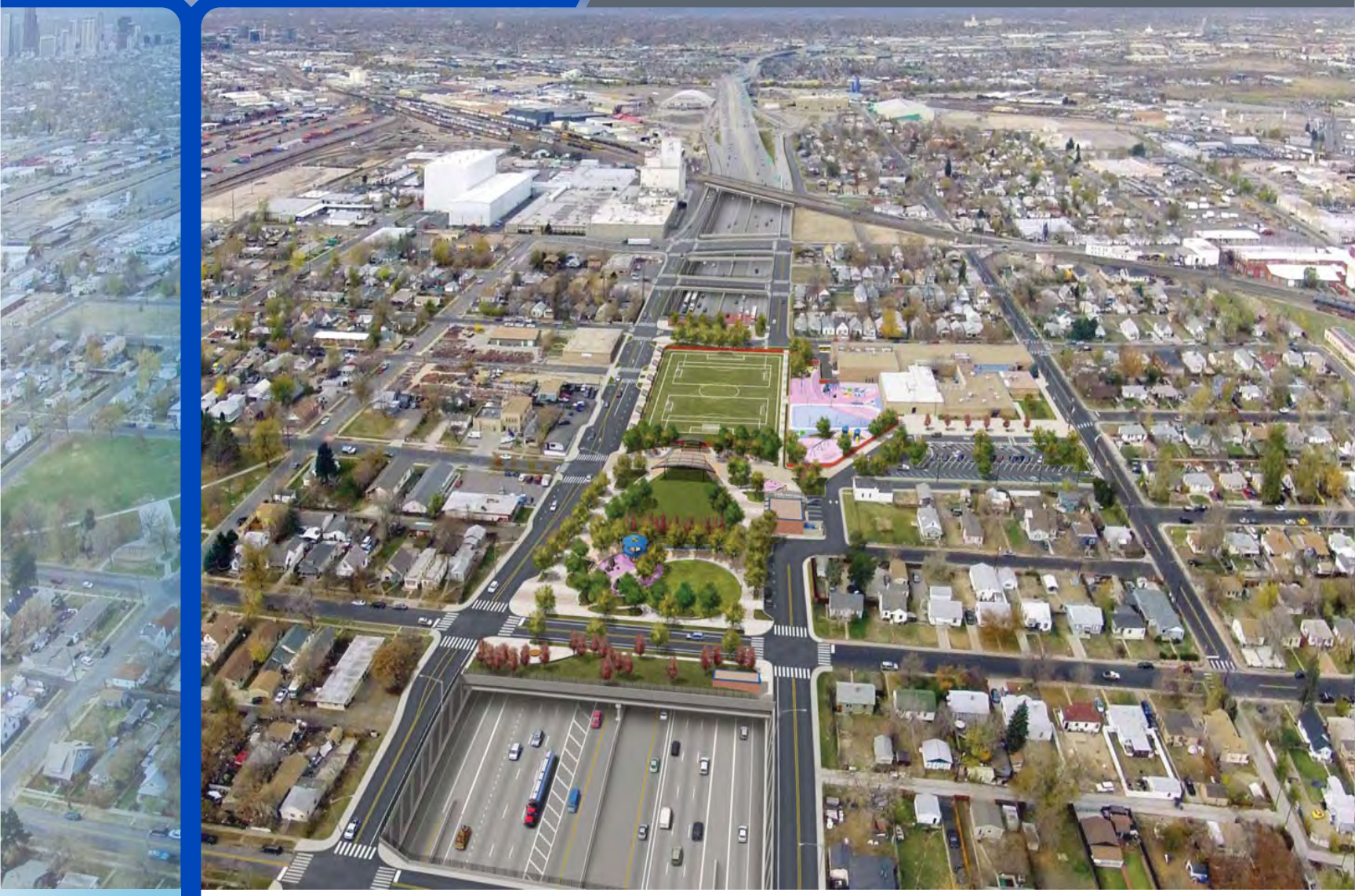
Central 70



I-70 EAST ROD 1:

Phase 1 (Central 70 Project)

January 2017

I-70 East

Decision

Based on the information contained in the *I-70 East Final Environmental Impact Statement and Section 4(f) Evaluation*, which is incorporated by reference here, and this Record of Decision, the Federal Highway Administration selects the Preferred Alternative, Phase 1 (also known as the Central 70 Project) for the I-70 East Project. The Federal Highway Administration finds that this alternative is in the best overall public interest, uses all practicable means to restore and enhance the quality of the human environment, and avoids or minimizes any possible adverse effects. Subsequent phases of the project, although analyzed in the Environmental Impact Statement, are not being authorized or acted upon at this time. Based on the considerations identified in the Section 4(f) Evaluation, the Federal Highway Administration also concludes that there are no feasible and prudent alternatives to the use of Section 4(f) protected lands and that the proposed action includes all possible planning to minimize harm to the identified Section 4(f) properties resulting from such use. The Federal Highway Administration has reviewed and considered all comments received on the project during the review period after the Notice of Availability of the Final Environmental Impact Statement appeared in the *Federal Register*.

John M. Cater, P.E.
Division Administrator, Colorado Division
Federal Highway Administration

1-19-2017
Date

STATUTE OF LIMITATIONS

The Federal Highway Administration may publish a notice in the *Federal Register*, pursuant to 23 United States Code (USC) Section 139(l), when the Record of Decision is approved. If such notice is published, a claim arising under federal law seeking judicial review of a permit, license, or approval issued by a federal agency for a highway or public transportation capital project shall be barred unless it is filed within 150 days after publication of a notice in the *Federal Register* announcing that the permit, license, or approval is final pursuant to the law under which judicial review 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.

INFORMATION AVAILABILITY

The following individuals may be contacted for additional information regarding the I-70 East Record of Decision 1: Phase 1 (Central 70 Project):

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Federal Highway Administration
12300 West Dakota Avenue, Suite 180
Lakewood, CO 80228
720-963-3017

Anthony R. DeVito, P.E.
Colorado Department of Transportation
2000 South Holly Street, I-70 East Project Office
Denver, CO 80222
303-512-5900

ENVIRONMENTAL IMPACT STATEMENT AVAILABILITY

The Draft, Supplemental Draft, and Final Environmental Impact Statements of the I-70 East Project, along with the Record of Decision for the Central 70 Project, are available on the project website for review and download at www.i-70east.com.

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Acronyms and Abbreviations

A	
ACM	Asbestos-containing material
ADA	Americans with Disabilities Act
AM	Morning peak period
APCD	Air Pollution Control Division
APE	Area of Potential Effect
AST	Above ground storage tank
ATM	Active Traffic Management
B	
BMP	Best Management Practice
BNSF	Burlington Northern Santa Fe
Btu	British Thermal Unit
C	
CAA	Clean Air Act
CDOT	Colorado Department of Transportation
CDPHE	Colorado Department of Public Health and Environment
CDPS	Colorado Discharge Permit System
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CMAQ	Congestion Mitigation Air Quality
CPW	Colorado Parks and Wildlife
CRHDC	Community Resources and Housing Development Corporation
CWA	Clean Water Act
D	
dB	Decibel
dBA	A-weighted decibel
Denver	City and County of Denver
DPS	Denver Public Schools
Draft EIS	Draft Environmental Impact Statement
DRCOG	Denver Regional Council of Governments
DRIR	Denver Rock Island Railroad
DSRC	Dedicated Short-Range Communications
DSS	Decent, safe, and sanitary

Acronyms and Abbreviations

E	
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ETC	Electronic Tolling Collection
F	
FAST Act	Fixing America's Surface Transportation Act
FASTER	Funding Advancement for Surface Transportation and Economic Recovery Act
FEMA	Federal Emergency Management Agency
Final EIS	Final Environmental Impact Statement
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
G	
GES	Globeville/Elyria-Swansea
GLO	Globeville Landing Park Outfall
GHG	Greenhouse gases
H	
HPTE	High Performance Transportation Enterprise
HVAC	Heating, ventilation, and air conditioning system
I	
I-25	Interstate 25
I-70	Interstate 70
I-225	Interstate 225
I-270	Interstate 270
IGA	Intergovernmental Agreement
ITS	Intelligent Transportation System
L	
LOS	Level of service
LUST	Leaking underground storage tank
LWCF	Land and Water Conservation Fund

Acronyms and Abbreviations

M	
MATT	Multi-Agency Technical Team
MOVES	Motor Vehicle Emissions Simulator modeling software
MS4	Municipal Separate Storm Sewer System
MSAT	Mobile Source Air Toxic
MVRTP	Metro Vision Regional Transportation Plan
µg/m^3	Microgram per cubic meter

N	
NAAQS	National Ambient Air Quality Standards
NAC	Noise Abatement Criteria
NEPA	National Environmental Policy Act
NFRAP	No further remedial action planned
NOI	Notice of Intent
NPS	National Park Service
NRHP	National Register of Historic Places
NWT	Northwestern Terminal

P	
P2P	Platte to Park Hill Stormwater Systems Project
PA	Programmatic Agreement
PACT	Preferred Alternative Collaborative Team
PM	Evening peak period
PMJM	Preble's meadow jumping mouse
$PM_{2.5}$	Particulate matter less than 2.5 microns in size
PM_{10}	Particulate matter less than 10 microns in size
ppm	Parts per million

R	
RCRA	Resource Conservation and Recovery Act
RFP	Request for Proposal
ROD	Record of Decision
ROW	Right of way
RTD	Regional Transportation District
RTP	Regional Transportation Plan

Acronyms and Abbreviations

S	
SEP-14	Special Experiment Project 14
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
STIP	Statewide Transportation Improvement Program
STP-Metro	Surface Treatment Program-Metro
Supplemental Draft EIS	Supplemental Draft Environmental Impact Statement
SWL	Solid waste landfill

T	
TBDP	Two Basins Drainage Project
TDM	Transportation Demand Management
TIP	Transportation Improvement Program
TSS	Total suspended solids

U	
UDFCD	Urban Drainage and Flood Control District
Uniform Act	Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970
UPRR	Union Pacific Railroad
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service
UST	Underground storage tank

V	
VCRA	Voluntary Clean-Up and Redevelopment Act
VMT	Vehicle miles traveled
vpd	Vehicles per day

W	
WQCD	Water Quality Control Division

Chapter 1 Introduction

The Federal Highway Administration (FHWA) published a Notice of Intent (NOI) in the *Federal Register* (August 19, 2003) to prepare an Environmental Impact Statement (EIS) as a joint highway and transit project. In June 2006, it was determined that the highway and transit elements serve different travel markets, are located in different corridors, and have different funding sources. At this point, the highway and transit components of the analysis were separated and a new NOI was issued on June 30, 2006. This was done in accordance with the Council on Environmental Quality (CEQ) and FHWA regulations. This Interstate 70 (I-70) Record of Decision (ROD) 1 for the Central 70 Project has been prepared in compliance with 23 Code of Federal Regulations (CFR) §771 and 23 CFR §774, 40 CFR §§1500–1508, and the requirements of the National Environmental Policy Act (NEPA), as amended.

I-70 East Project vs. the Central 70 Project

The I-70 East Project studied and analyzed multiple alternatives through the NEPA process and identified the Partial Cover Lowered Alternative with Managed Lanes Option as the Preferred Alternative. For more information about the Preferred Alternative, see Section 2.2.

This ROD selects the portion of the I-70 East Project, also known as the Central 70 Project, which was introduced as Phase 1 of the identified Preferred Alternative in the Final EIS, for implementation. The Central 70 Project has independent utility and logical termini and can operate as a standalone project. For information regarding the Central 70 Project, see Chapter 4 of this document.

As the I-70 East Project moves through the procurement and developer team selection process, it will be known as the Central 70 Project.

In November 2008, FHWA and the Colorado Department of Transportation (CDOT) published the *I-70 East Draft Environmental Impact Statement and Section 4(f) Evaluation*. There was no preferred alternative discussed in the Draft EIS.

Because of the lack of support for project alternatives presented in the Draft EIS, CDOT initiated a rigorous collaboration process to recommend a preferred alternative. This collaboration process, subsequently named the Preferred Alternative Collaborative Team (PACT), consisted of federal, state, and local agencies; advocacy groups; and stakeholders, including neighborhood representatives. After approximately one year of collaboration and additional analysis, the PACT members were not able to reach consensus on a preferred alternative but did reach consensus on keeping I-70 on its existing alignment and eliminating the realignment alternative. Consequently, CDOT and FHWA decided to review prior decisions in the process, including the previously eliminated alternatives.

In August 2014, FHWA and CDOT published the *I-70 East Supplemental Draft EIS and Section 4(f) Evaluation*, which included reevaluation of the previously eliminated

alternatives. This effort led to the introduction of a new alternative (the Partial Cover Lowered Alternative), updated the analysis and mitigation measures, and preliminarily identified the Partial Cover Lowered Alternative as the Preferred Alternative.

In January 2016, FHWA and CDOT published the *I-70 East Final Environmental Impact Statement and Section 4(f) Evaluation*. The Partial Cover Lowered Alternative with Managed Lanes Option was identified as the Preferred Alternative in the Final EIS, which also included the evaluation of alternatives and the benefits and impacts to natural and community resources associated with each alternative. The Final EIS is incorporated into this ROD by reference. Information about the availability of the Final EIS is included at the front of this document. The Final EIS described the decision-making process and summarized the analysis for identifying the alternatives considered for the Final EIS, their associated impacts, proposed mitigation, and ability to meet the project's purpose and need. *Attachment Q, Supplemental Draft EIS Comments and Responses* of the Final EIS also included all comments received on the Supplemental Draft EIS provided by the public and agencies and FHWA's and CDOT's responses to those comments.

1.1 Final EIS Preferred Alternative and Multiple ROD Approach

The Preferred Alternative for the I-70 East Project, as identified in the Final EIS, is the Partial Cover Lowered Alternative with Managed Lanes Option, and includes restriping, reconstruction, and/or widening of I-70 from Interstate 25 (I-25) to Tower Road (see Section 2.2 for more detail).

The identification of a preferred alternative for the entire project in the Final EIS is consistent with FHWA's objective of analyzing and selecting transportation solutions to avoid segmentation. The selection to implement the Central 70 Project in this ROD is consistent with the 2008 FHWA guidance, *Transportation Planning Requirements and Their Relationship to NEPA Process Completion* (along with the February 2011 supplement) to have funding for projects identified before final decisions are made. Because funding for the entire project had not been identified at the time the Final EIS was published, FHWA and CDOT planned for phased implementation of the project and the use of a multiple ROD approach.

As outlined in the Final EIS, it is the intent of FHWA and CDOT to implement the Preferred Alternative in its entirety. However, due to current funding limitations, only Phase 1 of the Preferred Alternative, which is herein referred to as the Central 70 Project, will be selected with the approval of this ROD. The Central 70 Project is a standalone

project with independent utility and logical termini that includes improvements between I-25 and Chambers Road (see Chapter 4, Central 70 Project, of this document for more information).

This ROD is the final step in the NEPA process for the Central 70 Project. Phases that will be necessary to complete implementation of the entire Preferred Alternative but are not included in this ROD may be identified in future RODs, which will be prepared as funding is identified in the Denver Regional Council of Governments (DRCOG) Fiscally Constrained Regional Transportation Plan (RTP). Implementation of future phases may not occur if funding beyond the initial phase cannot be identified.

The timing to implement future phases will be determined through the statewide planning and programming process, which is carried out by CDOT in accordance with 23 CFR §450. Under those regulations, a project that involves federal funding can be implemented only if it is included in the Statewide Transportation Improvement Program (STIP). Additional funding for the future phases also will need to be identified in the DRCOG Fiscally Constrained RTP. The following general considerations will be taken into account when determining the scope of future phases:

- CDOT will consider available funding and the need to balance the construction of improvements throughout the corridor.
- Future phases will have independent utility in that each element would provide transportation benefits, be a reasonable expenditure even if no additional improvements are made in the area, and have logical termini.

When the future phases have been determined, identified in the RTP, and funded, the future RODs will identify impacts and appropriate mitigation measures that are associated with those actions.

1.2 Purpose and Need

The purpose of the I-70 East Project is to implement a transportation solution that improves safety, access, and mobility and addresses congestion on I-70 in the project area.

