize harm (such as any avoidance, minimization, mitigation, or enhancement measures) committed to by the applicant, will have a *de minimis* impact on the property.

The impacts of a transportation project on a park, recreation area, or wildlife and waterfowl refuge that qualifies for Section 4(f) protection may be determined to be *de minimis* if:

- The transportation use of the Section 4(f) property, together with any impact avoidance, minimization, and mitigation or enhancement measures incorporated into the project, does not adversely affect the activities, features, or attributes that qualify the resource for protection under Section 4(f);
- The public has been afforded an opportunity to review and comment on the effects of the project on the protected activities, features, or attributes of the Section 4(f) property; and
- The official(s) with jurisdiction over the property, after being informed of the public comments and FHWA's intent to make the *de minimis* impact finding, concur in writing that the project will not adversely affect the activities, features, or attributes that qualify the property for protection under Section 4(f).

(See 23 CFR 774.5(b)(2), 23 CFR 774.17).

The concurrence of the official(s) with jurisdiction that the protected activities, features, or attributes of the resource are not adversely affected must be in writing (23 CFR 774.5(b)(2)(ii)). If a *de minimis* finding cannot be made, a more involved “Section 4(f) Statement” is prepared.

3.16.2 Section 6(f)

Section 6(f) of the Land and Water Conservation Act (LWCF) of 1965 prohibits the conversion of property acquired or developed with LWCF grants to a non-recreational purpose without the approval of the DOI’s National Park Service (NPS). Section 6(f) properties are those purchased or improved with LWCF grants. State and local governments often obtain grants through the LWCF to develop or make improvements to parks and outdoor recreation areas. The Section 6(f) evaluation for the Estes Park Loop project began during the data collection phase when it was determined that Section 6(f) applied to parks in the study area.

Section 6(f) is evaluated under NEPA to comply with several legal mandates within Section 6(f)(3) of the Land and Water Conservation Act. In Colorado, the Colorado State Trails Program implemented by the Department of Natural Resources by Colorado Division of Parks and Wildlife (CPW) administers the LWCF Grant program. In this capacity, the Trails Program staff members maintain a comprehensive database of recipients, manage records, and perform inspections of past investments and handle new requests for funds.

If it is determined that the Proposed Action could potentially impact a Section 6(f) property, and that impact cannot be avoided, the official with jurisdiction of the Section 6(f) property should be consulted and the approximate amount of land to be converted, either as right-of-way or as a permanent easement, should be estimated. If conversion is required, FHWA, in cooperation with the official with jurisdiction (Town of Estes Park), must identify replacement land that is of reasonably equivalent size, usefulness and location, and of at least equal fair market value. Consultation and coordination with Colorado State Trails Program staff members for this project began in September of 2014. *Appendix C: Agency Coordination* provides the consultation and coordination process documents for this project, including minutes of meetings held with the Colorado State Trails Program.

3.16.3 Affected Environment

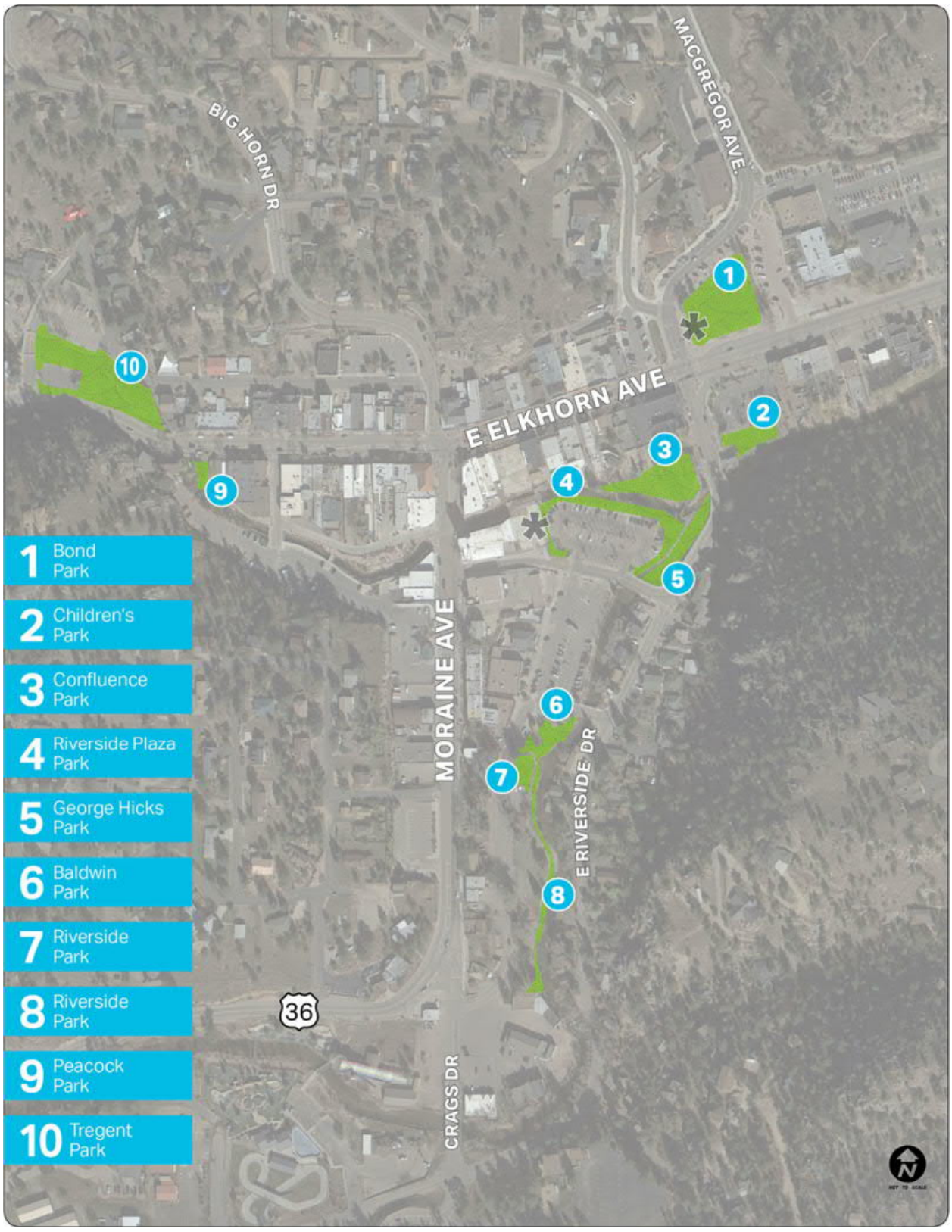
Existing parks and recreation resources in the study area include Bond Park, Children's Park, Confluence Park (recently renamed George Hix Riverside Plaza), and Riverside/Baldwin Park. Existing parks and recreation resources are shown in Table 3.16-1 and on Figure 3.16-1. Peacock Park and Tregent Park are located west of the study area, as shown on the figure. All of the parks are owned and managed by the Town. All of the park resources fall under Section 4(f) purview. Section 6(f) properties, or those purchased by LWCF funds, are indicated in the table.

Table 3.16-1: Existing Parks and Recreation Resources in the Study Area

Map ID	Resource Name	Size	Location/Amenities	Section 6(f) Property
1	Bond Park	46,000 square feet (sf)	Located within the northeast quadrant of the Elkhorn/Riverside intersection, Bond Park provides 46,000 sf of park land and the open space serves as the Town's centerpiece. Picnic tables and benches, a fire pit and a drinking fountain are provided. Bond Park serves as a main area for Town festivals and concerts.	No
2	Children's Park	Full parcel (with parking area): 33,688 sf Park area (alone): 9,800 sf	Located at the southeast corner of Riverside and Elkhorn. Includes a 2,500 square foot playground, a restroom with drinking fountain, river frontage, picnic tables, and benches. An adjacent parking lot serves the park and the commercial building that houses the Casa Grande Mexican Restaurant. The commercial building is on an adjacent private parcel and supports multiple businesses.	Yes
3, 4, 5	Confluence Park (recently renamed George Hix Riverside Plaza	*TBD*	A focal point of the Riverwalk behind the businesses on East Elkhorn Avenue, the park features an amphitheater, benches, drinking fountain, water features, adjacent parking and river frontage. The Riverwalk is a one-quarter mile path that winds along Fall River from Moraine to Riverside and then follows the Big Thompson River. The walkway is highlighted by trees, flower plantings, turf areas, business access, benches and Barlow Plaza.	No
6, 7, 8	Riverside / Baldwin Park	61,940 sf	Located off West Riverside Drive. Open space includes river frontage, picnic tables and benches, trees, flowers and turf areas. Other amenities include the Riverwalk, fishing bridge and parking.	Yes (Northern Portion)

Source: AECOM, 2016.

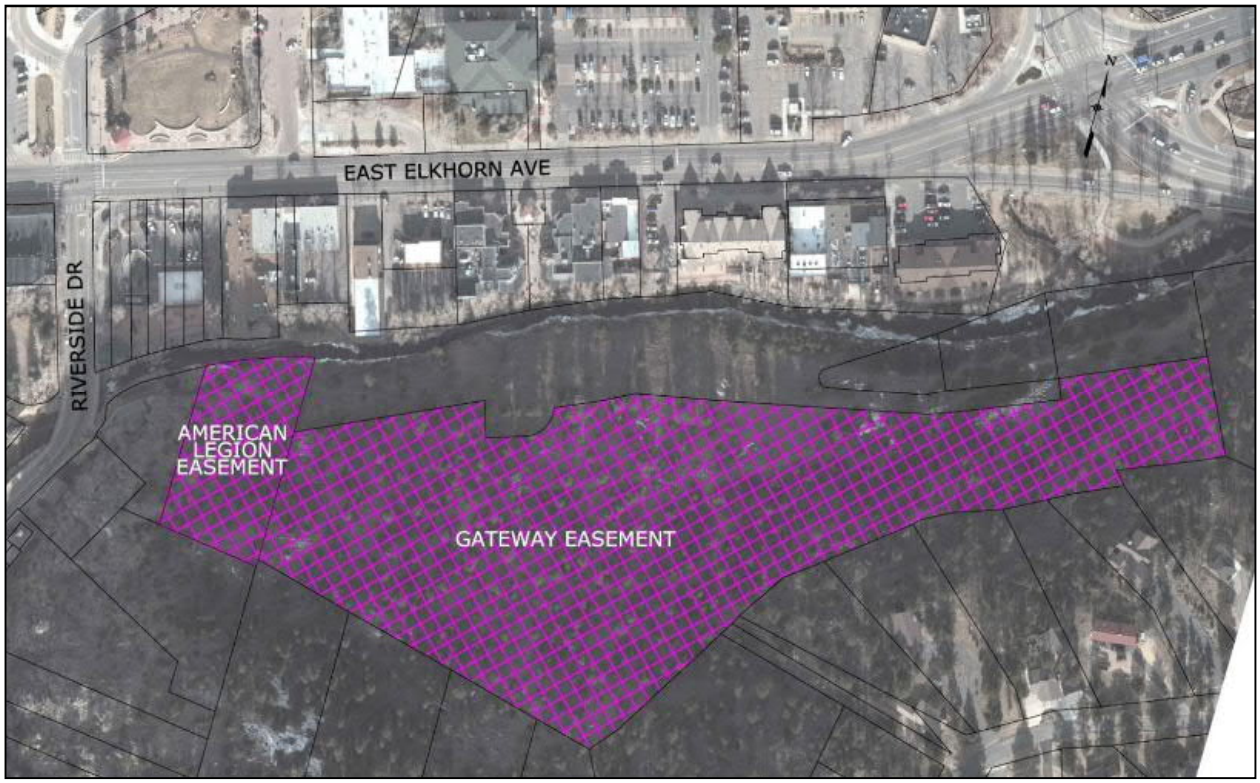
Figure 3.16-1: Existing Park Resources



Source: AECOM, 2016.

In addition to the park and recreation resources described above, two conservation easements are located in the study area along the Big Thompson River, as illustrated on Figure 3.16-2. One is the American Legion Easement, and is 0.84 acres in size. The second is the Gateway Easement, and is 7.41 acres in size. Both easements are managed by the Estes Valley Land Trust, a non-profit corporation, and the land is owned by the Town of Estes Park. Both allow public access, but due to their location and topographical constraints (steep slope and forested land), are difficult for the public to access and use. The language for both deeds states: "public access shall be limited to daytime picnicking in designated areas, pedestrian, horseback and bicycles." Horses and bicycles shall be limited to trails or paths maintained by grantor in the protected area."

Figure 3.16-2: Existing Conservation Easements



Source: AECOM, 2016.

3.16.4 Section 4(f) Resources in the Study Area

This section describes existing historic, parks, recreation and open space properties impacted by the Proposed Action. There are no designated wildlife or waterfowl refuges within the study area.

Historic Resources

As discussed in *Section 3.11: Cultural Resources*, one historic NRHP-eligible property, a portion of SH 262 (Moraine Avenue), will be impacted by the Proposed Action. The documented segment begins at the intersection of US 34 and US 36 at the east end of Elkhorn Avenue, continues west along Elkhorn Avenue to its intersection with Moraine Avenue and south along

Moraine Avenue, turns to the west-southwest near Moraine Park Road, and ends approximately 400 feet west of 351 Moraine Avenue. SH 262 was originally a local road used by residents of Estes Park. After the RMNP opened in 1915, it was used as an entrance road into the park. The road was designated SH 262 in 1939 and, by 1946 it had been extended into the RMNP, ending at the intersection of Fall River Road (US 34) and Deer Ridge Junction. This route was used until 1965, when the Beaver Meadows park entrance opened. At this time, the road was renamed SH 66 and, in 1977, it became part of US 36.