The need for this project results from the following issues:

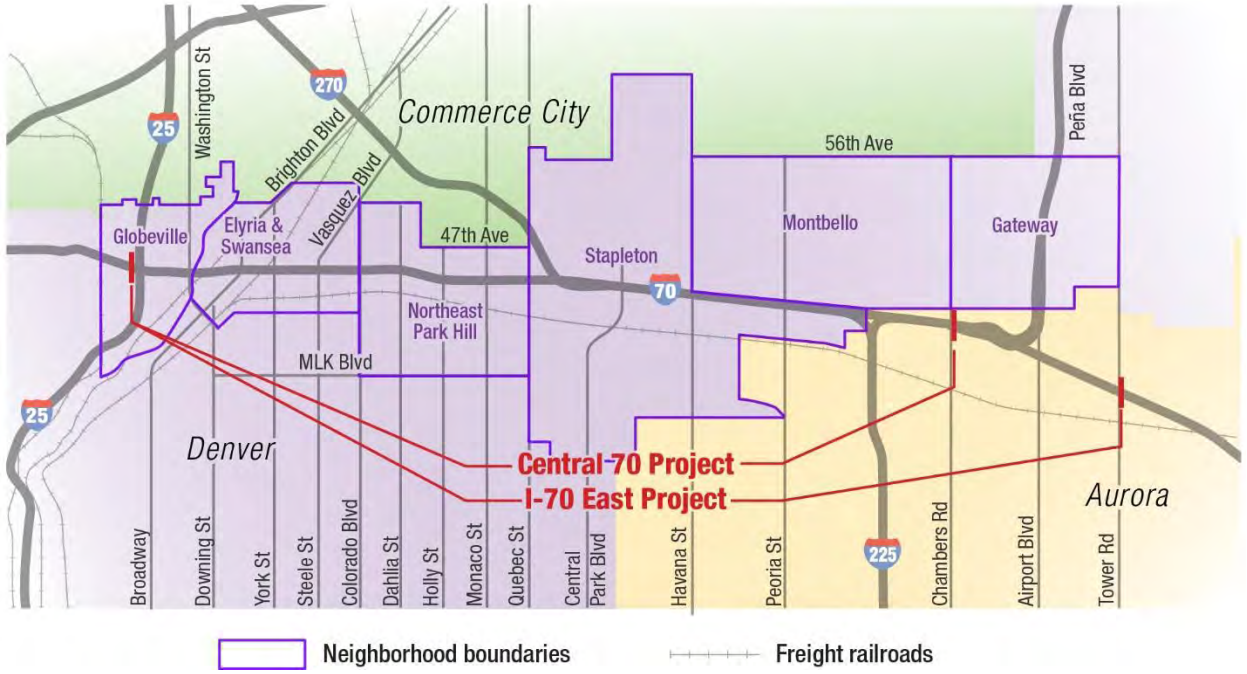
- Transportation infrastructure deficiencies
- Increased transportation demand
- Limited transportation capacity
- Safety concerns

For more information related to the factors supporting the needs, see *Chapter 2, Purpose and Need,* of the Final EIS. The Central 70 Project selected by this ROD contributes to addressing elements of the I-70 East Project's purpose and need, as discussed in Chapter 4, Central 70 Project, of this document.

1.3 Project Limits

The I-70 East Project extends almost 12 miles along I-70 between I-25 and Tower Road through the neighborhoods of Globeville, Elyria and Swansea, Northeast Park Hill, Stapleton, Montbello, Gateway, and a portion of Aurora. The limits for the Central 70 Project extend approximately 9.5 miles along I-70 between I-25 and Chambers Road (see **Exhibit 1**).

Exhibit 1 I-70 East Project and Central 70 Project Limits



Existing and forecasted traffic volumes were the main factor in determining the project limits for the I-70 East Project. Forecasted traffic volumes for the year 2035 range from 95,000 vehicles per day (vpd) to 270,000 vpd between I-25 and Peña Boulevard, declining east of there. The western limit is I-25 because of the high diversion of traffic from I-70 to both northbound and southbound I-25. Between 40 percent and 50 percent of traffic traveling westbound on I-70 diverts onto I-25. Tower Road is the eastern limit because the traffic volumes drop substantially east of Peña Boulevard. These limits do not preclude other NEPA transportation improvement studies outside the corridor (DRCOG, 2013).

The project limits and logical termini for the Central 70 Project are discussed in Section 4.3 of this document.

1.4 Compliance with 23 USC 109(h)

The environmental review process carried out for the I-70 East Project followed the procedures set forth in 23 CFR §771, which serves to comply with 23 USC §109(h). The process of developing the EIS in accordance with these procedures assured that possible adverse economic, social, and environmental effects related to the I-70 East Project were

fully considered. It ensures that the final decision on the project is made in the best overall public interest and the interest of economically disadvantaged communities, taking into consideration the need for fast, safe, and efficient transportation and public services, and the costs of eliminating or minimizing such adverse effects.

It also assures consideration of the following:

- Air, noise, and water pollution
- Destruction or disruption of man-made and natural resources, aesthetic values, community cohesion, and the availability of public facilities and services
- Adverse employment effects, and tax and property value losses
- Injurious displacement of people, businesses, and farms
- Disruption of desirable community and regional growth

1.5 Document Organization

This document is designed to provide readers with a complete record of the environmental process followed to arrive at FHWA's decision to select Phase 1 of the Preferred Alternative (the Central 70 Project) as the project for implementation at this time. This ROD:

- Provides background information on the EIS process for the I-70 East Project as it has evolved during the past 13 years,
- Discusses FHWA's decision to implement the Central 70 Project,
- Responds to overarching concerns raised by the substantive comments that were received on the Final EIS, and
- Presents updates to the analysis and text of the Final EIS and to the Section 4(f) evaluation.

It is comprised of 11 chapters and six attachments that support the information and updates presented. The chapters of this ROD are as follows:

- Chapter 1: Introduction
- Chapter 2: Alternatives Considered
- Chapter 3: Measures to Minimize Harm
- Chapter 4: Central 70 Project
- Chapter 5: Central 70 Mitigation Measures
- Chapter 6: Federal, State, and Local Permits and Approvals
- Chapter 7: Community Outreach and Agency Involvement
- Chapter 8: Comments on the Final EIS and Air Quality Documents
- Chapter 9: Updates and Clarifications since the Publication of the Final EIS

- Chapter 10: Section 4(f) Evaluation Updates
- Chapter 11: References

The attachments to this document are as follows:

- Attachment A: Alternatives Maps
- Attachment B: Updates to Agency Consultation Addendum
- Attachment C: Technical Reports and Addenda
  - C1. Revised Elimination of I-270/I-76 Reroute Alternative Technical Memorandum
  - C2. Updates to Traffic Technical Report Addendum
  - C3. Updates to Conceptual Stage Relocations Technical Report Addendum
  - C4. Updates to Hazardous Materials Technical Report Addendum
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  - C7. Air Quality Conformity Technical Report
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  - C9. Updates to Biological Assessment Addendum
  - C10. Updates to Hydraulics and Hydrology Technical Report Addendum
  - C11. Updates to Wetlands and Other Waters of the U.S. Technical Report Addendum
  - C12. Revised Wetland Finding
- Attachment D: Section 106 Programmatic Agreement
- Attachment E: Comments on the Final EIS
- Attachment F: Comments on the Air Quality Documents

Chapter 2 Alternatives Considered

This chapter provides a summary of the alternatives that were fully analyzed in the 2008 Draft EIS and 2014 Supplemental Draft EIS. It also includes details on the Preferred Alternative identified in the Final EIS and the project's funding scenarios.

To meet the project's purpose and need, as described in Section 1.2 of this document, more than 90 alternatives were considered initially. The project's purpose, need, goals, and objectives were used to develop screening criteria to evaluate the alternatives in the 2008 Draft EIS. Due to the complexity of the project and a large number of initial alternatives, a four-level screening process was used to filter the full range of alternatives considered to the set of reasonable alternatives that were fully evaluated in the 2008 Draft EIS.

The four-level screening process resulted in the following reasonable Build Alternatives that were evaluated in addition to the No-Action Alternative:

- Alternative 1—Existing Alignment with general-purpose lanes
- Alternative 3—Existing Alignment with tolled express lanes
- Alternative 4—Realignment with general-purpose lanes
- Alternative 6—Realignment with tolled express lanes

For more information on the project's goals and objectives and screening criteria, see *Chapter 3, Summary of Project Alternatives*, of the Final EIS.

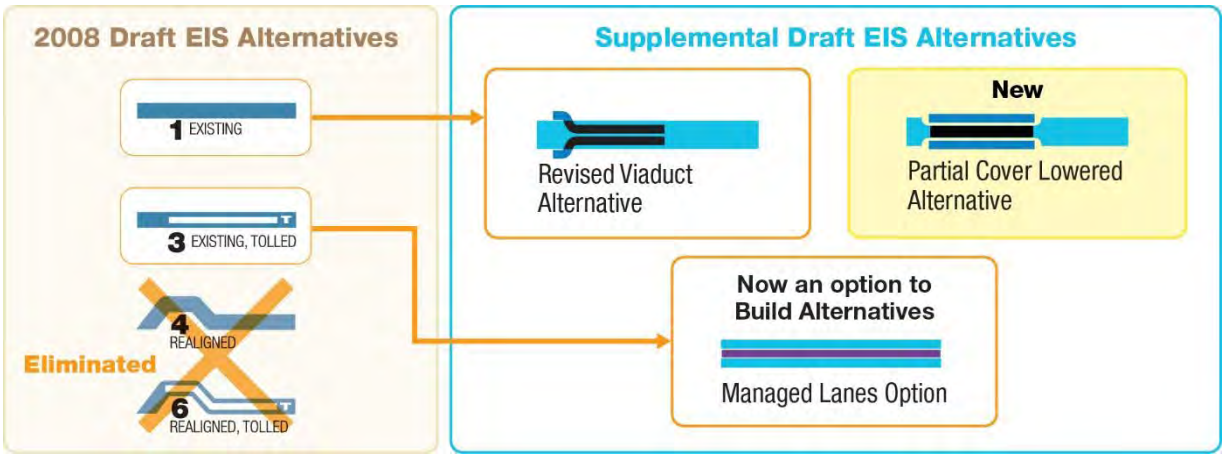
After the comment period for the 2008 Draft EIS ended, none of the evaluated alternatives had received overwhelming public support, meaning the comments did not help to determine a clear choice of the best alternative for the neighboring areas and corridor travelers. This prompted CDOT and FHWA to undertake a more comprehensive public involvement process to better identify the needs of the local communities and other stakeholders.

A collaborative process, called the PACT, was initiated and involved the public, businesses, and agency stakeholders. Many one-on-one meetings with the impacted community members and elected officials were included in this collaborative process. The PACT members were not able to reach consensus on a preferred alternative, but they did reach consensus on keeping I-70 on its existing alignment and eliminating the realignment alternatives. CDOT and FHWA then revisited and reexamined the 2008 Draft EIS analysis to modify and enhance the alternatives while addressing public comments and continuing to meet the project's purpose and need. This resulted in preparation of the Supplemental Draft EIS, which was released in 2014.

As part of the Supplemental Draft EIS, based on the 2008 Draft EIS public comments, the PACT process, and additional outreach, numerous changes were made to the alternatives,

including revising the Existing Alignment Alternatives (Alternatives 1 and 3) to reduce impacts, eliminating the Realignment Alternatives (Alternatives 4 and 6) from further consideration, and introducing a new alternative (the Partial Cover Lowered Alternative). Additionally, for the purpose of clarity, the name of the Existing Alignment Alternative was changed to the Revised Viaduct Alternative and the alternatives with tolling elements were changed to include a Managed Lanes Option. **Exhibit 2** shows the changes to the alternatives from the 2008 Draft EIS to the 2014 Supplemental Draft EIS (see *Section 3.3* of the Supplemental Draft EIS for more information).

Exhibit 2 Alternative Modification from the 2008 Draft EIS to the Supplemental Draft EIS



The Supplemental Draft EIS evaluated the following alternatives:

- No-Action Alternative
- Revised Viaduct Alternative
- Partial Cover Lowered Alternative

Each of these alternatives also included design and operational options. The No-Action Alternative and the Revised Viaduct Alternative included North and South Expansion Options. With the North Option, the highway would expand northward to accommodate the additional width of the highway; with the South Option, the highway would expand southward. The Build Alternatives (Revised Viaduct Alternative and Partial Cover Lowered Alternative) included Operational Options (General-Purpose Lanes or Managed Lanes) to provide a reliable, congestion-free option along the highway. Additionally, the Partial Cover Lowered Alternative included Connectivity Options (Basic and Modified) and included different configurations for interchanges and surface streets.

2.1 Alternatives Evaluated in the Final EIS

As a result of the comments received on the Supplemental Draft EIS and additional stakeholder outreach and agency coordination, the Partial Cover Lowered Alternative was refined in the Final EIS to include elements of both the Basic Option and the Modified Option as they were analyzed in the Supplemental Draft EIS. The Final EIS–refined Partial Cover Lowered Alternative maintains interchange access to I-70 at Steele Street/Vasquez Boulevard, as included in the Basic Option, in addition to including the 46th Avenue and local street connectivity improvements and access to I-70 at Colorado Boulevard from the Modified Option. The Revised Viaduct Alternative remained the same in the Final EIS as described in the Supplemental Draft EIS.

Proposed drainage

The No-Action, Revised Viaduct, and Partial Cover Lowered Alternatives include drainage improvements on the north side of I-70 to capture and convey the onsite water runoff from the highway's impervious (paved) area.

The Partial Cover Lowered Alternative also includes an offsite drainage system south of I-70 to capture surface water before it enters the lowered section of the highway

The alternatives that were fully evaluated in the Final EIS include the No-Action Alternative and two Build Alternatives (the Revised Viaduct Alternative and the Partial Cover Lowered Alternative). All of these alternatives include a drainage component.

Capital cost estimates for the alternatives are based on conceptual design and include construction management, construction engineering, indirect costs, and construction costs. The construction costs include earthwork, utility relocation, roadway and structure construction, and right of way. **Exhibit 3** summarizes the preliminary capital cost estimates for the project alternatives.

Exhibit 3 Project Alternatives Capital Cost Summary

Alternatives/Options	Capital Cost, I-25 to Tower Road (in millions of 2016 dollars)	
	General-Purpose Lanes Option	Managed Lanes Option
No-Action Alternative, North Option	$510	N/A
No-Action Alternative, South Option	$600	N/A
Revised Viaduct Alternative, North Option	$1,330	$1,450
Revised Viaduct Alternative, South Option	$1,450	$1,570
Partial Cover Lowered Alternative	$1,580	$1,700

2.1.1 No-Action Alternative

The No-Action Alternative includes existing, planned, and programmed roadway and transit improvements in the project area, as defined by the DRCOG *2035 Metro Vision*

Regional Transportation Plan (MVRTP) (DRCOG, 2015b). Because of the deteriorating condition of the existing I-70 viaduct between Brighton Boulevard and Colorado Boulevard, the No-Action Alternative for this project includes a total replacement of the viaduct. This replacement is necessary to maintain safe operation of I-70. There are no improvements proposed between I-25 and Brighton Boulevard or between Colorado Boulevard and Tower Road.

Reconstruction of the existing viaduct in the No-Action Alternative requires additional right of way to maintain traffic flow on I-70 during construction and to rebuild the viaduct in line with current highway design standards. The existing width of the highway bridge from Brighton Boulevard to Colorado Boulevard (three lanes in each direction, six lanes total) is approximately 85 feet. The reconstructed bridge increases the width to 140 feet. This increase in width is due to construction phasing, which will be required to maintain the traffic flow during construction, and adding standard shoulder and lane widths, which are larger than the existing widths. No additional travel lanes will be added.

There are two options for the No-Action Alternative. The North Option pushes the north edge of the highway approximately 70 feet north of the existing viaduct, while the South Option pushes the south edge of the highway 60 feet south.

2.1.2 Build Alternatives

The Build Alternatives—the Revised Viaduct Alternative and the Partial Cover Lowered Alternative—include existing, planned, and programmed roadway and transit improvements in the project area, as defined by the DRCOG 2035 MVRTP. They also add capacity to I-70 from I-25 to Tower Road. Capacity is increased by restriping I-70 from I-25 to Brighton Boulevard and widening I-70 from Brighton Boulevard to Tower Road to accommodate additional lanes. The Build Alternatives range from a total of six lanes to 12 lanes, depending on the capacity needs along the corridor.

To address safety issues associated with the aging viaduct between Brighton Boulevard and Colorado Boulevard, the Revised Viaduct Alternative would replace the existing viaduct and the Partial Cover Lowered Alternative would remove it completely and lower the highway below the existing grade with a cover over the highway in the vicinity of Swansea Elementary School.

The Build Alternatives will be constructed up to current safety standards, including lane and shoulder widths and adequate auxiliary lanes. They also will modify most of the bridges and interchanges along the corridor between Brighton Boulevard and Tower Road.

As part of the Build Alternatives, 46th Avenue is redesigned and will continue to serve local traffic

Elimination of York Street interchange

Because of safety issues related to existing substandard conditions, the Build Alternatives eliminate the York Street interchange.

in the area. For the Revised Viaduct Alternative, 46th Avenue will run underneath the highway viaduct as a two-lane road with turn lanes to provide local east-west connectivity. For the Partial Cover Lowered Alternative, 46th Avenue is a one-way couplet between Brighton Boulevard and Josephine Street and between Milwaukee Street and Colorado Boulevard, with eastbound travel on the south side of I-70 and westbound travel on the north side of I-70. Between Josephine Street and Milwaukee Street, 46th Avenue has two-way operations on both sides of I-70.

Additionally, under the Partial Cover Lowered Alternative on the north side of I-70, 46th Avenue will be discontinued between Clayton Street and Columbine Street to allow for a seamless connection between the school and the highway cover facility. This alternative eliminates the portion of Elizabeth Street north of 46th Avenue and south of 47th Avenue.

For more details on the No-Action Alternative and Build Alternatives, please see *Chapter 3, Summary of Project Alternatives* and *Attachment C, Alternative Analysis,* both in the Final EIS.

Operational Options: General-Purpose Lanes or Managed Lanes

Two Operational Options were considered for the Build Alternatives to handle the added capacity: the General-Purpose Lanes Option and the Managed Lanes Option. General-purpose lanes are traffic lanes that do not apply any restrictions to the vehicles using them. Managed lanes implement pricing strategies that will be adjusted based on real-time traffic demand on the highway facility. This is accomplished by providing a specially managed travel lane for vehicles to avoid congestion and travel at a higher speed than the general-purpose lanes. The purpose is to provide a reliable, congestion-free option along the highway and provide a way to manage congestion over the long term to reduce the need for future expansion.

The Managed Lanes Option only includes operational strategies for the additional lanes, while keeping the rest as general-purpose lanes. The Managed Lanes Option and the General-Purpose Lanes Option are designed with the same width of approximately 197 feet between Brighton Boulevard and Colorado Boulevard. However, the shoulder widths will be decreased for managed lanes, compared to general-purpose lanes, because of the need for a four-foot buffer between managed and general-purpose lanes in each direction.

There are no additional construction impacts to the surrounding neighborhoods or environments between the two options except at the locations of direct connections. Provisions for access to economically disadvantaged communities are discussed in *Section 5.3, Environmental Justice* of the Final EIS. The construction limits for the Managed Lanes Option increases where there are direct connections from the managed lanes to interchanges. Three proposed direct connections are planned from the managed lanes to Interstate 270 (I-270), Interstate 225 (I-225), and Peña Boulevard to accommodate regional and airport traffic. These direct connections result in a shift of eastbound I-70 to create room for the connections.

2.2 Final EIS Preferred Alternative

The Partial Cover Lowered Alternative with Managed Lanes Option was identified as the Preferred Alternative in the Final EIS. The Preferred Alternative removes the existing I-70 viaduct between Brighton Boulevard and Colorado Boulevard and lowers the highway below grade in this area. It includes one to two additional lane(s) in each direction from Brighton Boulevard to Tower Road, which will be managed lanes. The existing highway between I-25 and Brighton Boulevard has enough width so that only restriping is necessary to fit the additional capacity.

The Managed Lanes Option is identified as the Operational Option of the Preferred Alternative because of its long-term operational flexibility and mobility. Managed lanes provide drivers with flexibility by allowing them to pay a fee to bypass congestion in the general-purpose lanes. This can improve reliability in travel times. It also allows CDOT to manage congestion over the long term, thereby reducing the need for future expansion. The Managed Lanes Option also has a higher through-put potential in terms of accommodating more people at a given time. This option accommodates express buses and other high-occupancy vehicles and, therefore, it can provide increased service to those riders.

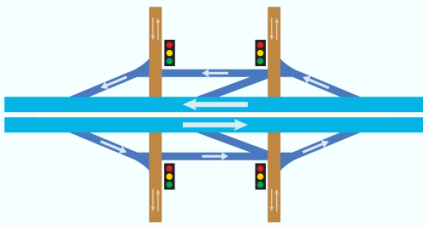
The highway starts descending west of Brighton Boulevard to a maximum depth of approximately 40 feet below the existing ground surface just east of the Union Pacific Railroad (UPRR). This depth is necessary to allow the lowered highway to cross below the existing UPRR railroad crossing. The remaining portion of the lowered section has an average depth of approximately 25 feet below grade. The lowered highway ascends just east of the Burlington Northern Santa Fe (BNSF) Denver Market Lead Railroad to reach the existing grade east of the Colorado Boulevard interchange.

The Preferred Alternative does not provide direct access from westbound I-70 to Steele Street/Vasquez Boulevard or from Steele Street/Vasquez Boulevard to eastbound I-70. Access at Steele Street/Vasquez Boulevard and Colorado Boulevard is provided by a split-diamond interchange. In addition, slip ramps are included to provide an eastbound off-ramp and westbound on-ramp at Colorado Boulevard.

An acceleration/deceleration lane is provided in each direction at the ramp junctions between Brighton Boulevard and Steele Street/Vasquez Boulevard to make it easier for vehicles to safely enter or exit between two facilities with different operational speeds.

Slip ramps

A slip ramp generally is located between a freeway mainline and an adjacent frontage road. These ramps allow motorists to "slip" from one roadway to the adjacent parallel roadway. The connection of the slip ramp and the parallel roadway typically is not an intersection, but just a merging zone.



These additional lanes—and space needed for 46th Avenue from Brighton Boulevard to Colorado Boulevard—result in a total width that is approximately three times greater than the existing highway width. **Exhibit 4** shows the total number of lanes and interchange reconstruction as part of the Preferred Alternative.

Exhibit 4 Preferred Alternative Lane Configuration and Interchange Reconstruction

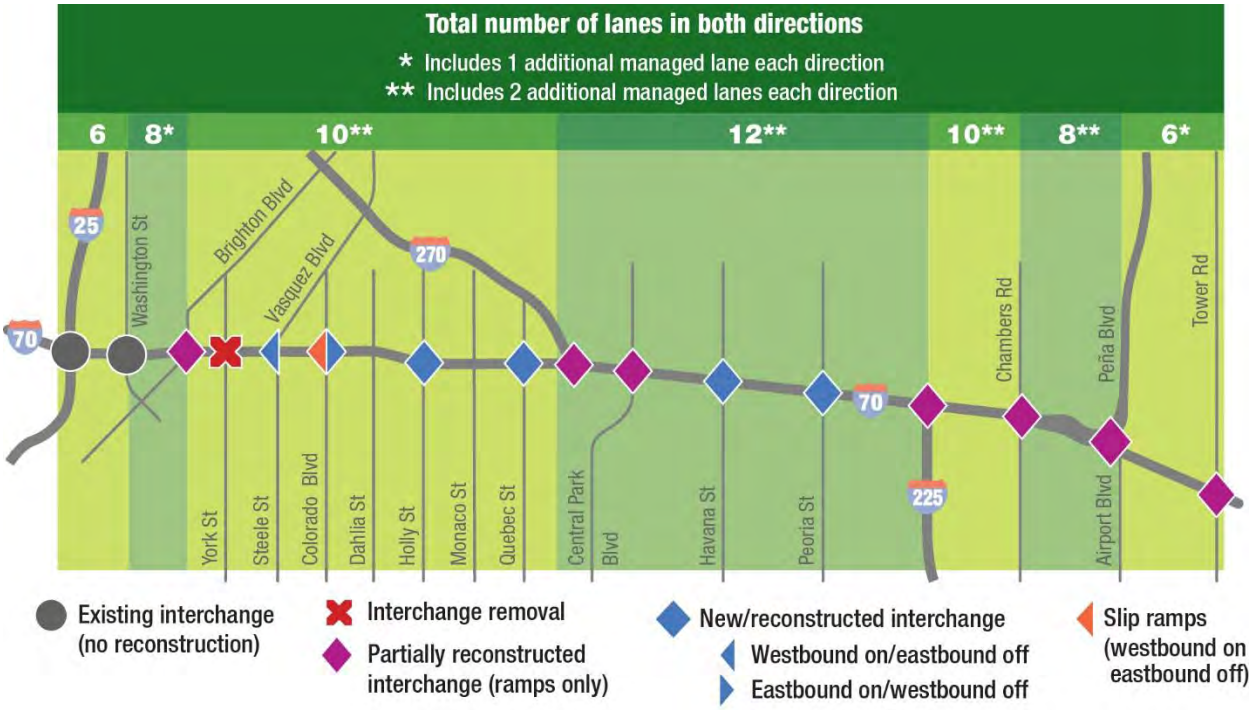
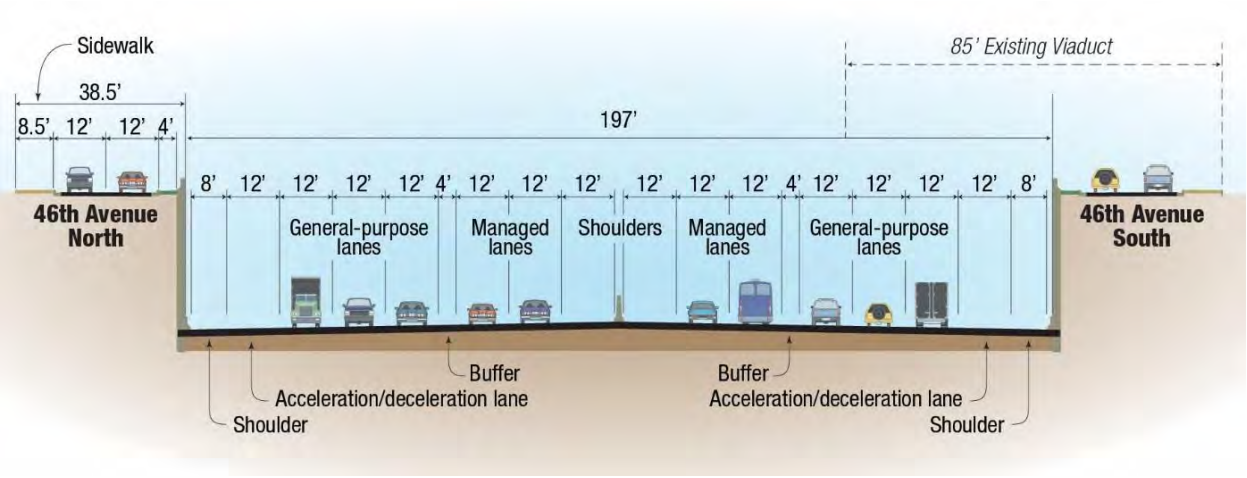


Exhibit 5 shows a typical section for the Preferred Alternative between Brighton Boulevard and Colorado Boulevard. The typical sections shown in these exhibits do not represent the configuration in the covered area of the highway.

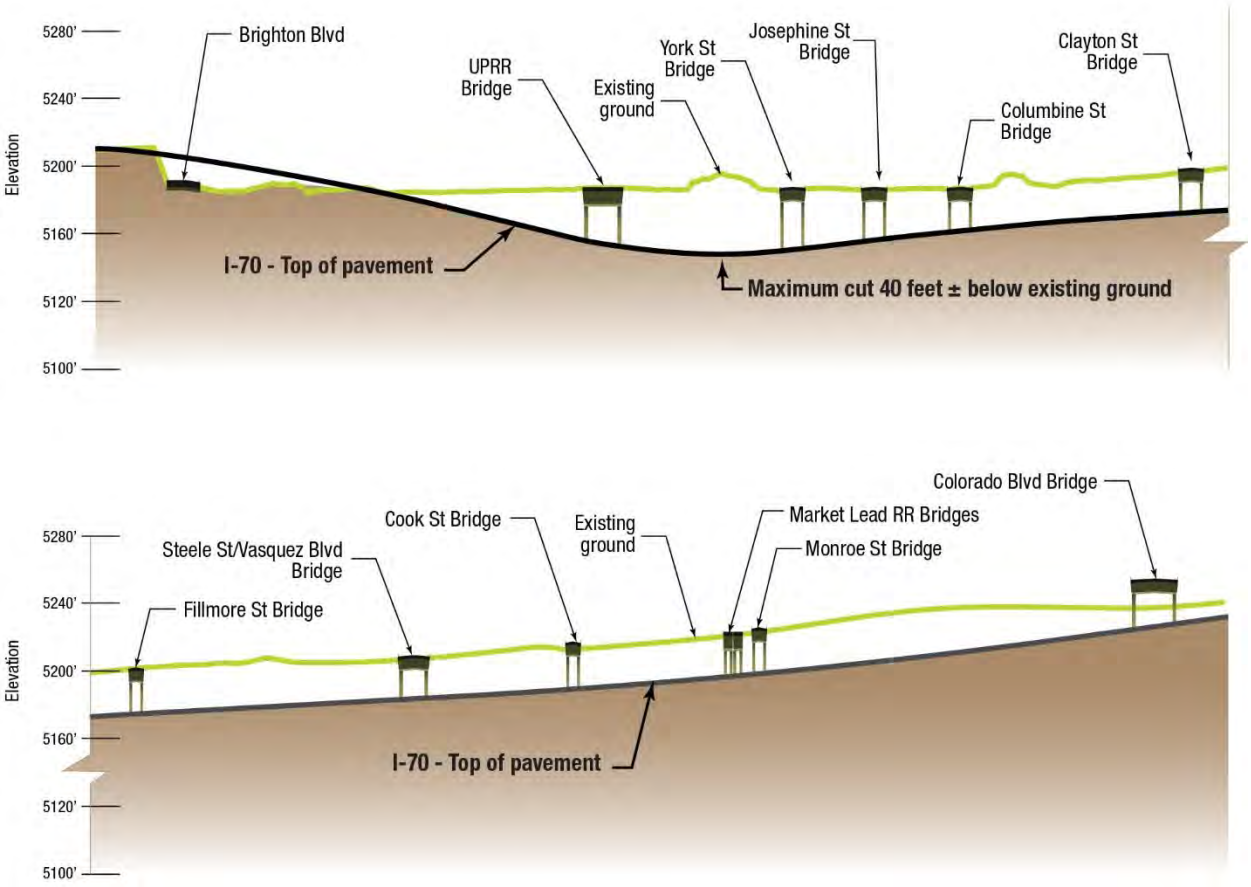
The Preferred Alternative continues to provide north-south connectivity at York Street, Josephine Street, Columbine Street, Clayton Street, Fillmore Street, and Steele Street/Vasquez Boulevard. It also provides additional north-south connectivity at Cook Street and Monroe Street over the lowered, reconstructed highway. **Exhibit 6** shows a profile view of the Partial Cover Lowered Alternative from Brighton Boulevard to Colorado Boulevard.

Exhibit 5 Preferred Alternative Typical Section (Between Brighton Boulevard and Colorado Boulevard)



Note: Shoulder widths may vary but will not exceed what is illustrated in this exhibit.

Exhibit 6 Partial Cover Lowered Alternative Profile View of the Lowered Section (Between Brighton Boulevard and Colorado Boulevard)



On the north side of I-70, 46th Avenue will be discontinued between Clayton Street and Columbine Street to allow for a seamless connection between Swansea Elementary School and the highway cover facility. This alternative eliminates the portion of Elizabeth Street north of 46th Avenue and south of 47th Avenue.

As part of the Preferred Alternative, the existing UPRR bridge structure that currently passes under the existing viaduct and over 46th Avenue will be reconstructed to allow both I-70 and 46th Avenue to cross below the UPRR. For the BNSF Market Lead Railroad, a new bridge crossing over I-70 and at-grade crossings at 46th Avenue will be provided.

46th Avenue extends across Colorado Boulevard and connects with the existing one-way couplet of Stapleton Drive North and Stapleton Drive South. These streets are extended to the east and connect to the Quebec Street ramps to allow for connectivity between Colorado Boulevard and Quebec Street.

The Preferred Alternative east of Colorado Boulevard includes:

- Removing the existing slip ramps at Dahlia Street and Monaco Street, respectively, and replacing them with a full interchange at Holly Street to avoid conflicts with the geometry of proposed ramp locations at Colorado Boulevard and Quebec Street, as well as to avoid traffic weaving issues
- Maintaining north-south connections at Dahlia Street, Holly Street, Monaco Street, Quebec Street, Central Park Boulevard, Havana Street, Peoria Street, Chambers Road, Airport Road, and Tower Road
- Replacing the I-270 eastbound to I-70 eastbound flyover structure to accommodate the widened highway
- Reconstructing the Quebec Street interchange to maintain the existing access
- Leaving the existing interchange accesses at Havana Street, Central Park Boulevard, Peoria Street, Chambers Road, Airport Boulevard, and Tower Road without modification or reconstruction
- Maintaining the existing highway crossing over the Denver Rock Island Railroad (DRIR) west of Quebec Street
- Including direct connections from the managed lanes to Peña Boulevard, I-225, and I-270

For more details on the Preferred Alternative, please see *Chapter 3, Summary of Project Alternatives* and *Attachment C, Alternative Analysis*, both in the Final EIS.

2.2.1 Highway Cover

The Preferred Alternative provides a cover over the highway, located between Clayton Street and Columbine Street in the proximity of Swansea Elementary School. The length of the cover is designed to be less than 1,000 feet due to fire and safety restrictions. A preliminary design for the highway cover is shown in **Exhibit 7**.

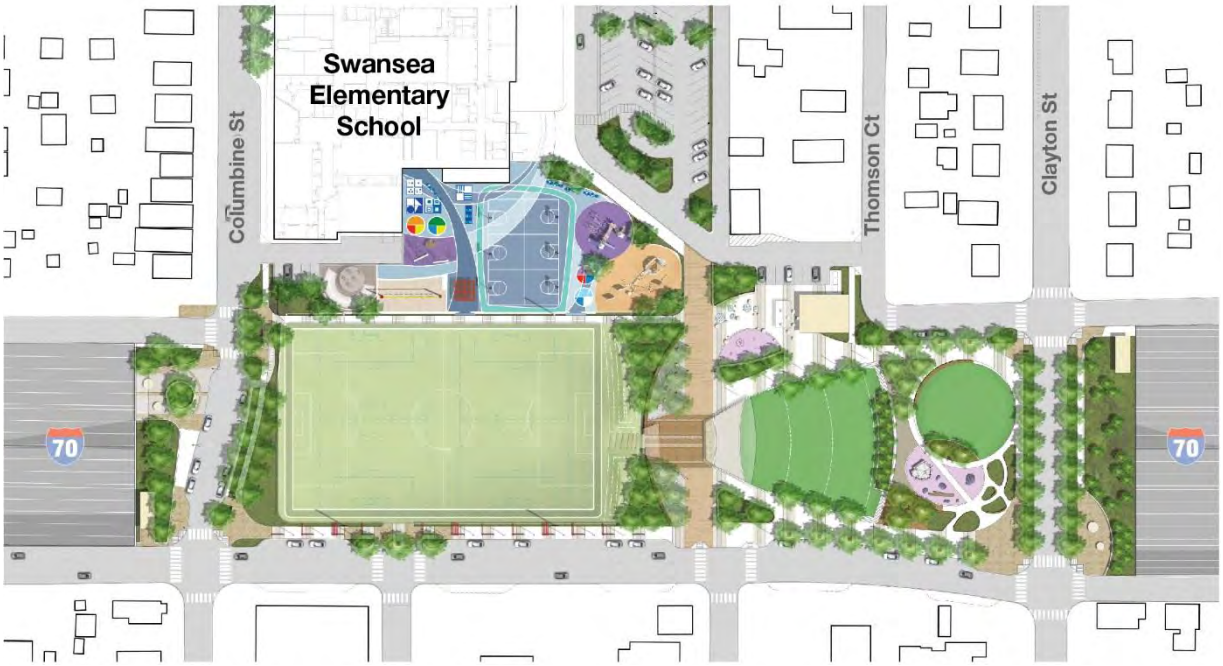
CDOT is working with the City and County of Denver (Denver) and Denver Public Schools (DPS) to develop agreements for shared use on the cover and long-term operations and maintenance of the cover. These agreements will be finalized before construction begins.