As part of this project, SH 262 will be overlain over the original road's alignment. A new intersection configuration will be built, requiring the removal of a non-historic building (commercial property, the Donut Haus) at the current intersection. Both a signalized intersection and roundabout intersection are currently under consideration at this location. Under either configuration (signalized or roundabout), the intent is to make geometric and grade changes to improve operational efficiency and additional site distance, thereby improving safety conditions.

The historic short rock retaining wall and rock-lined curb, along the west side of the curve in front of sites 5LR13751 and 5LR13753 (the former Rocky Mountain National Park headquarters), will remain in place. A new short retaining wall will be added, if necessary, in front of these older wall features in conjunction with the lower road grade. The retaining wall along the east side of Moraine Avenue that stretches from 250 Moraine to 281 Moraine Avenue will also not be directly impacted and will be located more than 100 feet north of the proposed new construction. In short, the proposed improvements to Moraine Avenue will not adversely affect the historic integrity of SH 262 or any of its associated features.

Section 4(f) Historic Determination

The project has been determined to have "no adverse effect" on SH 262 under Section 106. SHPO concurred in writing with the Section 106 "no adverse effect" determination for this property as stated in a letter to CFLHD dated October 9th, 2015. SH 262 and its associated facilities (retaining walls, curb) are located in the highway right-of-way. If a historic resource is within right-of-way, the Section 4(f) Policy Paper (July 2012, page 36) states the following: "when a future transportation project is advanced resulting in a Section 106 determination of no historic properties affected or no adverse effect to such resources, there would be no Section 4(f) use." Thus, Section 4(f) would not apply to SH 262.

Parks, Recreation and Open Space

Existing park resources are shown in Table 3.16-1 and Figure 3.16-1. All of these resources fall under Section 4(f) purview.

3.16.5 Section 6(f) Resources in the Study Area

Children's Park

The consultation and coordination process with CPW identified a Section 6(f) property within the Study Area called "Big Thompson Riverfront 1 (Project File, #08-00235)." This resource is locally referred to as Children's Park. The LWCF grant that went to this resource was for $2,000 in 1971. This amount represents half of what was spent on park improvements at that time. The improvements associated with LWCF expenditures included development of a fisherman access and picnic area with landscaping, fence, fountain, steps, railings, underground lighting

installation, picnic tables, benches, trash receptacles, removal of asphalt, and engineering and site planning.

Children's Park lies between the Elkhorn/Riverside intersection and the Big Thompson River on the east end of the Town's Riverwalk. Children's Park includes a 2,500-square-foot playground, a restroom with drinking fountain, river frontage, picnic tables, and benches. An adjacent parking lot serves the park and the commercial building that houses the Casa Grande Mexican Restaurant. The commercial building is on an adjacent private parcel and supports multiple businesses. The Section 6(f) parcel encompasses all of this land and is 33,688 sf (0.77 acres) in size, as shown on Figure 3.16-3 and Figure 3.16-4.

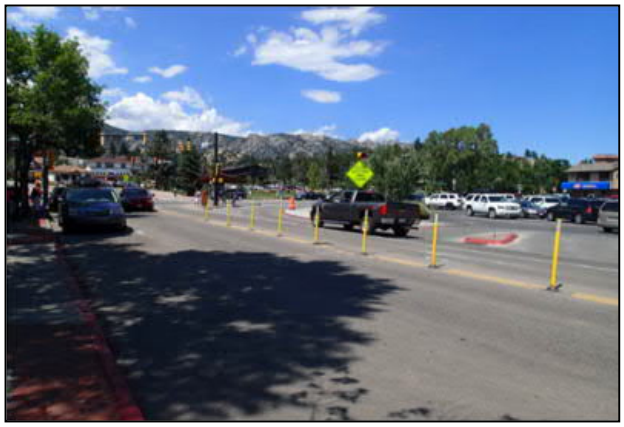
Figure 3.16-3: Children's Park, Section 6(f) Property Boundaries

Source: Colorado State Trails Program, Colorado Parks and Wildlife

Figure 3.16-4: Children's Park Site Photos

View of playground toward Riverside

Transition between playground and parking lot



View of Riverside Drive toward Elkhorn Avenue and the parking lot

Riverside/Baldwin Park

The consultation and coordination process with CPW identified two Section 6(f) properties located within a portion of Riverside/Baldwin Park: Project File #08-00802 (802) and Project File #08-00986 (986). The two Section 6(f) resource areas overlap as shown on Figure 3.16-5. Most of Resource 802 is included within the boundary of Resource 986, with the exception of an area extending slightly to the east and north. The portion of Baldwin Park that is a defined Section 6(f) resource (a combination of properties 802 and 986) is 31,466 sf (0.72 acres) in size.

Figure 3.16-5: Riverside/Baldwin Park, Section 6(f) Property Boundaries (802 and 986)

Source: Colorado State Trails Program, Colorado Parks and Wildlife

The details associated with the two LWCF grants involving Baldwin Park are summarized as follows:

- Resource 802 was formalized by a Land and Water Conservation Contract on March 4, 1981. The $16,500 investment was half of the total spent on park improvements at that time. The improvements made with LWCF expenditures included adding railroad ties, renovation of existing retaining wall, adding benches, adding a “sand and drain” inlet box, landscape improvements including trees, shrubs, and plant materials, and drinking fountain improvements.
- Resource 986 was formalized by Land and Water Conservation Contract Amendment on April 6, 1990. The $60,000 investment was half of the total spent on park improvements at that time. The improvements made with LWCF expenditures included walkways, landscaping, river bank stabilization and clearing the land.

An on-site inspection of Resource 802 and 986 was performed by CPW on June 30, 2008. The inspection findings reflect an expectation for a fishing facility that was not found during the inspection. The agreements do not reflect inclusion of fishing facilities in this location. The inspection finding may be a reference to the fisherman facilities mentioned in the LWCF agreement involving Children's Park. Riverside/Baldwin Park features are shown on Figure 3.16-6.

Figure 3.16-6: Riverside/Baldwin Park Site Photos

View of park toward Ivy Street

View of Park toward Riverside

View of park features along the river

View of park features along the river

3.16.6 Environmental Consequences

No Action Alternative

The No Action Alternative would have no impacts on public parks. No Section 4(f) or 6(f) conversion would occur.

Proposed Action

Section 4(f) Impacts

The following are anticipated impacts to parks due to the Proposed Action:

Children's Park

The Proposed Action requires direct use of 289 square feet of Children's Park converting that land from park to roadway facility, as shown on Figure 3.16-7. Additional impact includes relocation of the existing restroom in future phases.

The proposed horizontal and vertical curve of the new East Riverside alignment over the confluence of the Big Thompson River and Fall River cause the impact to the existing park area. The proposed impacts are necessary to accommodate the increase in width along Riverside Drive and to meet engineering standards for curves (maximum curve angle). Park land losses are unavoidable under the Proposed Action design configuration.

Other impacts to Children's Park will include the presence of high traffic volumes on the one-way roadway, especially in the afternoon, where existing traffic volumes are currently lower. The vehicle mix will include automobiles, trucks of various sizes, recreational vehicles of various sizes and motorcycles. Travel speed limits will remain at 25 mph; however, during congested periods, travel speeds will be lower. This park is located in a highly urban area close to Riverside Drive, Elkhorn Avenue, and an existing parking area. It is intended to be easily accessible to the public, and thus is not in a quiet/natural setting.

Overall, impacts to Children's Park do not adversely affect the activities, features, or attributes that qualify the resource for protection under Section 4(f).

Riverside/Baldwin Park

The Proposed Action requires direct use of 14,463 sf of Riverside/Baldwin Park, converting land from park use to roadway facility. The portion of Baldwin Park near Ivy Street is where the majority of park land losses would occur. The proposed horizontal curve from the West Riverside alignment to the proposed alignment of the new bridge over the Big Thompson River and the resulting alignment on the other side of the river (East Riverside) cause this impact. The proposed curve radius is necessary to meeting minimum design standards for a 25 mile per hour roadway. The alignment of the curve is placed where it is proposed to strike a balance between losses of valuable parking spaces and losses of park land. Avoiding impacts to this park would require the alignment to be shifted into one of the largest parking areas downtown and would result in a significant loss of parking that could not be mitigated.

Other impacts on Baldwin Park will include the presence of high traffic volumes on the one-way roadway, especially in the afternoon, where existing traffic volumes are currently much lower. The vehicle mix will include automobiles, trucks of various sizes, recreational vehicles of various sizes and motorcycles. Travel speed limits will remain at 25 mph; however, during congested periods, travel speeds will be lower. Motor vehicle noise from high traffic volumes and 25 mph speeds will increase the ambient noise level within the park, as described in *Section 3.7: Noise*. Motor vehicle travel, at maximum speeds and lower speeds during congested conditions, will introduce more air pollutants and resulting odors from motor vehicles than are present under existing or No Action Alternative conditions.

Overall, the impacts to Riverside/Baldwin Park do not adversely affect the activities, features, or attributes that qualify the resource for protection under Section 4(f).

Other Impacts to Parks

Bond Park

The project involves milling and repaving Elkhorn Avenue within the existing right-of-way adjacent to Bond Park, but does not require use of land within the boundaries of Bond Park. This milling and repaving activity will create short-term access issues and create minor air quality and noise nuisances at this location during construction. These effects will be minimized by traffic control that maintains travel along Elkhorn Avenue during construction. The parking lots adjacent to Bond Park will not be used as construction staging areas.

Confluence Park North and South (George Hix Riverside Plaza)

The project would not impact George Hix Riverside Plaza. The design does not require right-of-way acquisition from these parks, but the eastern side of what was called Confluence Park South and the eastern edge of what was called Confluence Park North would be subject to higher traffic levels and resulting noise and air quality effects from the Proposed Action. These effects would not be considered substantial or change the basic activities, features, or attributes that qualify these park resources for protection under Section 4(f).

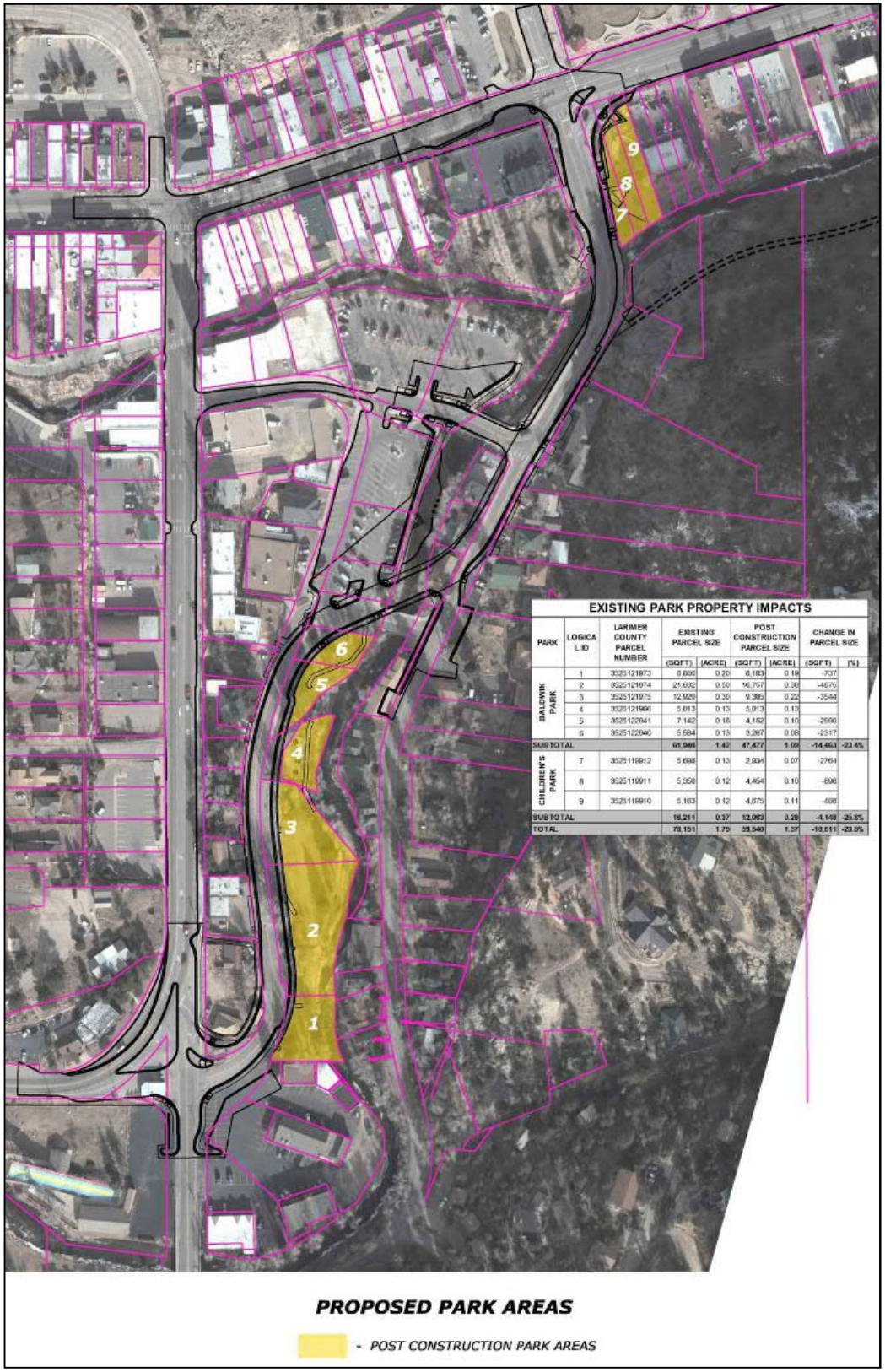
Conservation Easements

The Proposed Action would require 0.65 acre of temporary infringement to the Gateway Easement and 0.44 acre of temporary infringement to the American Legion Easement. These infringements would be necessary for construction of channel widening along the Big Thompson River. The widening will not require acquisition of right-of-way from either easement. Initial discussion with the Estes Valley Land Trust has shown a general consensus for the downstream work and need for infringement. During final design, details, plans and reports will be provided to the Land Trust for review and approval of the temporary infringements on these parcels. Per discussion with the Estes Valley Land Trust, at the time that the downstream widening is constructed, a gravel trail will need to be built within the easement to allow continued public access on the easement property. This would ensure compliance with the intent and purpose of the easement. Correspondence with the Estes Valley Land Trust is included in *Appendix C: Agency Coordination*.