Highway cover

The cover is intended to be a shared, active space between the surrounding community and Swansea Elementary School. CDOT has worked with the community and the school to identify what amenities work best for the space.

Negotiations are ongoing between Denver and DPS to develop agreements for shared use on the cover and long-term operations and maintenance of the cover.

Exhibit 7 Preferred Alternative Preliminary Cover Design



Note: The design of the elements on the cover continues to evolve throughout the public input process.

As part of the Preferred Alternative, Elizabeth Street between 46th Avenue and 47th Avenue will be closed to accommodate the proposed redesign of the Swansea Elementary School site to use adjacent parcels.

The cover design includes an urban landscape to serve the community. Strategically placed landscape elements—such as trees and shrubs—are included only at designated locations to minimize the loading on the structure.

The cover is intended to be a shared, active space between the surrounding community and Swansea Elementary School. It is important to provide an active and safe space on the highway cover to maintain the status of the school as a community center in the neighborhood. The school playground is available to the community outside of school hours.

Second cover

To accommodate Denver's interest in constructing a second cover in the future, the Preferred Alternative and the Central 70 Project include an overall approach to design and construction that would not preclude the construction of a second cover over the highway from west of the Steele Street/Vasquez Boulevard highway crossing to east of Cook Street by others in the future.

This second cover is not included as part of the Preferred Alternative or the Central 70 Project.

The design of the cover will have a direct impact on the perception of safety and can influence an individual's willingness to use the space. While designing for safety (and incorporating elements such as lighting and Americans with Disabilities Act (ADA)-compliant facilities) the design also will meet the needs of its users, provide diverse and interesting features, and connect people with place.

The FHWA Livability and Sustainability Principles were utilized on this project during the development of the Preferred Alternative and the design of the highway cover. Incorporation of the highway cover will reconnect the surrounding areas and provide easy and safe connections between these communities for all users, especially pedestrians and bicyclists. The inclusion of the highway cover helps achieve some broader community goals of livability, quality schools, and safe streets.

The landscaped highway cover also supports social connections in the Elyria and Swansea Neighborhood by creating a place where residents and visitors can gather and interact. Based on community input and area needs, the amenities and design in these spaces—such as playgrounds or sports fields (to be determined by the community)—will encourage users to stay and interact.

2.3 Environmentally Preferable Alternative

FHWA and CDOT have identified the No-Action Alternative as the Environmentally Preferable Alternative for the I-70 East Project because it causes the least damage to the natural and physical environment.

The identification of the Environmentally Preferable Alternative may involve difficult judgments, particularly when one environmental value must be balanced against another.

To determine the Environmentally Preferable Alternative, all alternatives were compared to one another based on the benefits and impacts they will have to the resources analyzed in *Chapter 5, Affected Environment, Environmental Consequences, and Mitigation,* of the Final EIS.

Although it may seem to be the alternative with the least amount of environmental impacts, the No-Action Alternative does not meet the project's purpose and need. However, it will require fewer residential relocations, has fewer adverse impacts to historical properties, and creates less overall impact to Swansea Elementary School because of the smaller roadway footprint from fewer lanes and leaving 46th Avenue in its current location under the viaduct.

Environmentally Preferable Alternative

Per CEQ regulations (40 CFR §1505.2[b]), the agency is required to identify all alternatives considered in reaching the decision about a preferred alternative, including identifying an environmentally preferable alternative(s).

The Environmentally Preferable Alternative is the alternative that will promote national environmental policy as expressed in NEPA's Section 101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative that best protects, preserves, and enhances historic, cultural, and natural resources.

The No-Action Alternative impacts to the natural environment are much less compared to the Build Alternatives because the No-Action Alternative does not require any construction east of Colorado Boulevard (where most of the wetlands and natural habitats are located) and has a much smaller impervious (paved) surface.

The No-Action Alternative also will result in fewer temporary impacts to rail facilities. The new viaduct can be constructed over the existing railroad segments without disruption to freight service.

These are not the only differences between the No-Action Alternative and the Build Alternatives in regard to resource impacts; however, these are the major factors that ultimately led to the identification of the No-Action Alternative as the Environmentally Preferable Alternative.

2.4 Identification of the Preferred Alternative

Although the No-Action Alternative is the Environmentally Preferable Alternative, FHWA and CDOT have identified the Partial Cover Lowered Alternative with Managed Lanes Option as the Preferred Alternative for the I-70 East Project. This alternative has been identified because it meets the project purpose and need, addresses community and stakeholder concerns in the most comprehensive manner, has the most community and agency support as compared to the other alternatives under consideration, and—with the proposed mitigations—causes the least overall impact.

Many factors relating to the needs of the corridor were considered in identifying the Preferred Alternative. The deciding factors are listed below and are described in the following subsections.

- Support from the community
- Environmental justice mitigation measures
- Neighborhood cohesion
- Support from local officials
- Swansea Elementary School location
- Visual and aesthetic qualities
- Drainage

Support from the community

The project team used an extensive public involvement approach leading up to and following the release of the 2008 Draft EIS, 2014 Supplemental Draft EIS, and 2016 Final EIS. After introducing the Partial Cover Lowered Alternative in the Supplemental Draft EIS, the majority of the public who are directly impacted by the project and live within the project area have consistently expressed a preference for the Partial Cover Lowered Alternative compared to the other reasonable Build Alternative.

Environmental justice mitigation measures

All evaluated alternatives will result in impacts that include business and residential relocations, increase in noise, disturbing hazardous materials sites, and disruptions during construction. Environmental justice mitigation measures are proposed for each alternative; however, the Partial Cover Lowered Alternative includes additional mitigation measures to alleviate the highway impacts to the low-income and minority populations living in the project area.

The Preferred Alternative will include a highway cover with urban landscaping adjacent to Swansea Elementary School. The cover was developed as mitigation to reconnect the communities that were divided when the viaduct was built in the 1960s. The school property will be redesigned to reconstruct the school playground in a configuration to utilize the additional space from the cover and the adjacent portion of Elizabeth Street, which will be closed.

Chapter 9, Preferred Alternative Mitigation Commitments, of the Final EIS lists all the impacts and mitigation measures of the Preferred Alternative. Some of the mitigation measures and benefits unique to the Partial Cover Lowered Alternative include:

- Creating visual benefit by removing the viaduct's visual barrier between Brighton Boulevard and Colorado Boulevard

- Minimizing the presence of the highway in this area since it is below grade and is partially covered
- Reducing highway noise and air quality impacts to the school and adjacent properties by lowering the highway below grade and placing a partial cover over the highway
- Constructing a cover over the highway with an urban landscape area on top of the highway cover adjacent to Swansea Elementary School, providing for greater community cohesion than other alternatives
- Providing $2 million to support affordable housing in the Elyria and Swansea Neighborhood through available programs

Neighborhood cohesion

All evaluated alternatives will maintain connectivity in the project area, with minor modifications. They also will include bicycle and pedestrian enhancements throughout the area by adding/improving sidewalks and lighting in the neighborhoods. The Partial Cover Lowered Alternative maintains the existing local north-south street network. Additionally, Cook Street and Monroe Street currently do not provide connection across the highway, but are designed to provide connectivity across the highway for vehicles, bicyclists, and pedestrians under the Partial Cover Lowered Alternative. The Partial Cover Lowered Alternative also provides a greater sense of neighborhood cohesion by removing the dominant visual barrier created by the highway structure/viaduct in this neighborhood. The cover connects the Elyria and Swansea Neighborhood back together by providing a shared space for the community to gather.

Support from local officials

A letter supporting the Partial Cover Lowered Alternative was received on June 6, 2013, from Commissioner Eva Henry of Adams County, Mayor Michael Hancock of Denver, and Mayor Sean Ford of Commerce City. Their preference for this alternative is based on improved pedestrian connections and facilities that are part of the highway cover, as well as overall improvement to north-south and east-west movement in the corridor. A proclamation also was passed by the Denver City Council in support of the Partial Cover Lowered Alternative on April 7, 2014. Additionally, Mayor Michael Hancock has submitted multiple letters after publication of the Supplemental Draft EIS and Final EIS on behalf of Denver reiterating Denver's support of the Partial Cover Lowered Alternative.

Additional letters of support were received during the Final EIS public review period from the North Area Transportation Alliance, Commerce City, and Adams County.

Swansea Elementary School location

The Swansea Elementary School has been identified by the community as an important and valuable resource in the Elyria and Swansea Neighborhood. The Partial Cover Lowered Alternative provides the best solution compared to the other alternatives to keep the school

in the neighborhood, which was important to the community. The Partial Cover Lowered Alternative also redesigns and expands the school grounds and provides upgrades to the school building.

Visual and aesthetic qualities

The Partial Cover Lowered Alternative removes the viaduct and reconstructs the highway between Brighton Boulevard and Colorado Boulevard to a maximum depth of 40 feet below the existing ground level, while also adding capacity to the existing facility. Although this alternative increases the highway's total concrete surface similar to the Revised Viaduct Alternative, it does not increase the highway's visible mass to sensitive neighborhood viewers because a large portion of the highway in this area is below ground level and out of sight from surrounding communities.

Noise walls or safety barriers of 10 feet to 20 feet in height will be included, which will provide an opportunity for inclusion of artwork in the neighborhood. Noise walls or safety barriers will not be constructed in the area where the highway cover is located, providing an unobstructed north-south view across the highway for the residents of the Elyria and Swansea Neighborhood.

Drainage

With the Partial Cover Lowered Alternative, an extensive drainage system is required on the north and south sides of I-70. An onsite drainage system north of the highway is designed for all alternatives to capture and convey the onsite stormwater from the highway's impervious (paved) area and discharge it into the South Platte River. The Partial Cover Lowered Alternative indirectly improves drainage in the surrounding neighborhoods and will help reduce flooding incidents in the neighborhood north of the highway.

The drainage system south of I-70 with the Partial Cover Lowered Alternative is designed to collect offsite storm flows from south of the highway prior to entering the lowered section of the highway and discharge them to the South Platte River. Criteria for the 100-year event (a flood of such a magnitude that it has a 1-percent chance of happening in any given year) are being used for the design to intercept all offsite flows that would potentially reach the below-ground section of the Partial Cover Lowered Alternative. Applying these criteria ensures protection from large-event drainage flows entering the lowered roadway section.

The No-Action Alternative and the Revised Viaduct Alternative do not require a south offsite drainage system because the offsite flows under those alternatives will continue to flow under the highway.

2.5 Design Refinements to the Preferred Alternative

There have been minor adjustments and refinements to the project's design of the Preferred Alternative. The changes to the design resulted from public and agency comments on the Final EIS and continued evaluation of the Build Alternatives. This involved additional traffic analysis performed as part of the Interchange Access Request—namely, micro-simulation traffic analysis—and the advanced designs required for approvals related to local infrastructure and railroad coordination.

Interchange Access Request

An Interchange Access Request is submitted to FHWA for review and approval to make modifications to existing interchanges. A request usually includes detailed traffic analysis and how the improvements meet the eight "Considerations and Requirements" set forth in FHWA's policy.

These design refinements include, but are not limited to:

- Incorporating sign structures outside of the project's reconstruction limits leading drivers to the managed lanes
- Revising some intersection configurations to allow for better traffic operations
- Designing a new node building (building that houses the Electronic Tolling Collection (ETC) equipment and the Intelligent Transportation Systems (ITS) equipment on the east end of the project
- Installing ramp meters at entrance ramps from Washington Street, Brighton Boulevard, Vasquez Boulevard/Steele Street, Colorado Boulevard, Holly Street, and Quebec Street
- Installing new conduits east and west of the project limits to allow for fiber-optic connections to the Colorado Transportation Management Center
- Adding turn lanes on frontage roads and other surface streets
- Revising on- and off-ramps, railroad crossings, structures, and managed lane ingress/egress locations
- Revising the offsite drainage system

Additionally, the construction limits were expanded to the public right-of-way lines east of Quebec Street to better accommodate construction. These changes do not result in additional full right-of-way acquisitions or relocations and do not change the overall result of the analysis performed for any of the alternatives. The analyses of various resources have been updated since publication of the Final EIS to include the changes in the construction limits, and these changes are captured in this document in Chapter 9, Updates and Clarifications since the Publication of the Final EIS. *Attachment A, Alternatives Maps,* of this document provides a visual representation of the project alternatives, including the changes in the intersection configurations and construction limits.

2.6 Selection of the Central 70 Project

Although the Partial Cover Lowered Alternative was identified as the Preferred Alternative in the Final EIS, CDOT and FHWA select the Central 70 Project for construction at this time due to funding limitations. The Central 70 Project incorporates portions of the Preferred Alternative for the I-70 East Project. The remainder will be built as funding becomes available and if approved in a future ROD. See Chapter 4, Central 70 Project, of this document for more detail.

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Chapter 3 Measures to Minimize Harm

The Preferred Alternative was introduced originally as an alternative to reduce the visual presence of the viaduct in the neighborhoods, improve connectivity, and enhance safety. Removing the viaduct improves safety compared to the existing conditions by eliminating the possibility for objects to fall from the structure, removing the dark space under the viaduct, and eliminating the unsafe crossings as they currently exist under the viaduct.

Additional measures to reduce impacts to the surrounding properties and historic resources along the corridor include, but are not limited to:

- Using a 4-percent grade on I-70 will allow the highway to cross over Brighton Boulevard and under the UPRR Bridge without reconstruction of the existing infrastructure west of Brighton Boulevard; a lower grade would cause additional impacts to the infrastructure west of Brighton Boulevard
- Reducing the typical section for 46th Avenue and Stapleton Drive to the greatest extent possible by removing excess width between I-70 and the frontage roads
- Adjusting the I-70 mainline geometry using a lower design speed as compared to the 2008 Draft EIS to minimize the highway footprint between Brighton Boulevard and Colorado Boulevard
- Locating interchange ramps parallel to the I-70 mainline with walls to maintain adequate traffic operations while reducing impacts to the neighborhoods
- Using buffer-separated managed lanes rather than concrete barriers, because a concrete barrier requires additional shoulder width for both the general-purpose lanes and managed lanes, but the striped buffer only requires a four-foot space between the two lane groups.

All practicable means to avoid or minimize environmental harm from the project's Preferred Alternative have been adopted, and appropriate measures to mitigate any environmental harm caused by the Preferred Alternative have been identified. For a full list of mitigation measures associated with the Preferred Alternative, see *Chapter 9, Preferred Alternative Mitigation Commitments,* of the Final EIS.

Considering the comments received on the project alternatives, the project team has developed additional mitigation measures for environmental justice and historic resources beyond those required or normally provided in Colorado to lessen the adverse impacts in the project area. Any mitigation measures included in the ROD for the project must and will be completed (even if the project has funding issues as it is constructed). These impacts and the corresponding additional mitigation measures include, but are not limited to, the following:

- **Highway cover.** To reduce impacts to Swansea Elementary School, reconnect the Elyria and Swansea Neighborhood, and improve community cohesion, CDOT will

construct a cover over I-70, including an urban landscape on top with a base level of landscaping necessary to provide an active community space for surrounding residents and local neighborhoods, support social and pedestrian connections in the neighborhood, and provide additional space for the school.

- **Funding and financial counseling for displaced persons.** To alleviate impacts to displacees who have inadequate financial resources, CDOT has provided funding to the Community Resources and Housing Development Corporation (CRHDC). CRHDC will use these funds to assist residential and business displacees by providing financial counseling and helping them procure financing for replacement properties and secure business and residential loans. All displaced residents and businesses will, in addition, be entitled to benefits provided under the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act), as amended.
- **Interior storm windows and air conditioning.** To reduce impacts from dust and noise during construction, for homes between 45th Avenue and 47th Avenue from Brighton Boulevard to Colorado Boulevard, CDOT will provide:
  - Interior storm windows
  - Furnace filters
  - Two portable or window-mounted air conditioning units with air filtration and assistance to pay for the additional utility costs during construction
- **$2 million for low-income housing.** To offset loss of residential units in the Elyria and Swansea Neighborhood, CDOT will provide $2 million through available programs to support affordable housing in the Elyria and Swansea Neighborhood.
- **$100,000 to facilitate access to fresh food.** To alleviate impacts caused by relocating two convenience stores in the Elyria and Swansea Neighborhood, CDOT will provide $100,000 toward the Denver Office of Economic Development's Globeville/Elyria-Swansea (GES) Healthy Food Challenge that will help facilitate access to fresh food (https://www.denvergov.org/content/denvergov/en/denver-office-of-economic-development/funding-opportunities.html).
- **Addressing equity impacts of access to the tolled express lanes.** As described in the Final EIS, the financial burden of the tolled express lanes affecting the residents of Globeville, Elyria, and Swansea have led CDOT to the determination that there are potential equity impacts on low income and minority populations. CDOT has decided to mitigate those impacts through the development of an operational program and policies to reduce the burdens to those residents. Equity impacts for the financial burden of access to the tolled express lanes will be mitigated by providing to eligible residents of Globeville, Elyria, and Swansea free transponders, pre-loading of tolls, or other means determined prior to the opening of the tolled express lanes. Eligibility and the duration of the program are expected to be determined based on factors including, but not limited to, residency, financial burden, number of vehicles per resident or household, etc. The entire program of

actions will not go into effect immediately; however, the details of the program will be developed, with community involvement, nearer to tolling operations commencement. The initiation of these program actions is anticipated to commence approximately 2022. As part of the program, all communities and stakeholders potentially affected will be invited to participate in the operational strategy development.