Construction Impacts

Construction impacts would occur to areas that are planned for acquisition and conversion to future park land. In addition, areas of impact that are currently park would be closed during construction for construction purposes. Construction would cause temporary air and noise disturbance which would impact existing park areas.

Figure 3.16-7: Impacts



Source: AECOM, 2016.

Section 6(f) Impacts

The impacts to Section 6(f) lands differ from the impacts to both Children's and Riverside/Baldwin parks described above. This is due to the difference in land area that constitutes Section 6(f) property.

Children's Park

The Proposed Action requires conversion of 4,148 sf of Section 6(f) resource land at or near Children's Park, as shown on Figure 3.16-7. The primary effects to Children's Park are as follows:

- The grade change for the new Riverside bridge displaces the existing restroom.
- The roadway slope displaces hardscape and landscape within the playground. No playground equipment would be displaced or made unusable.
- The roadway is anticipated to require removal of one parking space.
- The turn lane from eastbound Riverside to eastbound Elkhorn requires acquisition of land from the original perimeter of the Section 6(f) resource area boundary lot (northwest corner of parcel) for roadway, sidewalks, pedestrian facilities and landscaping.

The roadway changes access to the parking lot. The access from Riverside would close. Access via Elkhorn Avenue would be reconfigured to allow entry and exiting via Elkhorn Avenue. Parking lot restriping would be required. The impacts are considered unavoidable because they are necessary to:

- Properly convey traffic over the Big Thompson River Bridge on a new bridge that meets traffic capacity requirements and vertical elevation requirements for the recently redefined floodplain in the Big Thompson River/Fall River confluence area
- Adequately direct anticipated traffic to Elkhorn Avenue with the horizontal space needed to allow turning movements in both directions
- Formally meet applicable engineering standards for overtopping (Refer to *Chapter 2: Alternatives Considered*)

Alternatives considered, but eliminated from further analysis in the EA during the screening process, would have resulted in greater impacts to Children's Park. These alternatives included three-lane and four-lane options for East and West Riverside Drives, which would have necessitated more substantial encroachment into area parks.

Riverside/Baldwin Park

The Section 6(f) impacts to Riverside/Baldwin Park include portions of parcels 3-6 as shown on Figure 3.16-8. Impact to those parcels constitutes 8,851 square feet of the park. Alternatives considered, but eliminated from further analysis in the EA during the screening process, would have resulted in greater impacts to Riverside/Baldwin Park.

Figure 3.16-8: Riverside/Baldwin Park Impact Area (Parcels 3-6)

Source: AECOM, 2016.

3.16.7 Mitigation

A wide range of measures and environmental commitments have been defined to avoid, minimize, and mitigate potential effects on parks in the project vicinity. To mitigate for the converted park land, restoration improvements at the existing parks, as well as new park land along the Big Thompson River, are proposed. The approach has been developed in cooperation with Town of Estes Park staff.

Proposed conversion of land to park along Riverside Drive would constitute acreage greater than the park lands being impacted by the project. The acreage proposed for new park land under Phase 1 is 41,390 sf/0.95 acre, which represents 22,779 sf/0.52 acre of additional park area). Proposed conversion of lands to park is shown on Figure 3.16-9 and includes the following (from south to north along Riverside Drive):

- Baldwin Park (Parcel 11): The proposed shift in the Riverside Drive alignment would create a triangular shaped parcel of space adjacent to Baldwin Park. This area is recommended to be transferred to park (to become part of Baldwin Park). Parcel 11 is 727 sf.
- Upstream River Corridor (Parcels 17-21): The relocation of commercial and residential properties along Riverside Drive (east of the River) will create an opportunity for park land conversion, enhanced river access and floodplain mitigation area. With the wider floodplain boundaries assumed under recent flood flow data, the existing buildings are located within the floodplain. Conversion to park/open space area helps restore natural conditions. The intent of the planned design is to improve park land interconnections. A sidewalk would be added along the west edge of the river (along the Post Office lot and across from parcels 20 and 21) to provide connectivity and access to the river. The existing plaza area (with seating) is planned for relocation within Riverside/Baldwin Park to maintain public access and seating areas. Parcels 17-21 total 12,929 sf.
- Riverside Drive (Parcels 12-13): Parcels 12 and 13 are private properties that need to be acquired to reconstruct Riverside Drive. It is recommended that these two parcels be transferred to the Town for park land. Conversion to park would provide enhanced access to the river, benches and landscaping for public use, as well as the opportunity to extend a future trail (shown in dashed line on the attachment) parallel to the river. A new restroom to mitigate the loss of the bathroom in Children's Park is planned on these parcels. Parcels 12-13 total 27,734 sf.

Proposed urban design features are shown on Figure 3.16-10. The intent of the planned design is to improve park land interconnections along the Big Thompson River with new pedestrian facilities. Improved at grade crossings would be constructed with pedestrian activated signals. The timing of the pedestrian signal near Children's Park would be linked to the Elkhorn/Riverside intersection traffic signal to streamline pedestrian, bicycle, and motor vehicle operations in this portion of the study area.

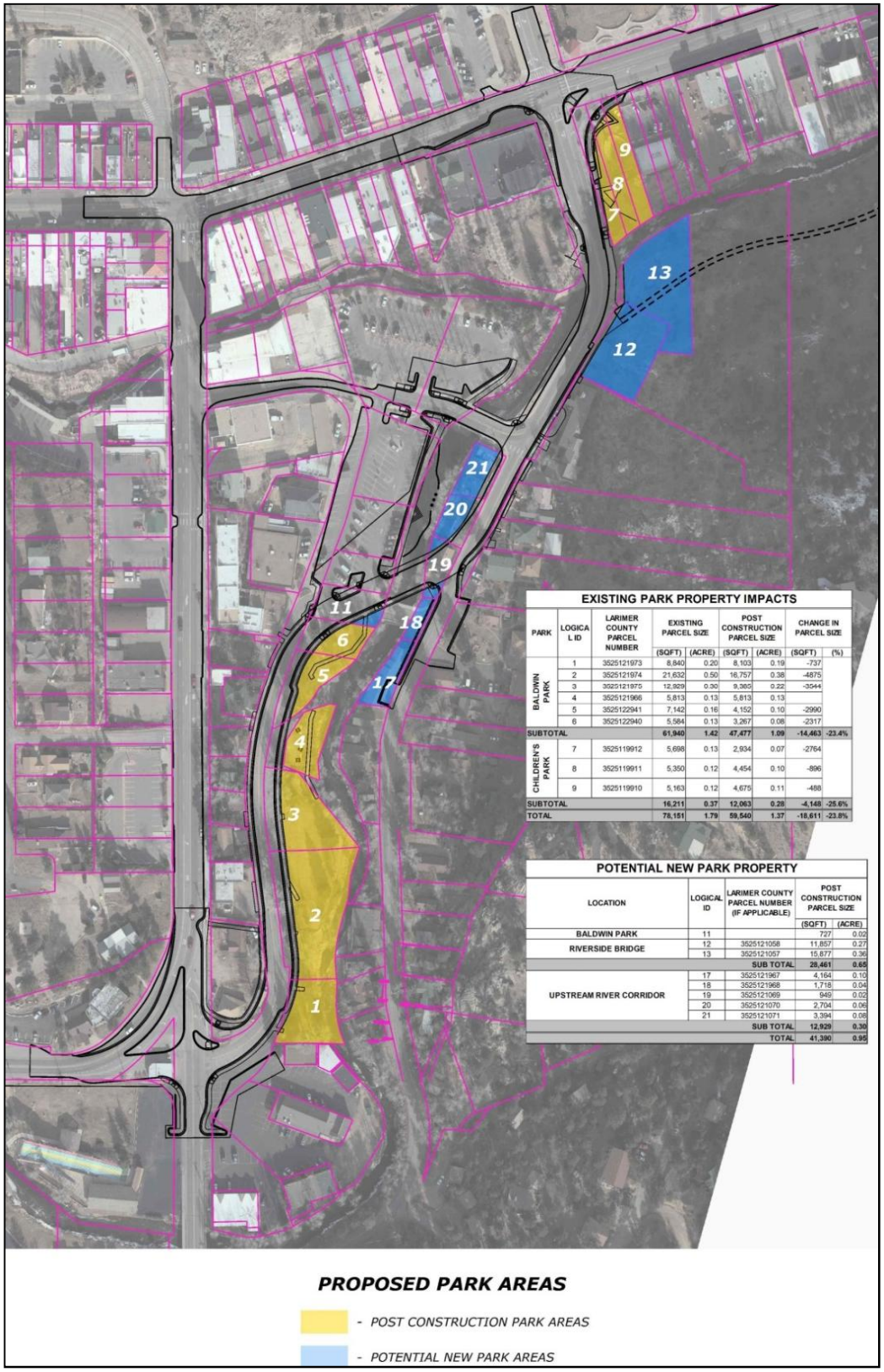
Displaced amenities and hard surface features would be replaced in a manner that reestablishes existing conditions to the extent practicable. Tree removal and other vegetation displaced as a result of road improvements, channel widening, and construction disruption would be evaluated for replacement. Park planning details and related public involvement

processes would be resolved after completion of the NEPA process during the project's final design process.

Section 6(f) Mitigation

Per Section 6(f) requirements, replacement property needs to be identified for all properties that have used LWCF grant funds. Replacement parcels have been identified, and reviewed with Town staff and the Colorado State Trails Program. The replacement property includes parcels 11, 13, 17 and 18, which total approximately 11,000 square feet of replacement land combined (See Figure 3-16.9). This represents greater than a 1:1 replacement area for Section 6(f). Parcels 11, 13, 17 and 18 will become park parcels maintained in perpetuity by the Town of Estes Park. All replacement parcels will provide the public with river access.