- **Swansea Elementary School.** To mitigate impacts to Swansea Elementary School, CDOT will redesign and reconstruct the Swansea Elementary School playground, including building a playground in a temporary location during construction and rebuilding school parking facilities. Other mitigation measures for the school include:
  - Installing new windows and doors and providing a new heating and ventilation system (HVAC) to mitigate for increased dust and noise during construction
  - Building two additional classrooms
- **Documentary on the history of I-70 East.** To mitigate impacts to historic properties in the area, CDOT provided funding for and participated in the creation of a documentary covering the history of I-70 East and its relationship to the Elyria and Swansea and Globeville neighborhoods. This documentary is available on the project website at www.i-70east.com.

As the design advances, more detailed design decisions and more specific commitments will be made to minimize both environmental impacts and impacts to adjacent properties. CDOT will continue to coordinate with stakeholders and agency partners, including Denver, the Public Utilities Commission, the Regional Transportation District (RTD), the Air Pollution Control Decision (APCD) of Colorado Department of Public Health and Environment (CDPHE), and the U.S. Army Corps of Engineers (USACE) throughout the design and construction phases to ensure the minimum disruption takes place.

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Chapter 4 Central 70 Project

FHWA and CDOT identified a Preferred Alternative for the I-70 East Project in the Final EIS, which is described in Section 2.2 of this document. In this document, FHWA selects the Central 70 Project, previously defined as Phase 1 of the Preferred Alternative.

This chapter describes the following elements for the Central 70 Project: funding scenario, description and components included, logical termini and independent utility, how the Central 70 Project addresses the project's purpose and need, and impacts.

4.1 Central 70 Project Funding Scenario

The entire Preferred Alternative identified in the I-70 East Final EIS is estimated to cost approximately $1.7 billion (based on preliminary design estimates in 2016 dollars)—including design, right-of-way acquisition, and construction—which is more than the $1.1757 billion currently identified in the DRCOG Fiscally Constrained RTP, as amended (DRCOG, 2016). The following funding sources currently are committed for the Central 70 Project, which is estimated to cost $1.1 billion.

- $850 million—Colorado Bridge Enterprise Safety Surcharge
- $50 million—DRCOG: Surface Treatment Program-Metro (STP-Metro) and Congestion Mitigation Air Quality (CMAQ)
- $180 million—Senate Bill 09-228 Transfers
- $37 million—Denver

The selection in this ROD to implement the Central 70 Project is consistent with the 2008 FHWA guidance, *Transportation Planning Requirements and Their Relationship to NEPA Process Completion* (along with the February 2011 supplement), to have funding for projects identified before final decisions are made. Because funding for the entire project had not been identified at the time the Final EIS was published, FHWA and CDOT planned for phased implementation of the project and the use of a multiple ROD approach.

The elements included in the Central 70 Project are consistent with the projects, priorities, and funding identified in the Fiscally Constrained RTP. Following the publication of the Final EIS, FHWA performed an independent cost estimate review to verify the accuracy and reasonableness of the project's cost estimate. FHWA's review used a probabilistic approach that included risk events and inflation. The results of the review indicated the total project, including past costs, would have a current-year cost between $1.424 billion to

Central 70 Project delivery

The project team has been using a parallel NEPA and contractor selection process (procurement) in accordance with 23 CFR §636 to expedite the delivery of the project.

$1.866 billion, with a year of expenditure cost ranging from $1.721 billion to $2.329 billion. The Central 70 Project would cost, in current-year dollars, between $1.016 billion and $1.291 billion, with a year of expenditure of $1.097 billion to $1.402 billion.

4.2 Description of the Central 70 Project

The Central 70 Project incorporates portions of the Preferred Alternative for the I-70 East Project. It includes improvements to an approximately 10-mile stretch of I-70 East from I-25 to Chambers Road, adding one new tolled express lane in each direction, removing the aging 50+-year-old viaduct, lowering the highway between Brighton Boulevard and Colorado Boulevard, and placing a four-acre cover over a portion of the lowered highway. **Exhibit 8** provides an overview of the Central 70 Project.

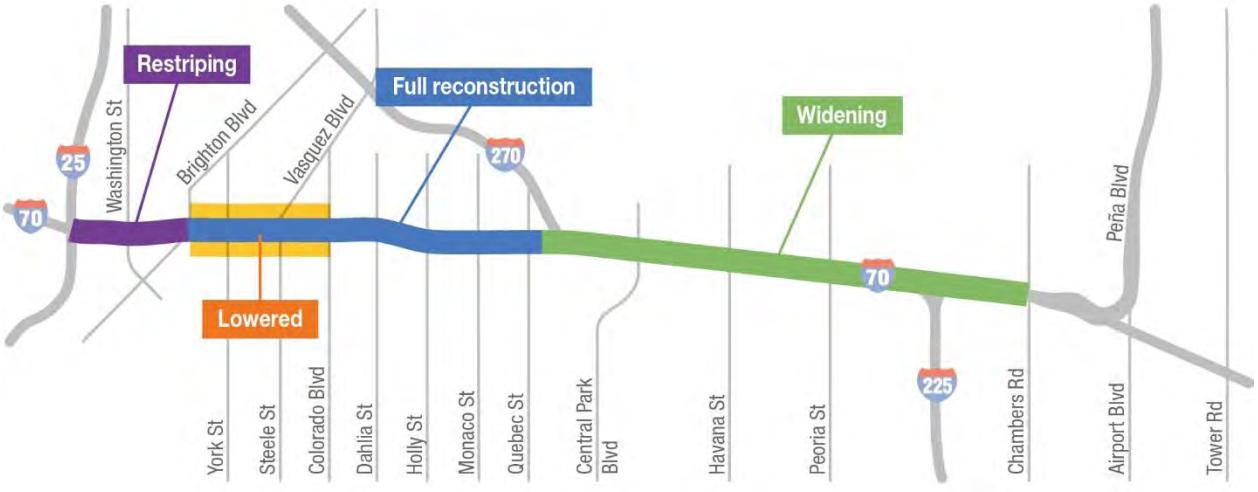
Although striped for only one tolled express lane, the lowered section of the highway will be constructed to the full width because it is more cost effective to construct the whole width now than to perform additional future expansion. It also avoids later impacts. However, due to funding limitations, widening to the full width east of Quebec Street is not feasible. Therefore for lane continuity, only a single lane will be striped from Brighton Boulevard to Quebec Street, even though the highway in this area will be wide enough to accommodate two lanes. When funding becomes available for the future phases of the project, an additional lane will be added throughout the project corridor.

Managed lanes vs. tolled express lanes

The Managed Lanes Option was identified as the Operational Option of the Preferred Alternative.

CDOT has elected to manage the additional lanes on I-70 East by implementing tolled express lanes. In this chapter, this document will refer to the additional lanes as tolled express lanes (rather than managed lanes). See Section 8.2 of the Final EIS (page 8-3) for more information.

Exhibit 8 Central 70 Project Overview



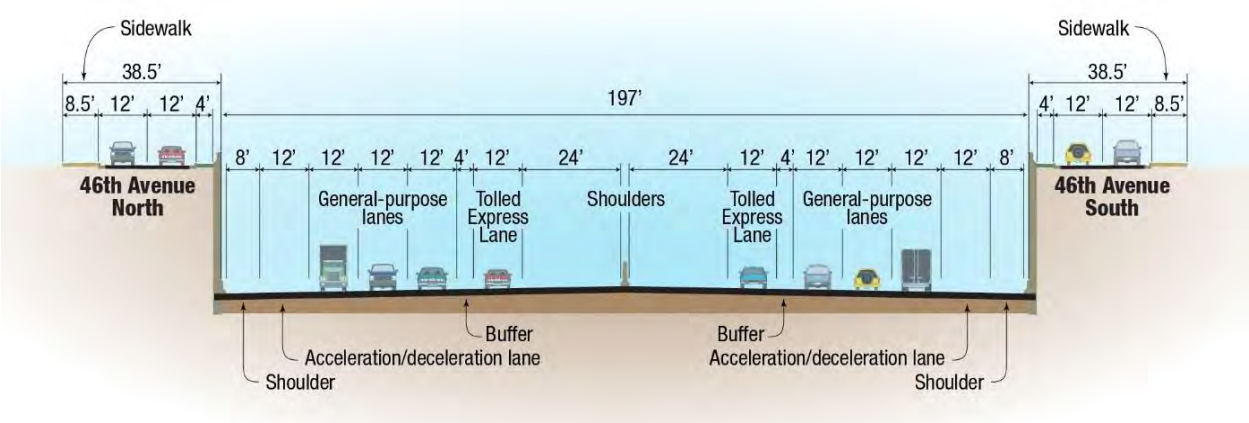
Note: Signing and ITS elements extend beyond the limits shown above.

Restriping, Reconstruction, and Widening

The restriping, reconstruction, and widening elements of the Central 70 Project include:

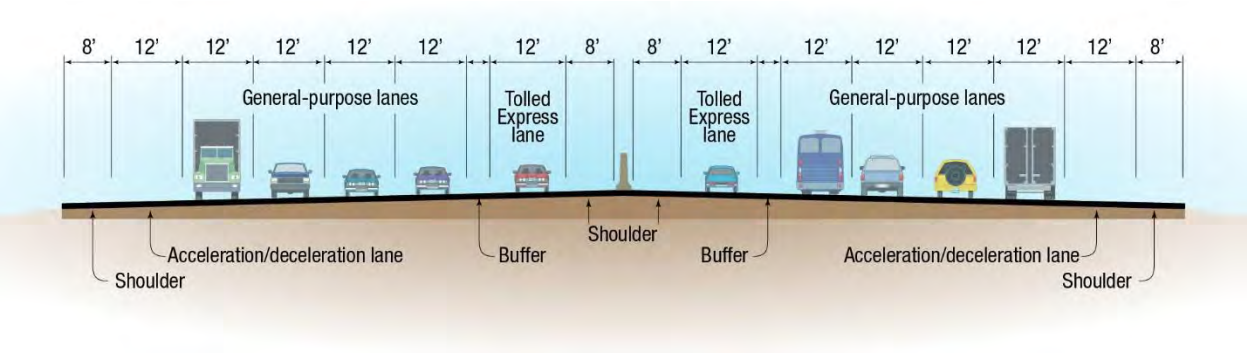
- Restriping the existing highway from I-25 to Brighton Boulevard to accommodate one additional tolled express lane in each direction to provide a transition between the existing I-70/I-25 interchange and the recently reconstructed highway
- Fully reconstructing I-70 from Brighton Boulevard to the bridge over Sand Creek (near I-270), adding one tolled express lane in each direction
    - Removing the existing viaduct between Brighton Boulevard and Colorado Boulevard, and rebuilding I-70 below grade along this segment, expanding the roadway to the north of the existing alignment (see **Exhibit 9**)
    - Fully reconstructing I-70 and the associated frontage road between Colorado Boulevard and Quebec Street
    - Including pavement width for the addition of two tolled express lanes in each direction from Brighton Boulevard to Quebec Street (but only striping one tolled express lane from Brighton Boulevard to Chambers Road for lane continuity)
    - Replacing the existing UPRR bridge structure—currently located beneath the viaduct—and any corresponding track work; I-70 mainline and 46th Avenue will cross under the UPRR bridge
    - Constructing a bridge span over I-70 and separate at-grade crossings for the BNSF Market Lead Railroad line at 46th Avenue North and 46th Avenue South, including track design to accommodate the new structures
- Minor widening and restriping to add one tolled express lane in each direction between Quebec Street and Chambers Road (see **Exhibit 10**)

Exhibit 9 Central 70 Project Typical Section (Between Brighton Boulevard and Colorado Boulevard)



Note: Shoulder widths may vary but are not to exceed what is illustrated in this exhibit.

Exhibit 10 Central 70 Project Typical Section (Between Colorado Boulevard and Chambers Road)



Note: The number of general-purpose and auxiliary lanes vary within the widening section (Quebec Street to Chambers Road) to match existing conditions. Roadway widening is to accommodate the additional tolled express lane.

Highway Cover

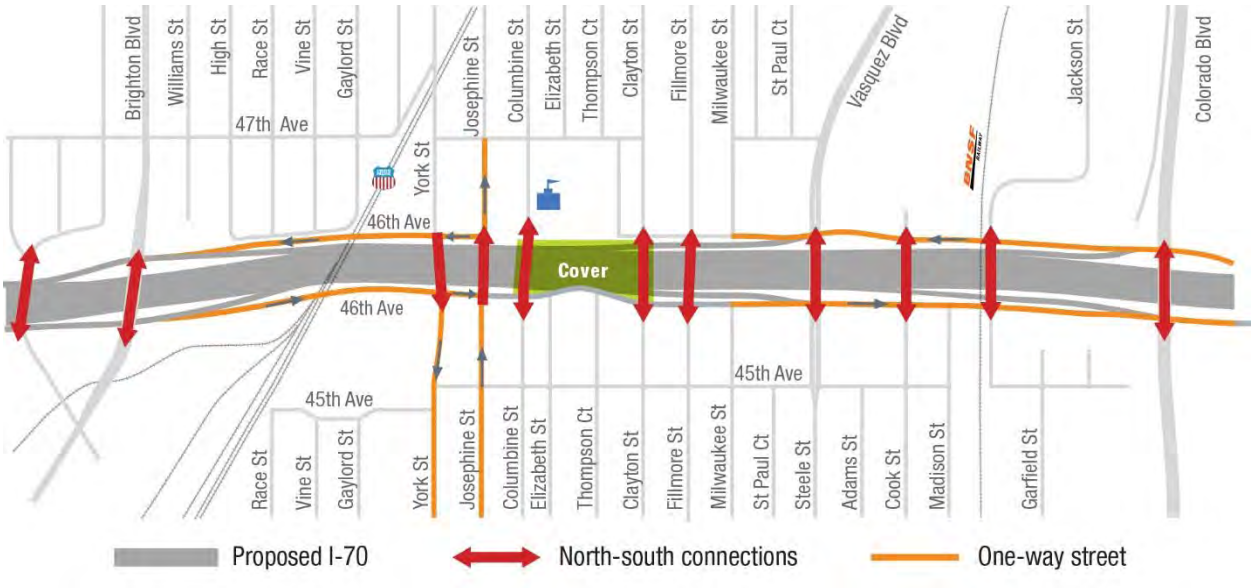
The Central 70 Project includes construction of a highway cover between the Clayton Street and Columbine Street bridges, adjacent to Swansea Elementary School (see Section 2.2.1, Highway Cover, of this document, for more information).