Figure 3.16-9: Replacement Park Lands



EXISTING PARK PROPERTY IMPACTS

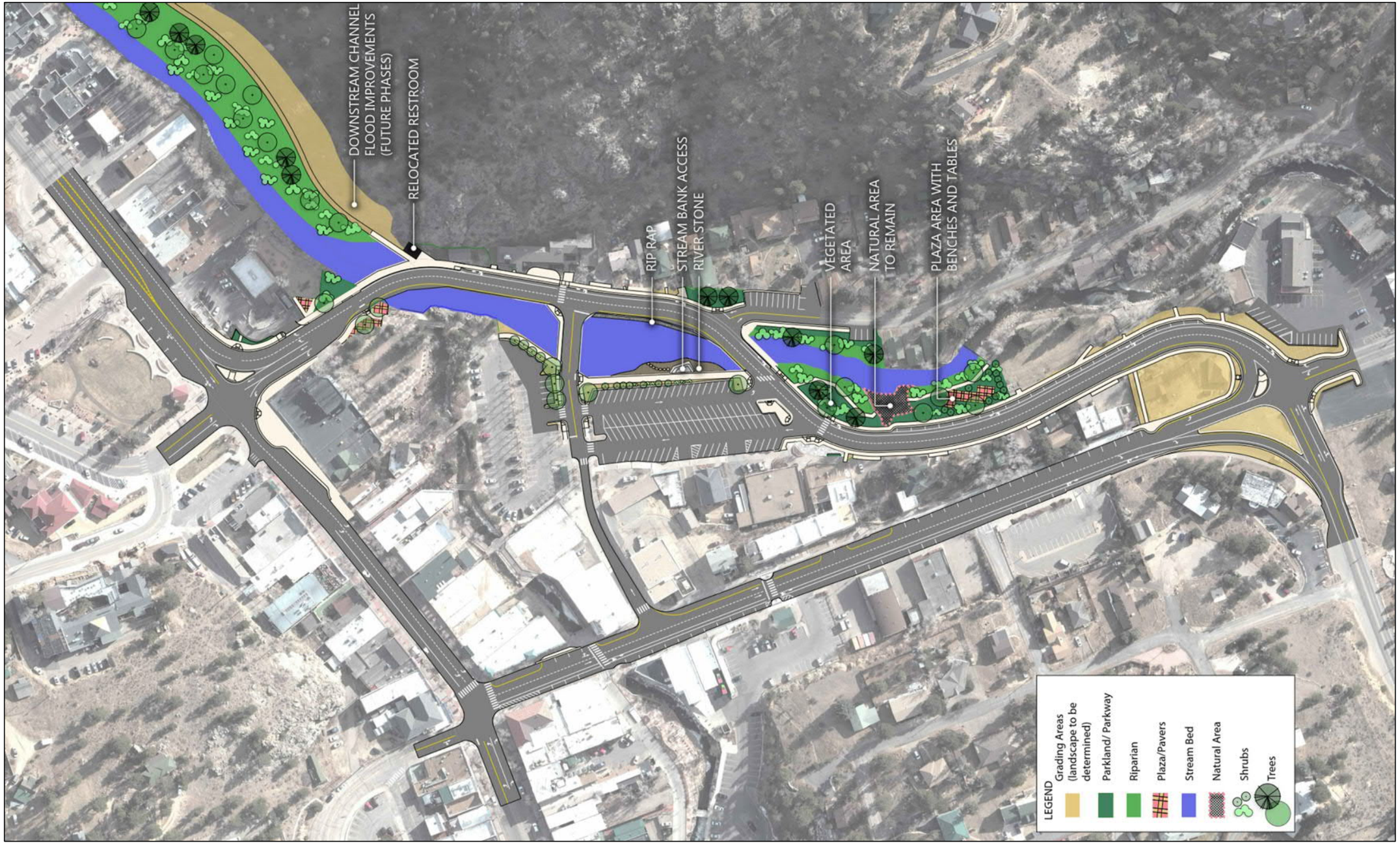
PARK	LOGICAL ID	LARIMER COUNTY PARCEL NUMBER	EXISTING PARCEL SIZE (SQFT)	EXISTING PARCEL SIZE (ACRE)	POST CONSTRUCTION PARCEL SIZE (SQFT)	POST CONSTRUCTION PARCEL SIZE (ACRE)	CHANGE IN PARCEL SIZE (SQFT)	CHANGE IN PARCEL SIZE (%)
BALDWIN PARK	1	3525121973	8,840	0.20	8,103	0.19	-737	
	2	3525121974	21,632	0.50	16,757	0.38	-4875	
	3	3525121975	12,929	0.30	9,385	0.22	-3544	
	4	3525121966	5,813	0.13	5,813	0.13		
	5	3525122941	7,142	0.16	4,152	0.10	-2990	
	6	3525122940	5,584	0.13	3,267	0.08	-2317	
SUBTOTAL			61,940	1.42	47,477	1.09	-14,463	-23.4%
CHILDREN'S PARK	7	3525119912	5,698	0.13	2,934	0.07	-2764	
	8	3525119911	5,350	0.12	4,454	0.10	-896	
	9	3525119910	5,163	0.12	4,675	0.11	-488	
SUBTOTAL			16,211	0.37	12,063	0.28	-4,148	-25.6%
TOTAL			78,151	1.79	59,540	1.37	-18,611	-23.8%

POTENTIAL NEW PARK PROPERTY

LOCATION	LOGICAL ID	LARIMER COUNTY PARCEL NUMBER (IF APPLICABLE)	POST CONSTRUCTION PARCEL SIZE (SQFT)	POST CONSTRUCTION PARCEL SIZE (ACRE)
BALDWIN PARK	11		727	0.02
RIVERSIDE BRIDGE	12	3525121058	11,857	0.27
	13	3525121057	15,877	0.36
		SUB TOTAL	28,461	0.65
UPSTREAM RIVER CORRIDOR	17	3525121967	4,164	0.10
	18	3525121968	1,718	0.04
	19	3525121069	949	0.02
	20	3525121070	2,704	0.06
	21	3525121071	3,394	0.08
		SUB TOTAL	12,929	0.30
		TOTAL	41,390	0.95

Source: AECOM, 2016.

Figure 3.16-10: Park Replacement and Restoration Areas



Source: AECOM, 2016.

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3.16.8 Section 4(f) Parks Determination

As a part of the environmental review process, the FHWA has responsibilities to comply with Section 4(f) of the Department of Transportation Act of 1966 (which has been later revised and recodified but still referred to as Section 4(f)). The intent of the Section 4(f) Statute, 49 U.S.C. Section 303, and the policy of the FHWA is to avoid transportation use of historic sites and publicly owned recreational areas, parks, and wildlife and waterfowl refuges. If the FHWA determines that a transportation use of these types of properties, also known as Section 4(f) properties, results in a *de minimis* impact on that property, an analysis of avoidance alternatives is not required, and the Section 4(f) evaluation process is complete. *De minimis* impacts on publicly owned parks, recreation areas, and wildlife and waterfowl refuges are defined as those that do not "adversely affect the activities, features and attributes" of the Section 4(f) resource.

The finding of a *de minimis* impact on recreational and wildlife resources can be made when:

1. The transportation use of the Section 4(f) resource, together with any impact avoidance, minimization, and mitigation or enhancement measures incorporated into the project, does not adversely affect the activities, features, and attributes that qualify the resource for protection under Section 4(f);
2. The public has been afforded an opportunity to review and comment on the effects of the project on the protected activities, features, and attributes of the Section 4(f) resource; and
3. The official(s) with jurisdiction over the property are informed of FHWA's intent to make the de minimis impact finding based on their written concurrence that the project will not adversely affect the activities, features, and attributes that qualify the property for protection under Section 4(f).

It is FHWA's intent to make a *de minimis* finding determination for the impacts to Baldwin Park and Children's Park. This determination will satisfy the Section 4(f) requirements for this project. During the design, every effort was made to minimize the footprint of the project. The park land to be impacted, as well as proposed enhancements, was discussed with Town of Estes Park staff over the course of the project. The proposed enhancements will provide access to the various recreation opportunities and would not adversely affect the activities, features, or attributes that make the property eligible for Section 4(f) protection.

The Town of Estes Park, as the official with jurisdiction over Children's Park and Baldwin/Riverside Park, was informed of FHWA's intent to make a *de minimis* impact finding in a letter dated June 20, 2016 included in *Appendix C: Agency Coordination*. Per the FHWA Section 4(f) Policy Paper (July 2012), the official(s) with jurisdiction over the property (Town of Estes Park) must be informed of the intent to make a *de minimis* impact determination, after which an opportunity for public review and comment must be provided. After considering any comments received from the public, if the official(s) with jurisdiction (Town of Estes Park) concurs in writing that the project will not adversely affect the activities, features, or attributes that make the property (or properties) eligible for Section 4(f) protection, then FHWA may finalize the *de minimis* impact determination. Following the public comment period for this

Environmental Assessment, the Town will determine whether to concur with he *de minimis* determination through written documentation to CFLHD.

3.17 Energy

This section addresses energy consumption and efficiency primarily as it relates to motor vehicle travel. Energy is addressed in qualitative and comparative terms.

The wise use of energy resources is important because conservation can limit overall consumption and the rate of consumption of non-renewable energy resources, reduce national dependency on international sources of fuel, and reduce pollutant emissions from the energy resource extraction process and overall consumption of fuels. The key issues for the Proposed Action involve motor vehicle energy consumption in terms of the efficient movement of vehicles; the ability of alternatives to encourage walking, biking, and the use of transit; and potential effects on vehicle miles of travel.

3.17.1 Affected Environment

Congestion in downtown Estes Park reflects highly efficient travel conditions and corresponding energy inefficiencies due to delays and idling. *Section 3.1: Transportation* provides roadway network performance metrics that provide details about existing and forecasted congestion and delays.

A pedestrian network is in place through downtown Estes Park and along Fall River and the Big Thompson River. Pedestrian routes and existing transit services are used to encourage alternative modes of travel. However, dedicated bicycle lanes and related facilities are not in place in many locations.

3.17.2 Environmental Consequences

No Action Alternative

As described in the project's purpose and need and in *Section 3.1: Transportation*, anticipated traffic increases in the future (2015-2040) are expected to increase the severity of delays and cause delays to occur on more days per year and for longer periods of time in a given day. This will result in higher energy consumption by vehicles due to traffic delays and idling under No Action conditions. This pressure may result in higher uses of transit in the future and may limit or shift travel demand through downtown Estes Park. However, this is not anticipated to reduce congestion significantly in the foreseeable future. The continued lack of bicycle routes and facilities would also continue under the No Action Alternative.

Proposed Action

As described in *Section 3.1: Transportation*, the one-way couplet would help reduce congestion, delays, and idling, thereby reducing highly inefficient energy consumption by vehicles. The Proposed Action could also improve the visitor experience and that may encourage more travel to Estes Park and RMNP than might occur otherwise. This increase in energy consumption would represent a shift in consumption rather than a regional increase in overall energy consumption. Overall and over time, the benefit from more efficient travel would offset energy consumption from construction activities and increased vehicle miles traveled caused by out of direction travel.

Construction Impacts

Energy consumption and greenhouse gas (GHG) emissions would be higher than existing conditions during the construction period. This consumption would represent an irreversible commitment of energy resources through the manufacture of construction materials and construction of new facilities. Transportation energy would be required to deliver materials to and from the construction site, and for construction workers to access the site. Energy consumption associated with construction-related activities for the Proposed Action would be short-term and localized. The Proposed Action is not expected to result in adverse construction-related energy effects.

3.17.3 Mitigation

No mitigation is required.

3.18 Required Permits and Approvals

The following permits and approvals may be required to support the construction of the Proposed Action. This list may change as design progresses.

3.18.1 Colorado Discharge Permit System (CDPS)

EPA issues stormwater regulations under the National Pollution Discharge System (NPDES). For Colorado, EPA's authority to issue NPDES permits has been delegated to the Colorado Department of Public Health and Environment (CDPHE), a state regulatory agency. CDPHE implements and enforces the NPDES programs through the CDPS program.

A CDPS General Permit for Stormwater Discharges Associated with Construction Activity, commonly called a Stormwater Construction Permit, is required for all projects that impact one acre of land, or are part of a larger project. Prior to commencement of construction, a Stormwater Construction Permit will be obtained. Under the permit stipulations, will prepare a site-specific Stormwater Management Plan (SWMP) that ensures that the water quality of receiving waters is protected during construction. The SWMP will outline in detail the specific BMPs in the project plan for implementation in the field. Included in the SWMP are such aspects as BMP locations, monitoring requirements, seed mix, concrete wash-out provisions, and other relevant information that is provided to the contractor.

3.18.2 Section 401 Water Quality Certification

A Section 401 Water Quality Certification is required in conjunction with a nationwide 404 Permit (dredge and fill permit) for any transportation construction project or maintenance activity where work occurs below the Ordinary High Water Mark (OHWM) or adjacent to wetlands. As part of its 401 Certification, Regulation No. 82 states requirement to notify the CDPHE and the owners and operators of municipal and domestic water treatment intakes or diversions downstream if potential impacts to nearby receiving waters may occur during construction. Unless specified by the Water Quality Control Division of CDPHE, in-stream turbidity monitoring is not typically required. The 401 Certification must be obtained from the Water Quality Control Division of the CDPHE.

3.18.3 Section 404 Permit

A Section 404 Permit issued by the US Army Corps of Engineers (USACE) is required because the construction will require filling below the OHWM in a body of water considered a Water of the U.S. (navigable Waters of the U.S. and adjacent wetlands; all tributaries to navigable waters and adjacent wetlands; interstate waters and their tributaries and adjacent wetlands). An individual permit is required if an excess of 0.5 acre or 300 linear feet of waterway are to be filled; a nationwide permit is required where lesser amounts of waterway are to be filled.

3.18.4 Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR)

Modifications of the 100-year floodplain require coordination with FEMA via the submission of a CLOMR and LOMR. The Ivy Street Bridge improvements and nearby channel work will require a CLOMR in Phase 1. With the significant changes in flood flows on the Fall Rivers and Big

Thompson River and overall timing of regulatory changes to Flood Insurance Studies and Flood Insurance Rate Maps, a CLOMR and LOMR may be necessary depending on the timing of the revised FIRM's and the projects final design. Close coordination with CWCB and FEMA will take place during final design to determine if a CLOMR and LOMR are required for the project.

3.18.5 CDOT Encroachment Permit

A CDOT Encroachment Permit will be required for construction work within existing State right-of-way on Elkhorn Avenue and Moraine Avenue.

3.18.6 State Access Permit

A State Access Permit is required for all new or modified access to US 34 and US 36. Any existing accesses adversely affected by the Proposed Action will be notified of the proposed changes.

3.18.7 Other Local Permits

Other permits may be required by the Town of Estes Park, as needed, such as building demolition, utility, or survey permits needed to support project construction requirements. A floodplain development permit will be required from the Town for any work done within the floodplain.

3.19 Cumulative

This discussion describes the direct and indirect effects of the Proposed Action in relation to similar effects from other past, present, and reasonably foreseeable future actions as defined by 40 CFR Section 1508.7.

3.19.1 Identification of Resources for Cumulative Effects Analysis

A cumulative impact analysis is resource-specific and is generally performed for environmental resources directly impacted by a federal action and/or identified through scoping as being key resources of concern. The resources that would be directly impacted by the Proposed Action were analyzed for cumulative effects. These include transportation, land use, economics, noise, water resources/floodplains/water quality, visual and parks/recreation/open space.

The Proposed Action would not measurably impact air quality, social conditions, historic properties, threatened or endangered species, vegetation, wetlands, or geology. Therefore, these resources are not included in the analysis of cumulative effects.

3.19.2 Temporal and Spatial Boundaries of the Cumulative Effects Analysis

The temporal boundaries for the relevant past, present, and reasonably foreseeable projects were based on the land development history of downtown Estes Park and the surrounding area. The temporal boundaries are as follows:

- Past (1964): The US 34 business route, the primary route through town along West Elkhorn, was established in 1964. Thus, this serves as the beginning timeframe for this analysis. (with the devolution of west Elkhorn Avenue in 2013, the US 34 Business route is no longer designated)
- Present (2014-2016): Projects under construction during EA compilation (2014-2016).
- Future (2040): An appropriate upper limit for “reasonably foreseeable” projects - linked to the traffic analysis forecast year. A project must be fully funded now and/or must be subject to ongoing development review or be ready for construction within the next 10 years to be considered reasonably foreseeable.

The spatial boundaries were selected as the relevant, composite geographic limits found by looking at the direct and indirect effects of the Proposed Action and how similar past, present and reasonably foreseeable projects have, are now, or will contribute directly to similar effects. In general, the spatial boundary was determined to include effects on downtown Estes Park and areas within approximately 1 mile of the downtown.

3.19.3 Historical Context

The first attempt to permanently settle the Estes Park area by non-indigenous people was by Joel and Patsy Estes, who homesteaded in the area after first arriving in 1859. The Town of Estes Park was platted in 1905. RMNP was dedicated in 1915. Prior to World War (WW) II (1915-1945), Estes Park had motels, residential, ranching, and tourism. Horse drawn travel transitioned to automobile travel. Following WW-II, the town experienced a substantial increase in traffic and tourism, as well as supportive tourist industries (commercial development, motel development). In the subsequent decades since that time, auto and tourism travel have

increased, including a substantial increase in residential properties, summer homes, businesses, and town facilities (libraries, etc.). The US 34 business route was established in 1964, and US 36 was extended from Estes Park into RMNP in the late 1970s (as noted above, (with the devolution of west Elkhorn Avenue in 2013, the US 34 Business route is no longer designated).

The past improvements combined have substantially changed the native and developed conditions of the cumulative effects analysis area since the 1960s and 1970s. Various impacts such as land use conversion from open space to urban conditions have occurred incrementally in the area and elsewhere over time. These changes and their impacts are the subject of individual reviews and approvals by government agencies over time.

3.19.4 Relevant Present and Reasonably Foreseeable Projects

This section describes improvements that are reasonably foreseeable and that will be implemented within proximity to the limits of the Proposed Action. In general, the term reasonably foreseeable means that: 1) project applications or entitlements or construction are pending with a government agency, 2) the project is included in an agency's budget or capital improvement program, 3) the project is a foreseeable future phase of an existing project, or 4) the project would likely occur within the 2040 planning horizon.

The identification of transportation, development, and water resources-related projects was determined through coordination with the Town of Estes Park staff. Over the next 10 years, the Town is planning to undertake a number of preventative maintenance and street repairs citywide, which will be funded through a sales tax initiative passed by Town voters in April 2014. Sixty percent of this new revenue is directed to street repairs and 12.5 percent is slated for trail expansion work. Existing Town streets, including Rockwell Street within the study area, would be maintained through these funds. Roadways under CDOT ownership would be maintained by CDOT. The Town also has plans to upgrade sewer facilities, as well as fire flow water services.

The following transportation-related projects are currently underway or considered reasonably foreseeable:

Estes Park Transit Facility Parking Structure: The Town of Estes Park Visitor Center located east of downtown currently provides information, parking and shuttle services for the Town and RMNP visitors. The Visitor Center's existing parking lot on the south side of the Big Thompson River has 102 spaces. The initial project phase would construct a two-story parking structure, adding 101 spaces, bringing the total to 203 spaces. Future (unfunded) plans call for a total of 412 spaces.

Downtown Estes Park Transit Structure: Previous studies have indicated the need for additional parking in the immediate downtown area. One potential location is at the existing U.S. Post Office parking lot. No funding is currently available for this structure; however, it could be advanced within the 2040 planning horizon for this project.

New Signage East of the US 34/36 Intersection: CDOT is planning to install new informational guide signage along US 34 and US 36 to direct motorists to the two main RMNP entrances (Fall River and Beaver Meadows).This signage is anticipated to be in place in the summer of 2016.

Additional Pavement Rehabilitation (Mill and Paving): The mill and paving of Elkhorn Avenue from the Elkhorn Avenue/Moraine Avenue intersection to the Elkhorn/West Wonderview Avenue intersection is proposed and funded. The project extends 1.2 miles northwest of the Elkhorn/Moraine intersection. Signing and striping and the potential addition of new ADA compliant curb ramps and existing sidewalks are also included. The potential environmental effects of the mill and paving work would be addressed in a separate NEPA document.

Trail Improvements: The Estes Valley Recreation and Park District is leading formation of a trails master plan for the Estes Valley, with support from the Town of Estes Park, Larimer County, RMNP and a number of other organizations. Two trail projects are planned in the vicinity of the study area (or that would link to trails in the study area):

- **Extension of the Fall River Trail**: The Town is leading the design of a 10-foot wide, approximately 2.5-mile concrete extension of the Fall River multi-use trail that will connect the existing trail, near Castle Mountain Lodge, to RMNP. The trail will extend along US 34/Fall River Road and Fish Hatchery Road.
- **Dry Gulch Trail**: The Town is undertaking a set of improvements to Dry Gulch Road, located east of downtown. The improvements include a new trail connection east of Dry Gulch Road, along US 34, that uses an existing CDOT bridge/culvert to cross under US 34 and connect with the Lake Estes Trail. The Lake Estes Trail links to the Riverwalk, which extends through downtown.

Development Plans: The Rocky Mountain Performing Arts Center is a privately funded project planned along East Elkhorn Avenue (between Riverside and Moraine). Project plans include an auditorium with associated facilities, a boutique hotel, restaurants, and bars. The project is in the development review process but is not fully funded at this time. No other known major development projects are planned or funded in downtown Estes Park at this time.

The Town initiated formation of a Downtown Plan in the fall of 2015 to help guide future decisions on how the Town should best allocate resources and make public improvements in downtown Estes Park. This plan is currently underway and is completion by the end of 2017.

Flood Mitigation: Through the 2013 flood, it was learned that Estes Park's 30-plus year-old flood data significantly underestimated flood risk, highlighting the need for new floodplain mapping. These new maps are currently being produced as part of the CO Hazard Mapping Project for flood-affected areas including Estes Valley. The USACE's Silver Jackets conducted a downtown flood risk assessment to provide flood proofing recommendations to the Town and private property owners downtown. The study was completed in May, 2016 and results are pending. Two planning projects related to flood analysis and mitigation are planned or underway:

- Hydrology Study – Hydrology study of Fall River, Black Canyon Creek, Dry Gulch and Big Thompson River to further understand flood flows.
- Stormwater Master Plan – Comprehensive planning process to identify drainage infrastructure needs for the Estes Valley to help mitigate flood risk.

In the vicinity of the study area, a Community Development Block Grant – Disaster Recovery grant for the replacement and expansion of the Moraine Avenue box culvert crossing Fall River has been approved to start the environmental assessment process, which must be approved

prior to the grant being awarded to the Town. CDOT must also approve the plans in order for the project to proceed.

3.19.5 Cumulative Effects On Environmental Resource Areas

Cumulative effects, including those from the Proposed Action, are described in the following sub-sections. In each case, the incremental contributions from the Proposed Action would not create effects that exceed a regulatory tolerance threshold.

Transportation

New development and the associated trips generated over the years inside Estes Park and beyond Town borders has increased traffic congestion along local roadways and at key local intersections, especially within the study area. The Proposed Action's incremental capacity benefits are expected to respond to this demand, but would not fully address the highest demand levels anticipated, especially on peak summer weekends in 2040. Additional capacity improvements within the downtown, at the US 34/US 36 intersection and elsewhere, along with improved transit and parking will be needed to fully address long-term peak period traffic and parking demands. The Proposed Action, when combined with past, present and reasonably foreseeable projects, is not anticipated to result in significant impacts. Therefore, no mitigation measures are required for transportation.

Land Use

Open land conversion to developed uses furthers the ongoing trend of urbanization in the area. This development has reduced the amount of land available for recreation, natural view sheds, historic preservation, and various biological values. Development also has increased noise, demand for housing, exposure to geologic risks, and impervious surfaces leading to higher stormwater volumes and runoff rates. However, this development in the downtown and surrounding areas, along with the Proposed Action, was planned and does not stimulate unplanned development or present the potential to open new off-site areas for development.

The Proposed Action has the potential to create redevelopment opportunities along East and West Riverside Drives due to the increase in traffic volumes, enhanced access, and provision of pedestrian facilities. However, potential development and redevelopment in these areas would not conflict with the goals of the Town's adopted plans. The Proposed Action is not anticipated to induce substantial land use change, or the intensity of planned growth. Impacts from new growth and development upon natural resources is anticipated to be minimal as the land area downtown is constrained by topography and most new development would be infill or on land that is previously disturbed. The Proposed Action, when combined with past, present and reasonably foreseeable projects, is not anticipated to result in significant impacts. Therefore, no mitigation measures are required for land use.

Economics

As outlined in *Section 3.5: Economics*, tourism is a primary driver of economic activity in downtown Estes Park, particularly in peak visitor season. Traffic volumes through downtown result in substantial congestion, which can constrain overall economic activity. The Proposed

Action is intended to improve traffic flow and reduce congestion, thereby benefiting the downtown environment.

The foreseeable transportation projects in the area, including the provision of additional parking structures downtown and at the Visitor Center, as well as directional signage at US 34/36, are expected to help alleviate congestion challenges through parking and wayfinding. In addition, the Downtown Plan (currently underway and expected to be complete in 2017) and flood mitigation projects are also anticipated to help guide a vision for the economic future of downtown and its overall health, protection and vibrancy. Based on this analysis, the Proposed Action, when combined with past, present and reasonably foreseeable projects, is not anticipated to result in significant impacts. Therefore, no mitigation measures are required for economics.

Noise

The Proposed Action is anticipated to increase noise levels at existing residential and commercial receptors along Elkhorn, Moraine and Riverside Drives. As described in *Section 3.7: Noise*, abatement measures were evaluated and found to be not feasible.

In the long term, traffic volumes will continue to increase due to population growth over time, and will result in noise increases to sensitive receptors along downtown roadway corridors. Reasonably foreseeable future projects are not anticipated to pose substantial noise concerns. Downtown roadways are generally limited by topography and surrounding land use, and thus no major modifications (widening) would be anticipated beyond this project. The Proposed Action, when combined with past, present and reasonably foreseeable projects, is not anticipated to result in significant impacts. Therefore, no mitigation measures are required to alleviate cumulative impacts of noise.

Water Resources, Floodplains, and Water Quality

The floods of 2013 prompted further evaluation of floodplain boundary assumptions and the need for long-term mitigation to alleviate flood risks. Updated assumptions for flood flows based on the CWCB 2014 hydrology study and 2014 LiDAR data along downtown river corridors were incorporated into the design of the Proposed Action. The design incorporates measures to help ensure that bridges along the study area corridor are not overtopped in flood events. The Proposed Action would also include permanent water quality features developed during final design efforts. In addition, downstream channel widening from the Riverside Bridge east to US 36 is assumed in the full build out. These measures would not fully resolve the flooding risks through downtown, but would make a substantial improvement over existing conditions.

Flood mitigation planning projects and funded improvements as outlined under the reasonably foreseeable description above would be compatible with the Proposed Action floodplain improvements. Combined together, the projects would help alleviate long-term flood risks to the residents and businesses of downtown, as well as the transportation infrastructure. Other cumulative threats to the river corridors could include water quality impairment as a result of new development and habitat modification. The Proposed Action, when combined with past, present and reasonably foreseeable projects, is not anticipated to result in significant impacts to

water resources, floodplains and water quality. Based on this analysis, no mitigation measures are required for water resources, floodplains or water quality.

Visual Quality

Visual features in the study area vary by roadway corridor. The commercial character of Elkhorn, the Town's main street, differs from the natural environment with primarily residential uses along Riverside Drive. As outlined in *Section 3.15: Visual*, the Proposed Action would result changed vantage points along Elkhorn Avenue and Moraine Avenue due to the conversion from two-way to one-way travel. Proposed construction within the Riverside Drive corridor would impact the visual character of this portion of the study area through widening of the road, broadening of the bridges, provision of new sidewalks, widening of the Big Thompson River channel, replacement of park features and conversion of park land (with provision of new park land in certain areas).

None of the reasonably foreseeable transportation projects would impact the visual character within the downtown. Both the Visitor Center transit facility parking structure and US 34/US 36 signage would occur outside of immediate study area, and would not alter views along the roadway corridors. Known flood mitigation improvements are not anticipated to impact the visual quality of the study area roadways and surrounding environment. The Proposed Action, when combined with past, present and reasonably foreseeable projects, is not anticipated to result in significant impacts. Therefore, no mitigation measures are required for visual quality.