Connectivity and 46th Avenue

Local north-south and east-west connectivity with the Central 70 Project includes:

- Maintaining north-south connections over the lowered freeway as two-way or one-way streets as they currently exist at Brighton Boulevard, Josephine Street, Columbine Street, Clayton Street, Fillmore Street, Steele Street/Vasquez Boulevard, and Colorado Boulevard (see **Exhibit 11**); York Street will become a two-way street north of 46th Avenue North
- Providing additional north-south connectivity across I-70 at Cook Street and Monroe Street
- Moving 46th Avenue to the north and south side of the highway from its current location under the viaduct, becoming a pair of frontage roads allowing one-way traffic or two-way traffic depending on location (46th Avenue North runs parallel to I-70 on the north side and 46th Avenue South runs parallel to I-70 on the south side)

Exhibit 11 Central 70 Project North-South Connectivity



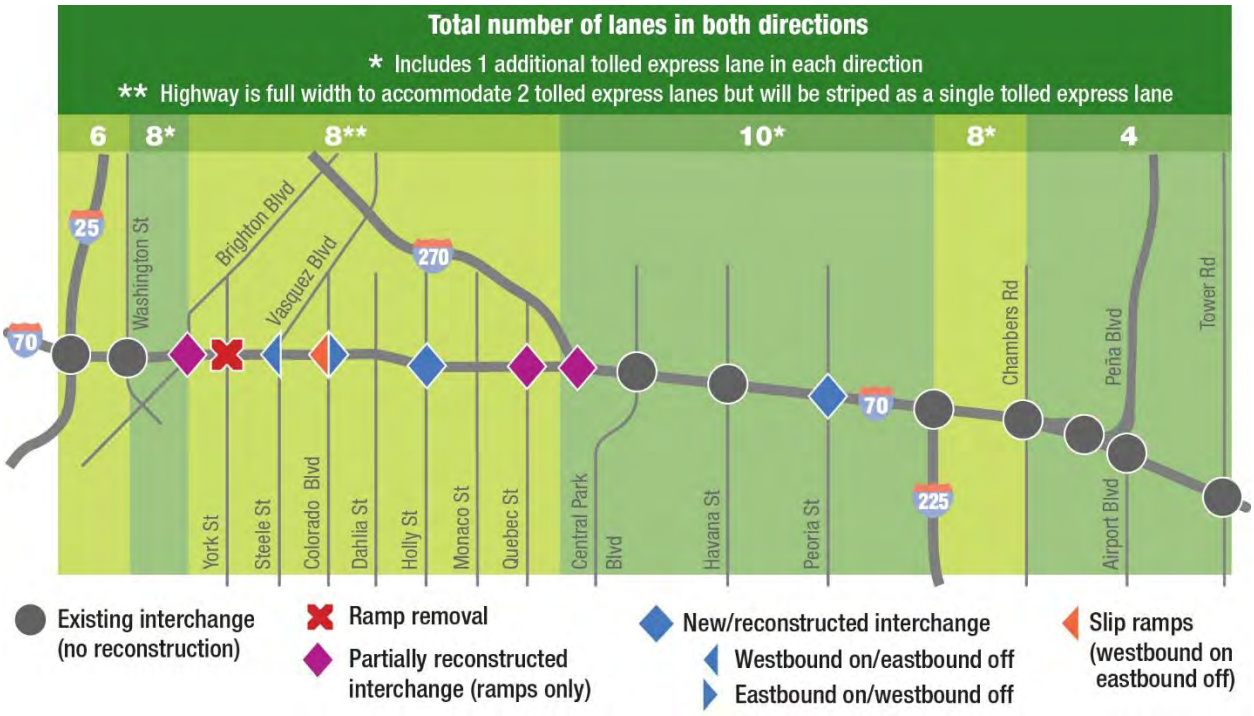
Interchange Modifications

The modifications to interchanges as part of the Central 70 Project include (see **Exhibit 12**):

- Installation of ramp meters at entrance ramps from Washington Street, Brighton Boulevard, Steele Street/Vasquez Boulevard, Colorado Boulevard, Holly Street, and Quebec Street—existing ramp meters at Central Park Boulevard, Havana Street, and Peoria Street will remain in place
- Replacing the ramps at the Brighton Boulevard interchange
- Removing the York Street interchange and ramps
- Creating a split-diamond interchange configuration with one-way frontage roads between Steele Street/Vasquez Boulevard and Colorado Boulevard with slip ramps at Colorado Boulevard for the eastbound off-ramp and westbound on-ramp
- Removing the existing slip ramps at Dahlia Street and Monaco Street, and replacing them with a full interchange at Holly Street
- Replacing the I-270 eastbound to I-70 eastbound flyover structure
- Widening Quebec Street between the ramp terminals, with minimal vertical alignment changes and reconstructing the interchange ramps, to allow for a center pier for the I-70 bridge replacement
- Making no changes to the Central Park Boulevard interchange, which has been constructed recently, so it will not be disturbed as part of this project
- Making no changes to the Havana Street interchange, which is currently being reconstructed, so it will not be disturbed as part of this project

- Building a new bridge at Peoria Street to maintain the required width for the additional lanes along I-70, widening Peoria Street to accommodate the center pier

Exhibit 12 Central 70 Project Lane Configuration and Interchange Reconstruction



Tolled Express Lanes

The tolled express lanes are included as part of the Central 70 Project strictly as a traffic management strategy. Toll rates will be established by the High Performance Transportation Enterprise (HPTE) Board of Directors and will be set at a level necessary to maintain free-flow traffic conditions in these lanes. Existing general-purpose lanes will not be tolled. The project will comply with the state laws at the time of implementation regarding tolled express lanes and high-occupancy vehicles.

- Ingress/egress locations to allow vehicles to enter and exit the tolled express lanes are located in the general vicinity of Brighton Boulevard, Holly Street, Peoria Street, and I-225 (See *Attachment A, Alternatives Maps* for location of ingress/egress points).
- No express lane direct connections or flyovers (at I-225, I-270, or Peña Boulevard) are included in the Central 70 Project.
- Tolled express lanes, infrastructure, sign structures, tolling facilities, and ITS node buildings will be constructed and installed along the project area.

Associated Facilities/Infrastructure and Drainage

The drainage infrastructure and other facility improvements associated with the Central 70 Project include:

- Drainage facilities are included for both the interstate facility and reconstructed local streets adjacent to the highway.
- Stormwater detention facilities also will be constructed.
- Drainage, including the onsite drainage improvements on the north side of I-70 to capture and convey the onsite water runoff and the offsite drainage system to capture surface water before it enters the lowered section of the highway, is included in the Central 70 Project. See Section 9.12 for information on the drainage system needed for the project.
- Other general improvements along the reconstructed 46th Avenue between Colorado Boulevard and Brighton Boulevard will include lighting, pedestrian and bicycle amenities, and other streetscape improvements.
- All pedestrian improvements made as part of the project will comply with the ADA.

4.3 Logical Termini and Independent Utility

The identification of the Preferred Alternative in the Final EIS and the Central 70 Project in this document is consistent with FHWA guidance that transportation solutions:

- Be evaluated on a broad scale that provides meaningful analysis and avoids segmentation
- Connect logical termini
- Have independent utility
- Do not restrict consideration of alternatives for other reasonably foreseeable future projects (23 CFR §771.111(f))

When a project is determined to be a reasonable expenditure of public funds to solve problems identified in the project's purpose and need, and would be usable even if no additional improvements are made in the area, it is said to have independent utility. Logical termini are defined as rational end points for a transportation improvement and are of sufficient length to address environmental matters on a broad scope. Section 4.2 of this document identifies the Central 70 Project.

A NEPA proposed action must have rational physical end points and allow for review of environmental impacts on a broad scale. *Chapter 8, Phased Project Implementation*, of the Final EIS identified phases for the entire Preferred Alternative. All phases have independent utility and logical termini. CDOT and FHWA intend to work toward implementation of the Final EIS Preferred Alternative in its entirety through a multiple ROD (phased) approach as funds become available.

On the western end of the Central 70 Project, I-25 serves as a logical terminus. Traffic studies show that half of westbound traffic on I-70 exits onto I-25. In fact, recent traffic projections show only a 4-percent growth in travel along the portion of I-70 west of the I-25/I-70 interchange during the next 30 years. I-25 is consistent with the western terminus of the Preferred Alternative for the I-70 East Project in the Final EIS.

Chambers Road serves as the logical eastern terminus for the Central 70 Project. Eastbound volumes generally decrease up to Central Park Boulevard, where there are approximately 68,000 vpd. The merge of I-270 results in volumes increasing by nearly 50,000 vpd, resulting in a directional high of 118,000 vpd. East of this merge, volumes begin to decrease again at each interchange, with significant diverging volumes at Chambers Road and Peña Boulevard. East of Peña Boulevard, I-70 has only two eastbound lanes and volumes are between 25,000 vpd and 35,000 vpd.

The improvements included in the Central 70 Project do not restrict the consideration of alternatives for the reasonably foreseeable adjacent projects. The construction of the Central 70 Project has independent utility because it provides transportation benefits by decreasing congestion and overall travel times along I-70 East, and is a reasonable expenditure even if no additional improvements are made. The improvements in the Central 70 Project have logical termini, and the environmental impacts have been considered on a broad enough scale.

4.4 Responsiveness to Purpose and Need

The Central 70 Project would contribute to addressing elements of the project purpose and need, as described in the following subsections. The I-70 East Preferred Alternative provides additional improvements that will further address transportation infrastructure deficiencies, increased transportation demand, limited transportation capacity, and safety concerns.

4.4.1 Transportation Infrastructure Deficiencies

I-70 was built in the early 1960s, with bridge and drainage structures designed to last for 30 years. Nine structures on the corridor are now past their anticipated lifespan and are classified as either structurally deficient or functionally obsolete and in need of repair, rehabilitation, or replacement. Deficiency details are outlined in *Section 2.5.1, Transportation Infrastructure Deficiencies*, of the Final EIS.

The Central 70 Project will address the deteriorating transportation infrastructure by:

- Removing the aging viaduct between Brighton Boulevard and Colorado Boulevard and replacing it with a below-grade highway in this area
- Addressing problems with structural deficiencies on the other I-70 structures by replacing them

4.4.2 Increased Transportation Demand

The 2010 and 2035 DRCOG travel demand models have shown recent population and employment growth within the Denver region, which has resulted in increased travel demand on the I-70 East corridor. For more information, see *Section 2.5.2, Increased Transportation Demand*, of the Final EIS.

As supported in *Chapter 8, Phased Project Implementation,* of the Final EIS, the Central 70 Project will provide for reasonable access to transportation facilities by:

- Balancing the need for access with adverse effects on system performance by reconfiguring and consolidating interchanges
- Providing access to transportation facilities for a variety of users by improving interchanges, providing updated sidewalks, and following Denver's bike plan
- Facilitating connections between residential and business activity centers by improving the frontage roads and the interstate access points

The Central 70 Project will enhance mobility by providing transportation choices that:

- Enhance system reliability by providing a congestion-free lane (tolled express lane)
- Balance the transportation needs of local, regional, and national users by providing improvements on an interstate system that is used by local, regional, and national travelers

4.4.3 Limited Transportation Capacity

I-70 currently serves close to or more than the capacity of vehicle traffic for which it was designed. Depending on the location along the corridor, between 52,000 vpd and 220,000 vpd travel through the project area. Forecasted traffic volumes for the year 2035 (with or without improvements) show that traffic on I-70 will increase substantially, carrying between 95,000 vpd and 270,000 vpd (DRCOG, 2013).

The Central 70 Project will provide for realistic capacity expansion and minimized future congestion leading to:

- A sufficient transportation system capacity to ensure the efficient movement of people and goods
- Minimized transportation system delay by providing a reliable system through a providing a congestion-free lane (tolled express lane)
- Flexibility for future expansion and modification by preserving right of way, especially in the lowered section of the highway
- Practical and implementable technologies that incorporate a tolled express lane and can take advantage of the latest tolling technologies

4.4.4 Safety Concerns

Within the limits of the project, I-70 generally experiences more crashes than the state average for urban freeways. As supported in *Section 2.5.4, Safety Concerns,* of the Final EIS, these crashes cause unpredictable and unavoidable traffic congestion, which adds to or worsens the already existing congestion from travel demand that exceeds the normal roadway capacity. The unpredictable nature of traffic congestion on I-70 increases safety concerns for freight carriers, employers, manufacturers, and business interests in the region, as well as commuters and residents who depend on reliability for their daily travel.

The Central 70 Project will address safety needs and upgrade facilities to current standards by:

- Optimizing safety, thereby minimizing crashes by conforming to engineering design, safety standards, and standard practices for construction, maintenance, and operations
- Providing access for emergency response and evacuation situations through adequate shoulder widths on the highway and ramps and acceleration/deceleration lanes

4.5 Central 70 Project Environmental Impacts

Any updates to the Preferred Alternative (previously described in Section 2.5) that resulted in changes to the outcome of the analysis also were evaluated for the Central 70 Project. **Exhibit 13** lists the impacts of the Central 70 Project for each resource. More detail on the impacts and analysis is available in the technical reports attached to this document, if applicable, or in the attachments to the Final EIS. For information on specific determinations and other monitoring or enforcement requirements for the Central 70 Project, see Chapter 6, Federal, State, and Local Permits and Approvals, of this document.

Exhibit 13 Summary of the Central 70 Project Impacts

Transportation
• Temporary road closures and traffic detours may have impacts on access to certain public services • Improved pedestrian/bicycle facilities • Improved traffic operations due to the addition of new lanes, improvement to ramps, addition of auxiliary lanes, improvements to roadways, and modification of interchanges • Temporary impacts to rail facilities will result from the construction of railroad bridge structures and/or the relocation of track operations • Impacts to local traffic volumes caused by removal of the York Street interchange and changes to the Steele Street/Vasquez Boulevard interchange and the Colorado Boulevard interchange • Improved transportation operations, preservation of transportation capacity, and the ability to provide reliable travel times

Exhibit 13 Summary of the Central 70 Project Impacts

Social and Economic Conditions
• 56 residential relocations • 17 business relocations (includes one non-profit relocation) • Acquisition of right of way from the buffer area between 46th Avenue and the field to the south of Swansea Elementary School • Temporary effect to the regional economy from construction-related traffic congestion • Temporary road closures and traffic detours may have impacts on access to certain public services • $1,736.3 million of regional economic output (9,000 person years of employment)
Environmental Justice
• Creating new construction-related jobs • Building the highway to updated standards and improving mobility • Increasing noise and dust during construction • Potential for disturbing hazardous material sites during construction • Impacting mobility during construction due to detours • Temporarily closing or delaying, or permanently rerouting, public transit services in the area • Removing the viaduct's visual barrier between Brighton Boulevard and Colorado Boulevard • Minimizing the presence of the highway in environmental justice areas, since it is below grade and is covered • Providing multi-modal safety from improved lighting and sidewalks at north-south connections • Displacing the Pilot Travel Center truck stop, which will eliminate a point-source location for air pollution • Reducing highway noise and air quality impacts to Swansea Elementary School and adjacent properties by placing a cover over the highway • Keeping the Nestlé Purina Petcare Company at its existing location • Improving safety of north-south pedestrian and bicycle connectivity compared to the existing conditions by eliminating unsafe crossings underneath the viaduct • Relocating 56 residences • Impacting 109 noise receptors • Moving the highway closer to Swansea Elementary School • Displacing Stop N Shop and Pilot Travel Center truck stop • Creating visual obstruction with safety barriers; eliminating views across the highway • Creating reliable travel times • Providing congestion-free lanes • Reducing congestion in all travel lanes • Creating a financial burden to low-income community, who may not be able to afford to use the tolled express lanes
Land Use
• 56.2 acres converted to transportation use • Creation of a four-acre cover, with public park/open space land use
Relocations and Displacements
• 56 residential relocations • 17 business relocations (includes 1 non-profit relocation)

Exhibit 13 Summary of the Central 70 Project Impacts

Historic Preservation

- Adverse Effect—13 historic resources
- No Adverse Effect—72 historic resources
- No Effect—2 historic resources
- Temporary impacts may include dust and debris, visual and auditory degradation related to construction activities, and decreased access

Paleontological Resources

- Increased potential for encountering paleontological resources in excavated bedrock of the Denver and Arapahoe Formations

Visual Resources and Aesthetic Qualities

- Introducing public space to the area and reducing the roadway's visual dominance by removing the existing viaduct will enhance the visual quality
- Ground-level noise walls or safety barriers are less intrusive to viewers' eyes compared to the No-Action and Revised Viaduct Alternatives, but they also introduce a new visual impact by blocking the view across the highway
- Views for drivers traveling eastbound and westbound will be entirely different from the existing conditions
- New features of the project (e.g., detention ponds, retaining walls) will change the visual environment along the project corridor
- Tolled express lanes will create new visual impacts along the project corridor due to the introduction of infrastructure

Parks and Recreational Areas

- South Platte River Greenway (Section 6(f) resource) temporary impacts may occur during construction
- 0.95 acre of impact to Swansea Elementary School
- Impacts from construction of the Globeville Landing Park Outfall (GLO) will result in a temporary non-conforming use under Section 6(f) to Globeville Landing Park during the construction of the enhancements
- Part of Globeville Landing Park will be closed during construction

Air Quality

- Mobile source air toxic (MSAT) emissions decline dramatically over the life of the project, but could increase temporarily during construction
- Construction fugitive dust could cause temporary impacts
- No violation of the National Ambient Air Quality Standards (NAAQS)

Energy

- 70.0 billion British thermal units (Btu) consumed per day (daily Btu is calculated based on study area, which is the same for all phases)
- 5,808 billion Btu consumed during construction

Noise

- Number of noise receptors that exceed the Noise Abatement Criteria (NAC) threshold
  - Globeville: 27
  - Elyria: 40 (11 increase substantially—by 10 dBA or more)
  - Swansea: 37
  - Stapleton: 0
  - Peoria Street: 0
  - Montbello: 3
  - Aurora: 2
- Construction noise will present short-term effects to those dwelling units located along the corridor and along designated construction access routes

Biological Resources

- 369.2 acres of permanent, direct impact to wildlife habitat
- 0.999 acres of permanent impacts and 0.892 acre of temporary impacts to riparian areas

Exhibit 13 Summary of the Central 70 Project Impacts

Floodplains and Drainage/Hydrology
• Impact to potential ponding areas due to the increased width of the highway, which may increase runoff from I-70 • The potential ponding areas between Brighton Boulevard and Dahlia Street will be substantially impacted due to lowered profile of the highway
Wetlands and Other Waters of the U.S.
• 5.507 acres of permanent impacts and 0.081 acres of temporary impacts to wetlands • 0.219 acres of permanent impacts and 0.556 acre of temporary impacts to other waters of the U.S
Water Quality
• Increase in runoff total suspended solids (TSS) loads of six percent to the South Platte River • Increase in runoff TSS loads of 18 percent to Sand Creek • Stormwater runoff can create erosion and degradation of water quality during and after construction • Winter maintenance activities use solutions and compounds that could lead to water quality issues from runoff
Geology and Soils
• Excavation is anticipated to extend below the depth of groundwater from approximately the UPRR to Columbine Street • Temporary impacts to groundwater during excavation
Hazardous Materials
• 34 hazardous material sites affected • 750 acres of land disturbed • Extensive excavation through a known landfill that contains contaminants • Construction activities at hazardous material sites have the potential to spread soil or groundwater contamination • Construction at hazardous material sites also may affect the construction budget and schedule, particularly if previously unidentified contamination is found
Utilities
• All utility types will be affected to some extent • Construction impacts to utilities will be substantial to accommodate the lowered highway and increased width • Offsite stormwater drainage system south of I-70 will cause additional impacts to utilities and result in major benefit to address an existing deficiency
Section 4(f)
• Use of Swansea Elementary School Public Playground • Use of Globeville Landing Park • Use of 22 historic resources, which includes 9 *de minimis* impact determinations

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Chapter 5 Central 70 Mitigation Measures

Per the *CDOT NEPA Manual* and as discussed in Chapter 3, Measures to Minimize Harm, of this document, prior to mitigation, CDOT always makes best efforts to:

- Avoid the impact altogether by not taking a certain action or parts of an action
- Minimize impacts by limiting the degree or magnitude of the action and its implementation

However, if avoidance or minimization is not feasible, then mitigation measures may be implemented, including:

- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
- Compensating for the impact by replacing or providing substitute resources or environments (CEQ, 40 CFR §1508.20)

FHWA regulations require that mitigation measures presented as commitments in the EIS be incorporated into a project (FHWA and FTA, 23 CFR §771.109[b] and 23 CFR §771.125[a][1]). Monitoring conducted during project construction and operations is the means to ensure mitigation measures are implemented effectively. If monitoring identifies any deficiencies in mitigating the impact, adjustments to the level, timing, and/or procedure of mitigation must be made accordingly.