Parks, Recreation, Open Space, Section 4(f) and 6(f)

Existing parks, recreation and open space within downtown Estes Park contribute to the unique identity and natural environment of the area. The Proposed Action's impact upon parks, open space and recreation is being mitigated through the provision of replacement lands, as outlined in *Section 3.16: Parks, Recreation, Open Space and Section 4(f) and 6(f)*. The reasonably foreseeable projects in the area, including the Visitor Center transit facility parking structure, signage and long-term maintenance projects, are not anticipated to impact existing parks, recreation and open space opportunities.

Land development intensification continues to reduce available lands for native vegetation and wildlife travel corridors along the Big Thompson River, but these impacts are likely regardless of the Proposed Action. The Proposed Action, when combined with past, present and reasonably foreseeable projects, is not anticipated to result in significant impacts. Therefore, no mitigation measures are required.

3.20 Implementation/Phasing

3.20.1 Project Phasing

As discussed and described in Chapter 2, the scope of the Proposed Action was expanded due to increased flood flows resulting from analysis after the 2013 floods. It was determined that the expanded analysis was required in order to fully understand the impacts and to develop the best alternative that can provide improvements according to the needs of the Town. However, this expanded scope results in estimated costs that exceed the available funding for the project. Therefore the project must be constructed in phases as funding is identified and becomes available. This EA covers the impacts for the full Proposed Action and therefore provides the required NEPA clearances to help streamline future design and construction efforts. The Proposed Action analyzed in this EA consists of the following:

- Funded Phase 1 – CFLHD project CO FLAP 34(1), 36(1) Moraine Avenue and Riverside Drive – reconstruction and realignment of Riverside Drive, reconstruction of the Ivy Street Bridge and associated transportation improvements along Elkhorn and Moraine could be built as part of the currently funded FLAP project (Phase 1). These improvements are funded.
- Future reconstruction of the Rockwell and Riverside Bridges – This will likely occur at some point in the future, however these activities are not currently planned and programmed "projects". There is no identified funding source; CDOT involvement is likely as they will own and maintain the newly constructed Riverside Drive.
- Future channel/floodplain improvements – There is not a currently planned or programmed project that includes these activities; they are not yet funded but are likely to be built in subsequent phases.

The elements that make up the funded Phase 1 are shown on Figure 3.20-1.

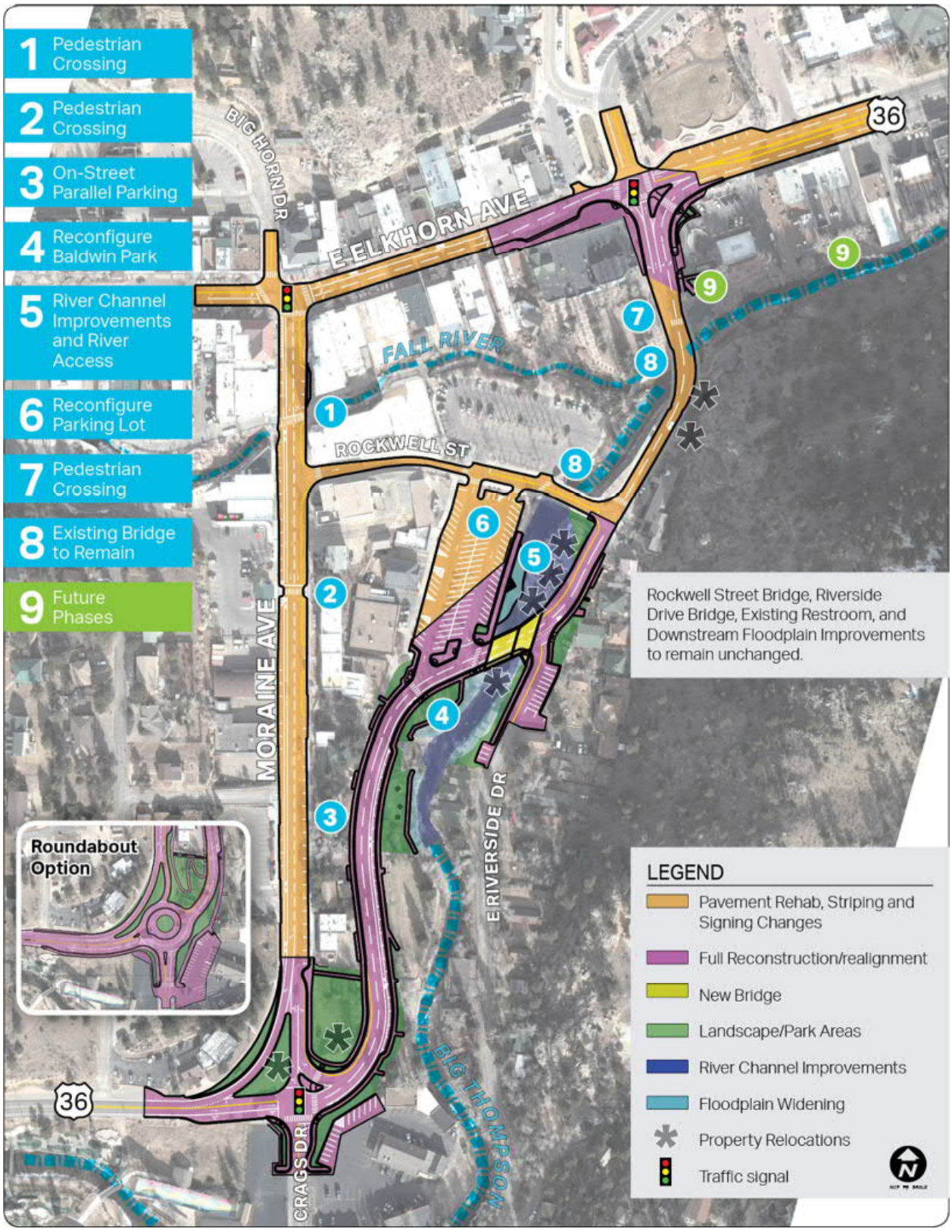
Phase 1 Floodplains

Phase 1 assumes best available flows, which are significantly higher than current regulatory flows (FEMA effective flows). Best available flow data came from a 2014 study that was initiated by CDOT following the 2013 floods. This study reassessed the peak flows and found them to be higher than current regulatory flows.

Phase I would replace the Ivy Street Bridge and widen the Big Thompson River channel between the Ivy Street bridge and the Rockwell Street Bridge. This would help decrease the depth of flooding as compared to flooding that may occur under the No Action. However, the width of the floodplain upstream of the Riverside Bridge through the Rockwell Bridge would not substantially change under Phase 1, as shown in Figure 3.20-2.

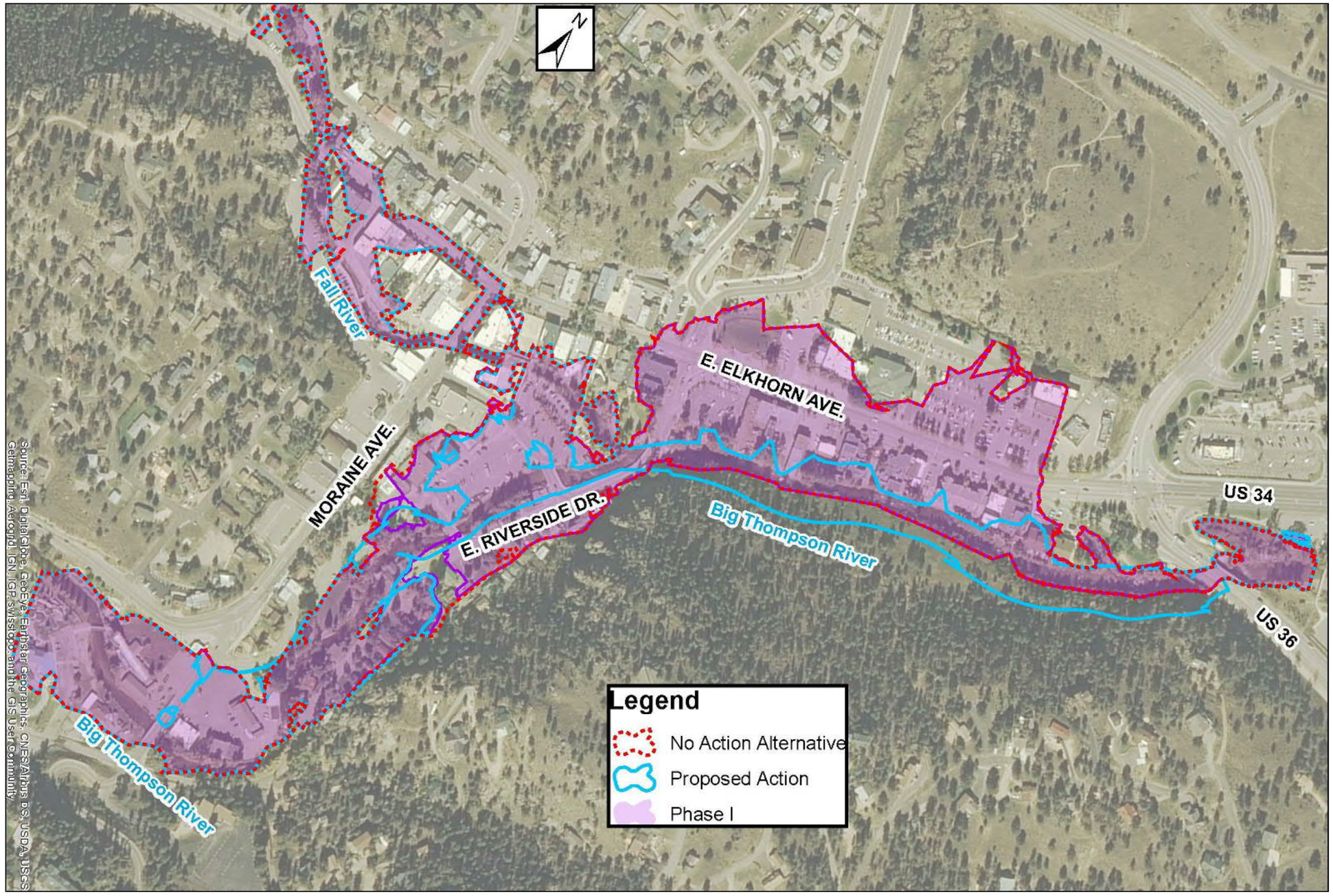
Whereas the Proposed Action decreases the floodplain width downstream of the Riverside Bridge, Phase 1 would not accomplish this reduction since no downstream channel/floodplain improvements would occur. Under Phase 1 alone, the area north of the Big Thompson River along E. Elkhorn Avenue would be vulnerable to flooding (to the same extent that it is today and with the No Action).

Figure 3.20-1: Phase 1 Improvements



Source: AECOM 2016

Figure 3.20-2: Floodplain Boundary (No Action, Proposed Action and Phase 1)



Source: AECOM, 2016.

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3.21 Summary of Impacts and Mitigation Measures

The purpose of this section is to summarize the impacts and mitigation measures for Phase 1. Phase 1 includes reconstruction and realignment of Riverside Drive, reconstruction of the Ivy Street Bridge and associated transportation improvements along Elkhorn and Moraine to fully implement the one-way couplet configuration. Phase 1 would not include reconstruction of additional bridges or downstream channel widening.

Table 3.21-1 provides a summary of the impacts and mitigation measures. The far right column indicates whether the impact and corresponding mitigation measure apply to Phase 1 or to future phases of the project. It is assumed that mitigation measures for Phase 1 are the responsibility of CFLHD. Future phase commitments and entity responsible would be revisited at a later date once funding is identified.

Table 3.21-1: Summary of Impacts and Mitigation Measures

Resource	Impact	Proposed Mitigation Commitment	Timing/ Phase
3.1 Transportation	**Parking:** Displacement of thirteen parking spaces	The project team will continue to seek opportunities to minimize the reduction of spaces in conjunction with implementation of the Proposed Action.	Phase 1
3.1 Transportation	**Transit**: shuttle stop near the northbound Moraine Avenue and eastbound Elkhorn Avenue intersection would be impacted	Shuttle stop would be relocated to East Riverside Drive near Children's Park	Phase 1
3.1 Transportation	**Construction**: Temporary traffic and access impacts during construction along East Elkhorn Avenue, Moraine Avenue, Riverside Drive, and Rockwell Street for milling, resurfacing, and restriping with longer term traffic impacts for Ivy Street bridge replacement.	See Section 3.1.3 for a full list of detours and lane closures during construction. **Transit**: CFLHD will coordinate with the Town of Estes Park and RMNP shuttle operators during design and construction to provide adequate detour routing for impacted bus routes and bus stops. Transit operations would be maintained throughout the construction. **TDM**: Voluntary reductions in vehicle trips during peak hours would be encouraged to reduce congestion. This will be accomplished through a public information campaign to educate travelers on TDM measures that may be used to reduce congestion during construction. CDOT and the Town of Estes Park will work with local organizations and employers to help promote the campaign throughout the construction period. The public information campaign will inform the organizations, employers, and the general public about upcoming street closures and how best to plan trips.	Phase 1
3.2 Land Use	Acquisition of park, residential and commercial properties in the project area.	Mitigated through right-of-way (Section 3.3), Section 4(f) and Section 6(f) (Section 3.16) processes	Phase 1
3.3 Right-of-Way/ Acquisitions	Property acquisition and relocation (commercial and private)	All acquisitions and relocations will comply with federal and state requirements, including the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.	Phase 1