Mitigation commitments are specific and include information regarding responsibility, monitoring, performance standards, and schedules for implementation. This ROD makes commitments about implementing and monitoring the proposed mitigation measures legally binding. **Exhibit 14** on the following pages includes impacts and mitigation measures for the Phase 1 project. This table is consistent with the CDOT Mitigation Tracking Form and will be used by CDOT and the developer through the design, construction, and maintenance phases to ensure that all mitigation commitments are met.

Exhibit 14 Central 70 Project Mitigation Measures

Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
1	Transportation	Temporary road closures and traffic detours may have impacts on access to certain public services	Coordinate with RTD for phasing of improvements to minimize disruptions to transit operations	CDOT Engineering/ Developer	Pre-construction/ during construction	Final EIS, Chapter 4, p. 4-56
2	Transportation	Temporary road closures and traffic detours may have impacts on access to certain public services	Coordinate with RTD more than 30 days in advance during construction to minimize disruptions to service areas and schedules and notify transit users in advance of any closures, delays, or modifications in bus or rail routes; and on modifications or relocation of transit stops or signage along the affected routes since accessibility is required to be maintained	CDOT Engineering/ Developer	Pre-construction/ during construction	Final EIS, Chapter 4, p. 4-56
3	Transportation	Temporary impacts to rail facilities will result from the construction of railroad bridge structures and/or the relocation of track operations	Coordinate with UPRR, BNSF, and DRIR for phasing of improvements to minimize disruptions to railroad operations	CDOT Engineering/ Developer	Pre-construction/ during construction	Final EIS, Chapter 4, p. 4-56
4	Transportation	Impacts to local traffic volumes caused by removal of the York Street interchange and changes to the Steele Street/ Vasquez Boulevard interchange and the Colorado Boulevard interchange	Coordinate with Denver to determine appropriate truck routes on city streets	CDOT Engineering/ Developer	Pre-construction/ during construction	Final EIS, Chapter 4, p. 4-56
5	Transportation	Temporary road closures and traffic detours may have impacts on access to certain public services	Develop and implement a Transportation Demand Management (TDM) program during construction, which could include items such as working with RTD on enhanced transit service and including ITS	CDOT Engineering/ Developer	Pre-construction/ during construction	ROD, Section 9.1, p. 137
6	Transportation	Temporary road closures and traffic detours may have impacts on access to certain public services	Coordinate with affected local governments, residents, and businesses to minimize disruptions during construction	CDOT Engineering/ Developer	Pre-construction/ during construction	ROD, Section 9.1, p. 137
7	Social and Economic Conditions	56 residential relocations 17 business relocations (includes 1 non-profit relocation)	Compensate any person(s) whose property needs to be acquired according to the U.S. Constitution and the Uniform Act, as amended	CDOT Right of Way/ Developer	During property acquisition	Final EIS, Section 5.2, p. 5.2-51

Exhibit 14 Central 70 Project Mitigation Measures

Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
8	Social and Economic Conditions	Temporary road closures and traffic detours may have impacts on access to certain public services	Provide safe and efficient connections through neighborhoods during construction for all modes of transportation, including bicycles and pedestrians	CDOT Engineering/ Developer	During construction	Final EIS, Section 5.2, p. 5.2-51
9	Social and Economic Conditions	Temporary road closures and traffic detours may have impacts on access to certain public services	Coordinate with emergency service providers during construction to minimize effects on response times	CDOT Engineering/ Developer	During construction	Final EIS, Section 5.2, p. 5.2-51
10	Social and Economic Conditions	Temporary effect to the regional economy from construction-related traffic congestion	Use standard measures—such as phased construction, advance notice of road closures and detours, and fixed and variable signage—to reduce effects on local residents, businesses, and services and on I-70 motorists	CDOT Engineering/ Developer	During construction	Final EIS, Section 5.2, p. 5.2-51
11	Social and Economic Conditions	Temporary road closures and traffic detours may have impacts on access to certain public services	Use standard measures—such as phased construction, advance notice of road closures and detours, and fixed and variable signage—to reduce effects on local residents, businesses, and services and on I-70 motorists	CDOT Engineering/ Developer	During construction	Final EIS, Section 5.2, p. 5.2-51
12	Social and Economic Conditions	Temporary road closures and traffic detours may have impacts on access to certain public services	Provide a robust and context-sensitive communications and outreach plan throughout construction to ensure residents are kept informed	CDOT Public Involvement/ Developer	Pre-construction/ during construction	Final EIS, Section 5.2, p. 5.2-51
13	Social and Economic Conditions	Temporary road closures and traffic detours may have impacts on access to certain public services	Coordinate with RTD more than 30 days in advance during construction to minimize disruptions to service areas and schedules and notify transit users in advance of any closures, delays, or modifications in bus or rail routes; and on modifications or relocation of transit stops or signage along the affected routes since accessibility is required to be maintained	CDOT Engineering/ Developer	Pre-construction/ during construction	Final EIS, Section 5.2, p. 5.2-51
14	Social and Economic Conditions	Temporary road closures and traffic detours may have impacts on access to certain public services	Use signs and notifications to reduce adverse effects on access to homes, businesses, and services during the construction period from detours	CDOT Engineering/ Developer	During construction	Final EIS, Section 5.2, p. 5.2-51

Exhibit 14 Central 70 Project Mitigation Measures

Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
15	Social and Economic Conditions	Acquisition of right of way from the buffer area between 46th Avenue and the field to the south of Swansea Elementary School	Removing the viaduct, lowering the highway, and covering portions of the highway to include space for community and neighborhood activities	CDOT Engineering/ Developer	Pre-construction/ during construction	Final EIS, Section 5.2, p. 5.2-52
16	Social and Economic Conditions	Acquisition of right of way from the buffer area between 46th Avenue and the field to the south of Swansea Elementary School	Redesign and reconstruct the school playground; this will include the adjacent parcels as part of the elementary school site and will eliminate Elizabeth Street between 46th Avenue and 47th Avenue and 46th Avenue between Clayton Street and Columbine Street will be removed to allow for a seamless connection between Swansea Elementary School and the landscape on the highway cover	CDOT Engineering/ Developer	Final design/ during construction	Final EIS, Section 5.2, p. 5.2-52
17	Environmental Justice	17 business relocations (includes 1 non-profit relocation)	Provide targeted assistance to encourage businesses that are crucial to low-income and minority populations to find new locations in the same neighborhoods	CDOT Right of Way/ Developer	During property acquisition	Final EIS, Section 5.3, p. 5.3-41
18	Environmental Justice	56 residential relocations 17 business relocations (includes 1 non-profit relocation)	Provide funding to CRHDC to assist residential and business displacees with financial counseling and procurement of financing for replacement property and securing business and residential loans; CDOT has already provided funding to CRHDC as early mitigation	CDOT Right of Way and Engineering	During property acquisition/ pre-construction (complete)	Final EIS, Section 5.3, p. 5.3-41
19	Environmental Justice	Potential for disturbing hazardous material sites during construction	Collect representative soil samples of three or four recently cleaned-up residential properties pre-, during, and post-construction to test for lead and arsenic to ensure that the properties aren't re-contaminated due to construction activities	CDOT Environmental/ Developer	Pre-construction/ during construction/ post-construction	Final EIS, Section 5.3, p. 5.3-41
20	Environmental Justice	Increasing noise and dust during construction	Provide residents close to the highway construction—between 45th Avenue and 47th Avenue from Brighton Boulevard to Colorado Boulevard—two free portable or window-mounted air conditioning units with air filtration and assistance for the potential additional utility costs during construction	CDOT Engineering and Environmental	Pre-construction	Final EIS, Section 5.3, p. 5.3-41

Exhibit 14 Central 70 Project Mitigation Measures

Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
21	Environmental Justice	Increasing noise and dust during construction	Provide residents close to the highway construction—between 45th Avenue and 47th Avenue from Brighton Boulevard to Colorado Boulevard—interior storm windows	CDOT Engineering and Environmental	Pre-construction	Final EIS, Section 5.3, p. 5.3-41
22	Environmental Justice	Increasing noise and dust during construction	Provide residents close to the highway construction—between 45th Avenue and 47th Avenue from Brighton Boulevard to Colorado Boulevard—furnace filters	CDOT Engineering and Environmental	Pre-construction	ROD, Section 9.3, p. 138
23	Environmental Justice	17 business relocations (includes 1 non-profit relocation)	Facilitate opportunities to promote hiring individuals from the communities, such as job fairs with developers	CDOT Civil Rights and Public Involvement/ Developer	Pre-construction/ during construction	Final EIS, Section 5.3, p. 5.3-44
24	Environmental Justice	17 business relocations (includes 1 non-profit relocation)	Execute geographic-based hiring preferences (CDOT has submitted an application and received approval under Special Experiment Project 14 (SEP-14) for the US DOT pilot program)	CDOT Civil Rights and Public Involvement/ Developer	Pre-construction/ during construction	Final EIS, Section 5.3, p. 5.3-41
25	Environmental Justice	17 business relocations (includes 1 non-profit relocation)	Research opportunities to invest funds in a local workforce development program aimed at job readiness training prior to construction	CDOT Civil Rights and Public Involvement/ Developer	Pre-construction/ during construction	Final EIS, Section 5.3, p. 5.3-41
26	Environmental Justice	Increasing noise and dust during construction at the school	Provide a new HVAC system, doors, and windows for Swansea Elementary School	CDOT Engineering	Pre-construction	Final EIS, Section 5.3, p. 5.3-41
27	Environmental Justice	Moving the highway closer to Swansea Elementary School	Prior to the start of roadway construction, build two new classrooms at Swansea Elementary School to enhance the overall quality of the school	CDOT Engineering	Pre-construction	Final EIS, Section 5.3, p. 5.3-41
28	Environmental Justice	Improving safety of north-south pedestrian and bicycle connectivity compared to the existing conditions by eliminating unsafe crossings underneath the viaduct	Remove the viaduct, lower the highway, and cover a portion of the highway to include space for community and neighborhood activities	CDOT Engineering/ Developer	Final design/ during construction	Final EIS, Section 5.3, p. 5.3-44
29	Environmental Justice	Displacing Stop N Shop and Pilot Travel Center truck stop	Provide $100,000 toward the Denver Office of Economic Development's GES Healthy Food Challenge that will help facilitate access to fresh food.	CDOT Environmental and Engineering	Pre-construction/ during construction	ROD, Section 9.3 p. 138

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Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
30	Environmental Justice	Moving the highway closer to Swansea Elementary School	Redesign and reconstruct the school playground; this will include the adjacent parcels as part of the elementary school site and will eliminate Elizabeth Street between 46th Avenue and 47th Avenue and 46th Avenue between Clayton Street and Columbine Street will be removed to allow for a seamless connection between Swansea Elementary School and the landscape on the highway cover	CDOT Engineering/ Developer	Final design/ during construction	Final EIS, Section 5.3, p. 5.3-44
31	Environmental Justice	Relocating 56 residences	Provide $2 million in funding to support affordable housing in the Elyria and Swansea Neighborhood through available programs	CDOT Environmental and Engineering	Pre-construction/ during construction	ROD, Section 9.3 p. 138
32	Environmental Justice	Creating a financial burden to the low-income community, who may not be able to afford to use the tolled express lanes	Eligible residents of Globeville, Elyria, and Swansea will be provided mitigation for the financial burden of access to the tolled express lane through either free transponders, pre-loading of tolls, or other means determined prior to the opening of the tolled express lane. Eligibility and the duration of the program are expected to be determined based on factors including, but not limited to, residency, financial burden, number of vehicles per resident or household, etc.	CDOT HPTE	Post-construction	ROD, Section 9.3, p. 139
33	Land use	56.2 acres converted to transportation use	Continue to coordinate with local jurisdictions to ensure compatibility with land use plans and to address any inconsistency that may arise	CDOT Engineering/ Developer	Final design	Final EIS, Section 5.4, p. 5.4-18
34	Relocations and displacements	56 residential relocations 17 business relocations (includes 1 non-profit relocation)	Compensate any person(s) whose property needs to be acquired according to the U.S. Constitution and the Uniform Act, as amended	CDOT Right of Way/ Developer	During property acquisition	Final EIS, Section 5.5, p. 5.5-20
35	Relocations and displacements	56 residential relocations 17 business relocations (includes 1 non-profit relocation)	Provide all impacted owners notification of the acquiring agency's intent to acquire an interest in their property, including a written offer letter of just compensation specifically describing those property interests; assign a right of way specialist to each property owner to assist them with this process	CDOT Right of Way/ Developer	During property acquisition	Final EIS, Section 5.5, p. 5.5-20

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Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
36	Relocations and displacements	56 residential relocations 17 business relocations (includes 1 non-profit relocation)	Provide bilingual services for any of the relocated and displaced businesses or households that need them	CDOT Right of Way/ Developer	During property acquisition	Final EIS, Section 5.5, p. 5.5-20
37	Relocations and displacements	56 residential relocations 17 business relocations (includes 1 non-profit relocation)	Meet directly with those owners and occupants who would be relocated as a result of the proposed project; conduct multiple meetings with these individuals to provide an introduction and overview of the process associated with the Uniform Act; provide information on resources available, including assistance from local, state, and federal agencies, and private agencies in the community; identify individual eligibility for benefits	CDOT Right of Way/ Developer	During property acquisition	Final EIS, Section 5.5, p. 5.5-20
38	Historic preservation	Adverse Effect—13 historic resources	Provide Level II archival documentation for adversely affected resources	CDOT Environmental	Pre-construction/ during construction	Final EIS, Section 5.6, p. 5.6-17
39	Historic preservation	Adverse Effect—13 historic properties	Provide funding and participate in the creation of a documentary covering the history of I-70 East and its relationship to the Elyria and Swansea and Globeville neighborhoods (mitigation has been completed, and is available to view at www.i-70east.com)	CDOT Environmental	Pre-construction (complete)	Final EIS, Section 5.6, p. 5.6-17
40	Historic preservation	Adverse Effect—13 historic properties Temporary impacts may include dust and debris, visual and auditory degradation related to construction activities, and decreased access	Implement mitigation measures, as identified, in consultation with SHPO and consulting parties as described in the Programmatic Agreement (PA)	CDOT Engineering and Environmental	Pre-construction/ during construction	Final EIS, Section 5.6, p. 5.6-17
41	Historic preservation	Discovery of cultural materials related to Indian occupation during construction	Contact consulting Indian tribes if Indian cultural materials are identified at any time during construction	CDOT Engineering and Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.6, p. 5.6-17
42	Historic preservation	Potential for construction activities to discover unanticipated, sub-surface historic resources during the course of construction, including, but not limited to, trolley tracks, sewer systems, building foundations, or historic artifacts	Refer to the Section 106 PA, Stipulation VI, Construction Phase Post-Review Discoveries, which sets forth a process for review of unanticipated resources uncovered during construction	CDOT Engineering and Environmental/ Developer	During construction	ROD, Section 9.6, p. 149