Resource	Impact	Proposed Mitigation Commitment	Timing/ Phase
3.3 Right-of-Way/ Acquisitions	Property acquisition and relocation (commercial and private)	CDOT will provide all impacted property owners notification of its intent to acquire an interest in their property, including a written offer letter of just compensation specifically describing those property interests being sought. CDOT will provide all displaced persons advisory services and notification of relocation eligibility, as applicable. A Right-of-Way Specialist will be assigned to each property owner to assist them with this process.	Phase 1
3.4 Social Conditions/ Environmental Justice	No impacts	No mitigation required.	Not Applicable
3.5 Economic Considerations	Acquisition of public and private property and loss of existing parking spaces. Changes in access to properties and change in roadway travel direction along Elkhorn, Moraine and Riverside Drives	· Comply fully with federal and state requirements, including the Uniform Act, for all acquisition and relocation. · Design the Proposed Action to maintain and, where possible, improve access to existing businesses. · Work with stakeholders to incorporate design features to enhance business and tourism opportunities. · Install signage to guide motorists to the downtown shops, parking, and National Park entrances and direct motorists to less congested routes during peak congestion periods. · Seek to minimize the loss of parking spaces during detailed design. · Initiate a Wayfinding Signage Plan.	Phase 1
3.5 Economic Considerations	Future phases of the Proposed Action requires impact to vacant parcels owned by CDOT and two conservation easements along the Big Thompson River. These are needed for channel/floodplain improvements.	The implementing agency of channel/floodplain widening will coordinate with CDOT and the Estes Valley Land Trust as the responsible entities for these properties.	Future Phases

Resource	Impact	Proposed Mitigation Commitment	Timing/ Phase
3.5 Economic Considerations	Construction disruption	· Conduct regular public outreach to inform residents, business owners, business operators and visitors of construction activities and scheduling, and provide options for travel routes and parking in the area. Include public outreach to let the local community and region know that the downtown is open for business. · Provide pedestrian access to businesses via sidewalks and trails. Provide trail detours. · Maintain availability of vehicle access along Elkhorn, Moraine, Riverside and other local streets to the extent possible through implementation of specific construction phase measures that maintain traffic. If closures are required and considered unavoidable, the process will apply techniques to minimize the duration of the closure. · Incorporate stakeholder involvement at final design to enhance access, parking, and aesthetic features that would contribute to business and tourism potential. · Implement the reconstruction of the Moraine Avenue/Crags Drive intersection and Riverside Drive reconstruction and bridge construction so that the majority of the work is completed in the fall/winter/spring months. · Implement the resurfacing and traffic signal installations required on Elkhorn and Moraine Avenue with daytime shoulder and single lane closures. · Develop a construction staging plan that minimizes impact to existing parking and business access.	Phase 1
3.6 Air Quality	Air pollutants released during construction	CFLHD and its contractors will comply with the fugitive dust permitting and control requirements of the CAQCC and obtain a general construction Air Pollutant Emission Notice.	Phase 1

Resource	Impact	Proposed Mitigation Commitment	Timing/ Phase
3.6 Air Quality	Fugitive dust during construction	· Apply water and chemical stabilizers in active construction areas and on haul roads as necessary to suppress dust. · Post speed limit signs and enforce speeds in active construction areas and on haul roads. · Water, perform soil compaction, and revegetate disturbed areas, as needed and appropriate for site conditions. · Cover haul trucks, as appropriate, to reduce dust. · Require construction contractor to limit the idling equipment time.	Phase 1
3.6 Air Quality	Future phases of the Proposed Action will require excavation and hauling of material for channel modifications.	· Apply water and chemical stabilizers in active construction areas and on haul roads as necessary to suppress dust. · Post speed limit signs and enforce speeds in active construction areas and on haul roads. · Water, perform soil compaction, and revegetate disturbed areas, as needed and appropriate for site conditions. · Cover haul trucks, as appropriate, to reduce dust. · Require construction contractor to limit the idling equipment time.	Future Phases
3.7 Noise	**With Signalized Intersection at Moraine/Riverside**: 30 modeled points representing 32 receptors would experience levels above the NAC during peak noise hour. **With Roundabout Option at Moraine/Riverside**: 30 modeled points, representing 32 receptors would experience levels above the NAC during peak noise hour. No receptors are expected to experience a 10 dBA; the largest increase is predicted to be 7 dBA.	· Noise barriers were evaluated throughout the noise study area and were found to be infeasible. Abatement other than barriers was also evaluated, and were found to be infeasible. Therefore, no mitigation measures are recommended for noise.	Not Applicable

Resource	Impact	Proposed Mitigation Commitment	Timing/ Phase
3.7 Noise	Temporary noise impacts during construction	· Notify neighbors of timing and duration of construction activities. · Manage construction activities to keep noisy activities as far from sensitive receptors as possible. · Exhaust systems on equipment would be in good working order. Equipment would be maintained on a regular basis, and equipment may be subject to inspection by the CFLHD Project Engineer to ensure maintenance. · Properly designed engine enclosures and intake silencers would be used where appropriate. · New equipment would be subject to new product noise emission standards. · Stationary equipment would be located as far from sensitive receptors as possible. · Perform construction activities during hours that are least disturbing to nearby residents.	Phase 1
3.7 Noise	Temporary noise impacts from blasting for streambed alterations to the Big Thompson River.	Appropriate actions should be taken to prevent damage and disruption to neighbors, and needs to be coordinated with the Town prior to the blasting events. Actions may include: · Consulting with blasting experts; · Acquiring any necessary variances; · Minimizing amounts of explosives used; · Employing appropriate protection methods; · Notifying neighbors in advance; and, · Timing blasting activities for the least disruption.	Future Phases
3.8 Water Resources, Floodplains and Water Quality	**Construction**: Land disturbances will increase the potential for sediment and other pollutants to enter the rivers.	Implement standard erosion control and sediment control BMP's in accordance with CFLHD Specifications FP 14 and provide sound engineering practices during construction and post construction.	Phase 1

Resource	Impact	Proposed Mitigation Commitment	Timing/ Phase
3.8 Water Resources, Floodplains and Water Quality	**Construction**: Land disturbances will increase the potential for sediment and other pollutants to enter the Big Thompson River and Fall River due to Ivy Street Bridge Replacement.	· The project's Stormwater Management Plan (SWMP) and future CWQ Section 404/401 permit requirements will include BMPs to protect water quality during construction. · Perform all work in accordance with CFLHD's Specifications FP 14 Section 157 (Soil Erosion and Sediment Control), Section 629 (Rolled erosion control products and Cellular Confinement Systems), and Section 713 (Roadside Improvement Material). · Locate construction staging and materials stockpiling farther than 50 feet from the edge of Big Thompson River or Fall River, when possible. If this buffer is not achievable, placement of materials closer with appropriate additional BMPs is permissible. · Designate refueling containment areas away from the Big Thompson River and Fall River. · CFLHD or its contractor must file a notice of intent with the Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Division for groundwater dewatering, if dewatering is required for construction. A discharge permit would also be required if groundwater is discharged to a water body (i.e., the Big Thompson River). · Perform final hydraulic analysis with updated hydrology in close coordination with CWCB, Town of Estes Park, and FEMA. Prepare a Conditional Letter of Map Revision and follow up Letter of Map Revision for the Ivy Street Bridge and related channel work near the bridge as determined necessary by the Town of Estes Park and FEMA.	Phase 1

Resource	Impact	Proposed Mitigation Commitment	Timing/ Phase
3.9 Wetlands and Waters of United States – Wetland impacts and temporary impacts to Waters of the U.S.	Phase 1 would have no permanent impacts to wetlands but would require 0.3 ac of temporary impacts to Other Waters of the U.S.	No mitigation required in Phase 1.	Phase 1
3.9 Wetlands and Waters of United States – Wetland impacts and temporary impacts to Waters of the U.S.	Future phases of the Proposed Action would require 0.002 ac of permanent impact to wetlands at the northeast corner of the existing Rockwell Bridge. In addition, 0.8 acres of impact to Other Waters of the U.S are anticipated under future phases of the Proposed Action. These impacts are required for channel widening and reconfiguration of the Big Thompson River.	· The implementing agency will obtain Section 404 permit authorization from the USACE for work along and in the Big Thompson River. Based on current estimated impacts, it is anticipated the Proposed Action would meet the requirements for a Nationwide Permit. · The implementing agency will coordinate the final design for channel improvements with the USACE and Estes Valley Watershed Coalition. Impacts to wetlands and OWUS will be minimized and avoided as possible. · The implementing agency will work to ensure that work within the River will be completed during winter months during lower flows and outside of fish spawning time frames. Measures to protect existing riparian areas during construction activities through placement of temporary and/or construction-limit fencing will be included in the construction package. · Dewatering for bridge construction would require a dewatering permit through the CDPHE.	Future Phases
3.10 Vegetation, Wildlife and T&E Species	**Vegetation**: Tree removal in Baldwin Park, along the East and West Riverside corridor roadsides and along the river channel (near the Post Office).	· Tree removal will be minimized to the extent practicable.	Phase 1

Resource	Impact	Proposed Mitigation Commitment	Timing/ Phase
3.10 Vegetation, Wildlife and T&E Species	**Vegetation**: Weed growth where vegetation is removed during construction.	· Landscaped areas disturbed during construction will be revegetated with native species. Landscaping will be determined during the final design process. · The introduction of noxious weeds and non-native plant species into the work site will be prevented. Dirt, plant, and foreign material will be removed from vehicles and equipment before mobilizing to work site. · Cleaning and inspection records will be maintained. · Conformance to the Federal Seed Act, the Federal Noxious Weed Act, and applicable State and local seed and noxious weed laws will be maintained.	Phase 1
3.10 Vegetation, Wildlife and T&E Species	**Migratory Birds**: Construction activities occurring during the migratory bird nesting season (February 1 through July 15) may impact individuals by displacing birds from suitable habitat or disrupting breeding activities.	· If construction activities will occur during the migratory bird season, a qualified biologist will conduct a preconstruction survey two weeks prior to the start of construction to determine if nesting migratory birds are present. · If bird species protected under the MBTA are actively nesting in the project area during construction, the biologist will identify appropriate conservation measures to protect the species. These measures may include, but are not limited to: establishing a construction-free buffer zone around the breeding site, biological monitoring of the breeding site, delaying construction activities in the vicinity of the breeding site until the young have dispersed, and/or removing vegetation that supports active nest or den sites once the sites are determined to no longer be active (typically by July 15).	Phase 1 and Future Phases
3.10 Vegetation, Wildlife and T&E Species	**Wildlife**: Potential Impacts to elk habitat	Cut slopes would be constructed (by the implementing agency) to allow elk to continue to access the existing conservation easement area along the Big Thompson River riverbank (as required by the Estes Valley Land Trust).	Future Phases

Resource	Impact	Proposed Mitigation Commitment	Timing/ Phase
3.11 Cultural Resources	Determination of no adverse effect to the following resources: RMNP Headquarters, RMNP Museum and Visitor Center, State Highway 262 and Panoramic Point.	No mitigation is required.	Not Applicable
3.11 Cultural Resources	Determination of no adverse effect to Panoramic Point; however, construction blasting could impact slope stability in the area surrounding the point.	Temporary stabilization of the rock platform at Panoramic Point, by the implementing agency.	Future Phases
3.12 Soils and Geology	Direct impacts of geological hazards during construction would include the potential for grading and excavation to exacerbate slope instability. Impacts may be increased during periods of high precipitation or high soil moisture.	Any slope instability concerns will be mitigated through design. During construction, topsoil will be conserved and replaced on any exposed slopes. All new slopes will be revegetated with native species.	Future Phases
3.13 Hazardous Materials	Possible exposure to potentially hazardous materials.	Requirements will be outlined to address exposure risks as part of the construction plans, specifications, and estimates	Phase 1
3.13 Hazardous Materials	Excavation and right-of-way acquisition may pose hazardous materials concerns	A full Phase I and II investigation is recommended for acquisition of right-of-way. A chain-of-title search to establish ownership history will be conducted along with the property specific Phase I ESA for the seven structures impacted (as detailed in Section 3.13) prior to demolition.	Phase 1

Resource	Impact	Proposed Mitigation Commitment	Timing/ Phase
3.14 Public Services and Utilities	Construction of the project would have minor impacts on public services and utilities.	· Coordinate construction activities and design details with local public service and utility service providers during final design, to minimize disruptions, maintain traffic and accommodate connectivity requirements. · Replace fire hydrants at the same locations and spacing as existing, if fire hydrant replacement is necessary. · Work with Town staff to explore opportunity to place conduits under the road during construction for existing and future electric facilities. · Remove sanitary services back to the main line for buildings that will be removed/ relocated. · Continue to coordinate with utility service providers to identify existing utility agreements, utilities that may need relocated, and develop designs and plans for relocation. Develop utility agreements detailing the scope and responsibilities for any utility requiring relocation. · Public notice will be required and provided prior to any service disruptions.	Phase 1

Resource	Impact	Proposed Mitigation Commitment	Timing/ Phase
3.15 Visual Quality	Impacts to lighting within the corridor.	· Incorporate lighting fixtures that minimize nighttime glare and sky glow. Where new light fixtures are added or old fixtures are replaced, use lamps and/or light shields that direct glare away from the street, buildings, or the sky to minimize glare and sky glow, in accordance with local ordinances. These measures will not preclude any aesthetic ambient lighting features that may be included in the project design. · Minimize light glare during any nighttime construction activities by taking measures to direct the light inward toward the construction site and minimize glare for motorists, residents, pedestrians, and visitors in the vicinity of the construction sites. · For the area surrounding the Ivy Street bridge (specifically the Misty Mountain Lodge), landscaping will be used to shield the nighttime headlight glare at this location. Landscaping may also be used in other areas as needed. Further evaluation will be conducted during final design.	Phase 1
3.15 Visual Quality	Impacts on Elkhorn/Moraine Corridor.	Both the signalized intersection and roundabout options would add wayfinding signage. Landscape features would be possible under both intersection configurations, including gateway signage/special landscaping.	Phase 1
3.15 Visual Quality	Impacts to Riverside Drive Corridor.	Park features such as trails, benches, paths, trees and vegetation would be removed and replaced with new features, park facilities, pathways and vegetation. New connections and facilities would be added and linked to new park land areas creating new visual resources and vantages points. New urban design features would complement existing features and create gateways.	Phase 1

Resource	Impact	Proposed Mitigation Commitment	Timing/ Phase
3.15 Visual Quality	**Construction**: Construction activities would be highly visible and would result in the removal of existing buildings, park features and vegetation within the construction disturbance area. Construction equipment, materials and vehicles would be visible in staging areas within and potentially outside of the Riverside corridor.	Construction impacts would be temporary, and to the greatest extent possible, CFLHD and its contractors will screen construction equipment and construction materials. Construction phasing will be completed during final design, and final recommendations will be made in consultation with Town officials.	Phase 1
3.15 Visual Quality	**Construction:** Vegetation and soil removal, along with the presence of heavy machinery, would temporarily alter the visual character of the Big Thompson River bank and the hillside from a natural vegetation setting to a bare-earth setting. Views for Riverwalk users and patrons/staff within the commercial buildings would be affected during construction.	The slopes should be seeded and mulched using native seed mixes and landscaping logs. Additionally, if blasting occurs, it should result in the look of a naturally occurring rock face; no visible bore holes or half casts should remain upon completion.	Future Phases
3.16 Parks, Recreation, Open Space, and Section 4(f) and 6(f)	**Construction**: Construction activities on Elkhorn Avenue would create short term access, air quality, and noise nuisances to Bond Park.	Construction impacts would be temporary, and to the greatest extent possible, CFLHD and its contractors will create alternate access during construction and maintain construction equipment to minimize impacts. Construction phasing will be completed during final design, and final recommendations will be made in consultation with Town officials.	Phase 1
3.16 Parks, Recreation, Open Space, and Section 4(f) and 6(f)	Direct use of 289 sf of Children's Park from park use to roadway use.	Conversion of land to park along the Riverside Corridor would offset these impacts.	Phase 1

Resource	Impact	Proposed Mitigation Commitment	Timing/ Phase
3.16 Parks, Recreation, Open Space, and Section 4(f) and 6(f)	Direct use of 14,463 sf of Riverside/ Baldwin Park from park use to roadway use.	Conversion of land to park along the Riverside Corridor would offset these impacts. Proposed urban design features would be installed. Improved at grade crossings would be constructed with pedestrian activated signals. Displaced amenities and hard surface features would be replaced in a manner that reestablishes existing conditions to the extent practicable.	Phase 1
3.16 Parks, Recreation, Open Space, and Section 4(f) and 6(f)	Phase 1 requires conversion of 4,148 sf of Section 6(f) resource land at or near Children's Park. Section 6(f) impacts to Riverside/Baldwin Park include portions of parcels 3-6, which constitutes 8,851 square feet of the park.	Replacement property includes parcels 11, 13, 17 and 18, which total approximately 11,000 square feet of replacement land combined. Parcels 11, 13, 17 and 18 will become park parcels maintained in perpetuity by the Town of Estes Park. All replacement parcels will provide the public with river access.	Phase 1
3.16 Parks, Recreation, Open Space, and Section 4(f) and 6(f)	**Construction**: Construction will require earthwork including excavating for bridge foundations, placement of fill materials, and construction of fill slopes or low retaining walls at Riverside/Baldwin Park.	Construction impacts would be temporary, and to the greatest extent possible, CFLHD and its contractors will create alternate access during construction and maintain construction equipment to minimize impacts.	Phase 1

Resource	Impact	Proposed Mitigation Commitment	Timing/ Phase
3.17 Energy	Energy consumption and greenhouse gas (GHG) emissions would be higher than existing conditions during the construction period. This consumption would represent an irreversible commitment of energy resources through the manufacture of construction materials and construction of new facilities. Transportation energy would be required to deliver materials to and from the construction site, and for construction workers to access the site. Energy consumption associated with construction-related activities for the Proposed Action would be short-term and localized. The Proposed Action is not expected to result in adverse construction-related energy effects.	No mitigation required.	Not Applicable

4 CORRESPONDENCE, CONSULTATION AND COORDINATION

4.1 Overview

The Federal Highway Administration (FHWA) Central Federal Lands (CFL) (the lead agency), together with the Town of Estes Park and CDOT, received substantial input from community stakeholders and the public in identifying the project purpose and need, design alternatives for consideration and transportation issues of concern through downtown Estes Park. CFL's intent was to develop an open and collaborative process to gather input and to provide multiple forums for public comment and dialogue. This input helped improve the process in an effort to develop a project that will help accomplish the transportation needs of downtown.

The project team implemented a multi-pronged outreach process beginning with a public involvement plan. This plan identified the methods of outreach aligned with important milestones in the NEPA process. Through the EA process, the project team held public and small group meetings, established a Technical Advisory Team (TAC), and met one-on-one with resource agencies and stakeholder representatives. The public information program provided information about the project and public meetings through mailings, a project website, advertisements in local newspapers, social media, and a telephone hotline. The Town Public Information Office helped distribute information about the project through Town communication channels.

This chapter describes the public involvement process implemented as part of the Environmental Assessment.

4.2 Public Involvement Plan

A public involvement plan specific to this project was developed as part of project initiation in close consultation with the FHWA Central Federal Lands, Town of Estes Park and CDOT. The plan's purpose was to create a process that ensured consistent distribution of project information and ongoing involvement and input from public and agency stakeholders, interested parties, and affected members of the public.

A number of public involvement opportunities, communication methods and outreach efforts were employed to involve and inform the community over the course of the project.

4.3 Scoping

4.3.1 Public Scoping Meeting

Two open houses were held on October 8, 2014 to introduce the project and gather public feedback on issues of concern. The first open house was held from 12:00 to 2:00 PM. It was announced to the general public; in addition, targeted outreach in the form of a mailed letter was sent to residents and businesses located along the study area roadways. A second open house for the general public was held from 4:00 to 6:00 PM on the 8th. Both meetings were held at the Estes Park Museum Meeting Room, 200 Fourth Street. The open houses were announced through press releases, newspaper advertisements, the project website ([redacted]), the town email list, the project email list and social media. Per

the sign-in form, 123 persons attended the first open house and 104 persons attended the second open house. The meetings provided information to the public concerning:

- Project History (design options evaluated prior to this project)
- State and federal funding sources allocated to the project
- Design options presented as part of previous studies
- Environmental and community considerations
- Tentative project schedule

4.3.2 Agency Scoping

Agency scoping letters were distributed via email in November 2014 from the Central Federal Lands Highway Division to all interested federal, tribal, state and local agencies to invite their participation and input into the process. Representatives from the following agencies received letters:

- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- U.S. Forest Service
- U.S. Environmental Protection Agency
- National Park Service
- U.S. Postal Service
- U.S. Department of Agriculture (State of Colorado)
- Colorado Department of Transportation
- U.S. Department of Housing and Urban Development
- Federal Emergency Management Agency
- Larimer County

The following tribal governments received letters:

- Apache Tribe of Oklahoma
- Cheyenne & Arapaho Tribes of Oklahoma
- Cheyenne River Sioux Tribe
- Comanche Nation of Oklahoma
- Crow Creek Sioux Tribe
- Eastern Shoshone Tribe
- Kiowa Tribe of Oklahoma
- Northern Arapaho Tribe
- Northern Cheyenne Tribe
- Oglala Sioux Tribe
- Rosebud Sioux Tribe
- Southern Ute Indian Tribe
- Standing Rock Sioux Tribe of North & South Dakota
- Ute Indian Tribe
- Ute Mountain Ute Tribe

Copies of the letters as well as any response letters received are included in *Appendix C: Agency Coordination*.

4.4 Technical Advisory Committee

A Technical Advisory Committee composed of Central Federal Lands, CDOT, and the Town of Estes Park (with support from the consultant team) was formed early in the project. The TAC met approximately monthly through the duration of the project to discuss the environmental process, design, public outreach and other relevant project updates.

4.5 Meetings

The following describes public meetings and small group meetings hosted by the project team, as well as Town Board and Town Hall meetings led by Town staff and administration. Though not official public forums hosted as part of the EA process, the Town Board and Town Hall meetings were important means for receiving input and addressing community concerns throughout the process.

Materials presented at these meetings are included in *Appendix D: Comments and Coordination*.

4.5.1 Public Meetings

October 8, 2014 Open Houses: See description in Section 4.3 above.

March 25, 2015 Public Meeting: A public meeting was held from 6:00 to 8:00 PM at the Estes Park Event Center (1125 Rooftop Way) to present the alternatives screening process. A presentation was given, followed by public comments.

4.5.2 Small Group Meetings

Small group meetings were held on December 10th and 11th, 2014 to discuss specific topic areas, including residential/neighborhood needs, economics, environmental and multi-modal transportation. The meetings began with a presentation by the project team followed by small group discussion on specific topic areas. As part of this presentation, initial design alternatives were presented and attendees provided feedback on those alternatives (along with new alternatives for consideration).

4.5.3 Property Owner Meetings

Project team members held individual meetings with potentially affected property owners along the corridor alignments. Meetings with individual property owners who may require full relocation took place on February 18, and March 25, 2016. Additional meetings with adjacent property owners in Piccadilly Square and tenants at the Children's Park parking lot were held on May 10, 2016. The purpose of each meeting was to discuss the project purpose and study area, the potential impacts to the property owner, the next steps in the project, and an overview of the right-of-way process (Uniform Relocation Assistance and Real Property Acquisition Policies Act). CDOT will hold more in-depth meetings with each property owner as the project moves into the right of way and final design phases.

4.5.4 Town Board Meetings

This project was placed on the Agenda for both Town Board study sessions and Town Board meetings. Specific dates are as follows:

- **Town Board Study Session, March 18, 2015**: The purpose of this meeting was to present the Board with an update on project activities to-date, with a focus on the alternatives screening process. The project team gave a presentation, and then answered questions from the Town Board.
- **Town Board Meeting, April 15, 2015**: A special meeting of the Town Board was held to discuss the alternatives screening process and the recommendation from the NEPA project team to proceed through the EA process with the No Action and Alternative 1 (Couplet). The Town Board heard comments from the public and then took action to proceed with the EA process.
- **Town Board Meeting, August 11, 2015**: The Town Board reviewed a draft resolution which, if approved, would set an election to refer a measure to the electorate during the Coordinated Election in November (2015) for the Downtown Estes Loop and set ballot language. At the meeting, the board voted to complete the NEPA process, understand all of the facts and the implications, and then make a decision on behalf of the community.

4.5.5 Town Hall Meetings

Town Hall Meeting, January 15, 2015: The Town of Estes Park hosted a Town Hall meeting on January 15th, 2015 at Town Hall. The meeting provided an opportunity for downtown businesses to ask questions and express to peers and Town officials their opinions on traffic-related issues and the project as a whole. Town staff gave a brief presentation on the background and status of the project and then opened the floor for public comment.

4.6 Avenues for Public Comment

4.6.1 Project Website

As part of initiation of the project, a website was developed ([redacted]) and updated over the course of the project. The website included a project description, project partners, schedule, meeting materials, meeting summaries and public involvement opportunities. An editable comment form was provided to collect input directly through the website. Approximately 12,000 users visited the site a total of 15,000 times since the website went “live” in October 2014.

4.6.2 Project Email Address

A project email address ([redacted]) was created at the beginning of the project to. All emails were received the project team and documented in a matrix. Any that requested a response were replied to promptly.

4.6.3 Project Hotline

A project hotline (970-480-7045) was created by the project team early in the project to accept questions and comments. Phone call content and caller information was documented in a spreadsheet. A team member returned the call if a response was requested.

4.7 Project Updates

4.7.1 Frequently Asked Questions (FAQs) and Newsletters

A set of FAQs were initiated in November 2014 (following the first set of public meetings) to address questions asked by the community on a variety of topics. Each question included a response developed by the project team. The FAQs were updated in February 2015, and May 2015. The FAQs were posted on the project website and emailed to the project email list, as well as a contact list maintained by the Town. Copies of the FAQs are included in *Appendix D: Comments and Coordination*.

A newsletter was published in March 2015 to provide an update on the project, review the project background and summarize activities completed to-date. A newsletter with FAQ attached was issued in March 2016 with a project update.

4.7.2 Social Media

The Town of Estes Park's Facebook page was updated to include meeting and other project-related announcements.

4.7.3 Project Email List

The project team compiled an email list of all attendees from project-related meetings, as well as those who requested addition to the email list. Project announcements, including frequently asked questions, newsletters, and meeting notifications, were sent to this list. This list grew over the course of the project; at the time of EA publication the list totaled 175 individuals. In addition, project announcements were distributed through an email distribution list managed by the Town of Estes Park.

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