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Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
43	Historic preservation	Potential for construction activities to discover unanticipated, sub-surface historic resources during the course of construction, including, but not limited to, trolley tracks, sewer systems, building foundations, or historic artifacts	If trolley tracks or any other potential historic resources are discovered during construction and the impact on the resource is determined to be adverse, CDOT will follow I-70 East Corridor Programmatic Agreement Mitigation Stipulation III (6) to determine appropriate mitigation measures.	CDOT Engineering and Environmental/ Developer	During construction	ROD, Section 9.6, p. 149
44	Paleontological	Potential for encountering paleontological resources in excavated bedrock of the Denver and Arapahoe Formations	Perform an intensive preconstruction paleontological survey	CDOT Environmental	Pre-construction	Final EIS, Section 5.7, p. 5.7-7
45	Paleontological resources	Potential for encountering paleontological resources in excavated bedrock of the Denver and Arapahoe Formations	Perform spot-checking of excavations by a qualified paleontologist in areas of high paleontological potential during all phases of construction until bedrock is reached, then perform continuous paleontological monitoring	CDOT Environmental/ Developer	During construction	Final EIS, Section 5.7, p. 5.7-7
46	Paleontological resources	Potential for encountering paleontological resources in excavated bedrock of the Denver and Arapahoe Formations	Cease work immediately upon discovery of any paleontological resources, fence off the area, and allow the paleontologist to conduct sampling or excavation of specimens by hand or with mechanized equipment; do not resume work in the area until receiving formal notification from the paleontologist allowing work to resume	CDOT Environmental/ Developer	During construction	Final EIS, Section 5.7, p. 5.7-7
47	Visual resources and aesthetic qualities	Ground-level noise walls or safety barriers are less intrusive to viewers' eyes compared to the No-Action and Revised Viaduct Alternatives, but they also introduce a new visual impact by blocking the view across the highway	Use *Attachment O, Aesthetic and Design Guidelines* of the Final EIS, developed during the EIS process, with Denver and the community during final design to help CDOT identify appropriate aesthetic design elements to ensure compatibility within the community and each viewshed; CDOT is committed to following the guidelines and continued community involvement during final design and construction	CDOT Environmental and Engineering/ Developer	Final design/ pre-construction/ during construction	Final EIS, Section 5.8, p. 5.8-25

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Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
48	Visual resources and aesthetic qualities	Views for drivers traveling eastbound and westbound will be entirely different from the existing conditions	Use *Attachment O, Aesthetic and Design Guidelines* of the Final EIS, developed during the EIS process, with Denver and the community during final design to help CDOT identify appropriate aesthetic design elements to ensure compatibility within the community and each viewshed; CDOT is committed to following the guidelines and continued community involvement during final design and construction	CDOT Environmental and Engineering/ Developer	Final design/ pre-construction/ during construction	Final EIS, Section 5.8, p. 5.8-25
49	Visual resources and aesthetic qualities	Tolled express lanes infrastructure will create new visual impacts along the project corridor	Use *Attachment O, Aesthetic and Design Guidelines* of the Final EIS, developed during the EIS process, with Denver and the community during final design to help CDOT identify appropriate aesthetic design elements to ensure compatibility within the community and each viewshed; CDOT is committed to following the guidelines and continued community involvement during final design and construction	CDOT Environmental and Engineering/ Developer	Final design/ pre-construction/ during construction	Final EIS, Section 5.8, p. 5.8-25
50	Parks and recreational resources	South Platte River Greenway (Section 6(f) resource) temporary impacts may occur during construction	Provide adequate notice and signing to Greenway users prior to and during construction	CDOT Environmental/ Developer	During construction	Final EIS, Section 5.9, p. 5.9-22
51	Parks and recreational resources	South Platte River Greenway (Section 6(f) resource) temporary impacts may occur during construction	Coordinate with Denver Parks and Recreation and provide trail detours and ADA-compliant detour signage during construction consistent with the 2007 Denver Construction Detour Standards for Bikeways and Multi-Use Trails	CDOT Engineering/ Developer	During construction	ROD, Section 9.8, p. 154
52	Parks and recreational resources	South Platte River Greenway (Section 6(f) resource) temporary impacts may occur during construction	Return Greenway to pre-construction or comparable state following construction	CDOT Engineering/ Developer	During construction/ post-construction	Final EIS, Section 5.9, p. 5.9-22
53	Parks and recreational resources	South Platte River Greenway (Section 6(f) resource) temporary impacts may occur during construction	If new trail construction or full trail reconstruction is required, coordinate with Denver Parks and Recreation during the design and construction phase to ensure that all trail construction meets current standards.	CDOT Engineering/ Developer	Final design/ during construction	ROD, Section 9.8, p. 154

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Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
54	Parks and recreational resources	0.95 acre of impact to Swansea Elementary School	Use remnants of adjacent parcels obtained for right-of-way expansion to reconfigure the school site plan and replace all the playground facilities; this includes closing Elizabeth Street between 46th Avenue and 47th Avenue	CDOT Engineering/ Developer	Final design/ during construction	Final EIS, Section 5.9, p. 5.9-22
55	Parks and recreational resources	Part of Globeville Landing Park will be closed during construction	Return to pre-construction or comparable state following construction	CDOT Engineering/ Developer	During construction/ post-construction	Final EIS, Section 5.9, p. 5.9-22
56	Parks and recreational resources	Globeville Landing Park and South Platte River Greenway temporary impacts may occur during construction	Once final design has occurred and prior to impacts occurring to Globeville Landing Park and the South Platte River Greenway, a Proposal Description/Environmental Screening Form for the temporary non-conforming uses must be completed, submitted, and approved by Colorado Parks and Wildlife (CPW) and the National Park Service (NPS)	CDOT Environmental/ Developer	Pre-construction	ROD, Chapter 9, p. 154
57	Air quality	Fugitive dust during construction could cause temporary impacts	Monitor for particulate matter less than 10 microns in size (PM_{10}), which will allow for the real-time modification or implementation of various dust control measures during construction	CDOT Environmental/ Developer	During construction	Final EIS, Section 5.10, p. 5.10-47
58	Air quality	Fugitive dust during construction could cause temporary impacts	Cover, wet, compact, or use chemical stabilization binding agent to control dust and excavated materials at construction sites	CDOT Environmental/ Developer	During construction	Final EIS, Section 5.10, p. 5.10-47
59	Air quality	Fugitive dust during construction could cause temporary impacts	Use wind barriers and wind screens to reduce the spread of dust from the site	CDOT Environmental/ Developer	During construction	Final EIS, Section 5.10, p. 5.10-47
60	Air quality	Fugitive dust during construction could cause temporary impacts	Have a wheel wash station and/or crushed stone apron at egress/ingress areas to prevent dirt being tracked onto public streets	CDOT Environmental/ Developer	During construction	Final EIS, Section 5.10, p. 5.10-47
61	Air quality	Fugitive dust during construction could cause temporary impacts	Use vacuum-powered street sweepers to remove dirt tracked onto streets	CDOT Environmental/ Developer	During construction	Final EIS, Section 5.10, p. 5.10-47

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Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
62	Air quality	Fugitive dust during construction could cause temporary impacts	Cover all dump trucks leaving sites to prevent dirt from spilling onto streets	CDOT Environmental/ Developer	During construction	Final EIS, Section 5.10, p. 5.10-47
63	Air quality	Fugitive dust during construction could cause temporary impacts	Minimize disturbed areas, particularly in winter	CDOT Environmental/ Developer	During construction	Final EIS, Section 5.10, p. 5.10-47
64	Air quality	MSAT emissions could increase temporarily during construction	Prohibit unnecessary idling of construction equipment	CDOT Environmental/ Developer	During construction	Final EIS, Section 5.10, p. 5.10-47
65	Air quality	MSAT emissions could increase temporarily during construction	Locate construction diesel engines as far away as possible from residential areas	CDOT Environmental/ Developer	During construction	Final EIS, Section 5.10, p. 5.10-47
66	Air quality	MSAT emissions could increase temporarily during construction	Locate construction staging areas close to work sites, while situating them as far away as possible from residential uses	CDOT Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.10, p. 5.10-47
67	Air quality	MSAT emissions could increase temporarily during construction	Require heavy construction equipment to use the cleanest available engines or be retrofitted with diesel particulate control technology	CDOT Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.10, p. 5.10-47
68	Air quality	MSAT emissions could increase temporarily during construction	Use alternatives to diesel engines and/or diesel fuels, such as biodiesel, liquefied natural gas, or compressed natural gas, fuel cells, and electric engines, if applicable.	CDOT Environmental/ Developer	During construction	Final EIS, Section 5.10, p. 5.10-47
69	Air quality	MSAT emissions could increase temporarily during construction	Install engine pre-heater devices to eliminate unnecessary idling for wintertime construction	CDOT Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.10, p. 5.10-47
70	Air quality	MSAT emissions could increase temporarily during construction	Prohibit tampering with equipment to increase horsepower or to defeat an emission control device's effectiveness	CDOT Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.10, p. 5.10-47
71	Air quality	MSAT emissions could increase temporarily during construction	Require construction vehicle engines to be properly tuned and maintained	CDOT Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.10, p. 5.10-47

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Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
72	Air quality	MSAT emissions could increase temporarily during construction	Use construction vehicles and equipment with the minimum practical engine size for the intended job	CDOT Engineering/ Developer	Pre-construction/ during construction	Final EIS, Section 5.10, p. 5.10-47
73	Air quality	Construction fugitive dust could cause temporary impacts	Continue the "sweepbox" program on the highway to achieve the current level of fugitive dust reduction; and enhance street sweeping after snow events to reduce the particulate matter accumulation during operations	CDOT Maintenance/ Developer	Post-construction	Final EIS, Section 5.10, p. 5.10-47
74	Air quality	MSAT emissions could increase temporarily during construction	Optimize signal timing at intersections and along arterial streets near the freeway to reduce vehicle delay and tailpipe emissions	CDOT Engineering/ Developer	Pre-construction/ during construction	Final EIS, Section 5.10, p. 5.10-47
75	Air quality	MSAT emissions could increase temporarily during construction	Implement congestion pricing and commuter incentive programs that reduce peak-period highway congestion and emissions	CDOT HPTE/ Developer	Pre-construction/ during construction	Final EIS, Section 5.10, p. 5.10-47
76	Air quality	MSAT emissions could increase temporarily during construction	Encourage TDM options, such as high-occupancy vehicle lanes and agreements with major employers to promote and implement flexible work programs	CDOT Engineering/ Developer	Pre-construction/ during construction	Final EIS, Section 5.10, p. 5.10-47
77	Energy	5,808 billion Btu consumed during construction	Limit idling of construction equipment	CDOT Environmental/ Developer	During construction	Final EIS, Section 5.11, p. 5.11-7
78	Energy	5,808 billion Btu consumed during construction	Encourage employee carpooling and vanpooling for construction workers	CDOT Engineering/ Developer	During construction	Final EIS, Section 5.11, p. 5.11-7
79	Energy	5,808 billion Btu consumed during construction	Encourage use of closest material sources	CDOT Engineering/ Developer	Pre-construction/ during construction	Final EIS, Section 5.11, p. 5.11-7
80	Energy	5,808 billion Btu consumed during construction	Locate construction staging areas close to work sites, while situating them as far away as possible from residential uses	CDOT Environmental and Engineering/ Developer	Pre-construction/ during construction	Final EIS, Section 5.11, p. 5.11-7

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Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
81	Energy	5,808 billion Btu consumed during construction	Encourage use of cleaner and more fuel-efficient construction vehicles (for example, low sulfur fuel, biodiesel, or hybrid technologies)	CDOT Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.11, p. 5.11-7
82	Energy	5,808 billion Btu consumed during construction	Encourage use of alternative fuels and asphalt binders	CDOT Environmental and Engineering/ Developer	Pre-construction/ during construction	Final EIS, Section 5.11, p. 5.11-7
83	Energy	5,808 billion Btu consumed during construction	Implement traffic management schemes that minimize delays and idling	CDOT Engineering/ Developer	Final design/ pre-construction/ during construction	Final EIS, Section 5.11, p. 5.11-7
84	Energy	70.0 billion Btu consumed per day	Implement energy conservation measures where appropriate, such as energy-efficient electrical system specifications, lighting, mechanical equipment, and building insulation in accordance with CDOT's *Lighting Design Guide* (CDOT, 2006)	CDOT Engineering/ Developer	Final design/ pre-construction/ during construction	Final EIS, Section 5.11, p. 5.11-7
85	Energy	70.0 billion Btu consumed per day	Encourage energy-efficient options for the cover facilities	CDOT Engineering/ Developer	Final design/ pre-construction/ during construction	Final EIS, Section 5.11, p. 5.11-7
86	Noise	Construction noise will present short-term effects to those dwelling units located along the corridor and along designated construction access routes	Implement best management practices (BMPs) to minimize noise during construction, as per FHWA's *Highway Construction Noise Handbook* (2006)	CDOT Environmental/ Developer	During construction	Final EIS, Section 5.12, p. 5.12-62
87	Noise	Construction noise will present short-term effects to those dwelling units located along the corridor and along designated construction access routes	Conduct a benefited receptor survey prior to construction to determine if the recommended noise wall is desired; if the survey results show that the majority of benefitted receptors who respond to the survey desire the noise wall, the noise wall will be optimized and built	CDOT Environmental/ Developer	Final design/ pre-construction/ during construction	Final EIS, Section 5.12, p. 5.12-62

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Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
88	Noise	Number of noise receptors that exceed NAC threshold: • Globeville: 27 • Elyria: 40 (11 increase substantially—by 10 dBA or more) • Swansea: 37 • Stapleton: 0 • Peoria Street: 0 • Montbello: 3 • Aurora: 2	Location and height of feasible and reasonable walls: Elyria: 12 to 20 feet	CDOT Environmental/ Developer	Final design/ during construction	Final EIS, Section 5.12, p. 5.12-62
89	Biological resources	369.2 acres of permanent, direct impact to wildlife habitat; 0.999 acres of permanent impacts and 0.892 acre of temporary impacts to riparian areas	Comply with Senate Bill 40, CDOT Impacted Black-Tailed Prairie Dog Policy, and CDOT Standard Specifications for protection of migratory birds	CDOT Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.13, p. 5.13-26
90	Biological resources	369.2 acres of permanent, direct impact to wildlife habitat; 0.999 acres of permanent impacts and 0.892 acre of temporary impacts to riparian areas	Monitor disturbed sites during construction to identify and treat any noxious weed invasion	CDOT Environmental/ Developer	During construction	Final EIS, Section 5.13, p. 5.13-26
91	Biological resources	369.2 acres of permanent, direct impact to wildlife habitat; 0.999 acres of permanent impacts and 0.892 acre of temporary impacts to riparian areas	Reclaim disturbed areas in phases throughout construction with native grasses and forbs	CDOT Environmental/ Developer	During construction	Final EIS, Section 5.13, p. 5.13-26
92	Biological resources	0.999 acres of permanent impacts and 0.892 acre of temporary impacts to riparian areas	Replace riparian trees at a 1:1 ratio and riparian shrubs at a 1:1 square foot ratio	CDOT Environmental/ Developer	During construction	Final EIS, Section 5.13, p. 5.13-26
93	Biological resources	369.2 acres of permanent, direct impact to wildlife habitat	Conduct a Burrowing Owl survey following CPW protocols no more than 30 days prior to construction if construction in prairie dog colonies will occur between February 1 and August 31; if a nesting pair is discovered, no construction activity will occur within 150 feet of the nest between March 15 and October 31	CDOT Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.13, p. 5.13-26

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Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
94	Biological resources	369.2 acres of permanent, direct impact to wildlife habitat	Eagle nest surveys will be conducted during the appropriate seasons prior to construction beginning near the winter range and known nest sites, then annually between January 1 and April 31 for the remainder of construction, in the event that a Bald and Golden Eagle Protection Act permit is needed	CDOT Environmental/ Developer	Pre-construction/ during construction	ROD, Section 9.11, p. 174
95	Biological resources	369.2 acres of permanent, direct impact to wildlife habitat	Remove or trim vegetation outside of the April 1 to August 31 migratory bird-breeding season	CDOT Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.13, p. 5.13-26
96	Biological resources	369.2 acres of permanent, direct impact to wildlife habitat	Survey areas to be cleared and grubbed, as well as areas within 50 feet of these areas, between April 1 and August 31 for active migratory bird nests within seven days of the work being performed	CDOT Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.13, p. 5.13-26
97	Biological resources	369.2 acres of permanent, direct impact to wildlife habitat	Remove existing nests from structures after August 31 and prior to April 1	CDOT Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.13, p. 5.13-26
98	Biological resources	369.2 acres of permanent, direct impact to wildlife habitat	Monitor structures at least once every three days for any nesting activity between April 1 and August 31	CDOT Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.13, p. 5.13-26
99	Biological resources	369.2 acres of permanent, direct impact to wildlife habitat	Prepare and implement an Integrated Noxious Weeds Management Plan	CDOT Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.13, p. 5.13-26
100	Biological resources	0.999 acres of permanent impacts and 0.892 acre of temporary impacts to riparian areas	Perform botanical surveys for Ute ladies'-tresses orchid and Colorado butterfly plant	CDOT Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.13, p. 5.13-26
101	Floodplains and drainage/ hydrology	Impact to potential ponding areas due to the increased width of the highway, which may increase runoff from I-70	Create detention ponds and implement storm drainage for onsite drainage system improvements	CDOT Engineering and Environmental/ Developer	Final design/ during construction	Final EIS, Section 5.14, p. 5.14-11
102	Floodplains and drainage/ hydrology	The potential ponding areas between Brighton Boulevard and Dahlia Street will be substantially impacted due to lowered profile of the highway	Build a south offsite drainage system to reduce the risk of flooding within the lowered section of I-70, as well as the portion of the watershed between I-70 and the South Platte River	CDOT Engineering/ Developer	Final design/ during construction	ROD, Section 9.12, p. 174

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Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
103	Floodplains and drainage/ hydrology	Potential impacts to South Platte River	Design the outfalls to the South Platte River to have no adverse impact to the floodplain	CDOT Engineering/ Developer	Final design	ROD, Section 9.12, p. 178
104	Floodplains and drainage/ hydrology	Potential conflict with adjacent drainage projects by Denver	Coordinate with adjacent projects to ensure there are no conflicts between the projects	CDOT Engineering/ Developer	Final design	ROD, Section 9.12, p. 178
105	Wetlands, open waters, and other waters of the U.S.	5.507 acres of permanent and 0.081 acre of temporary wetland impacts 0.219 acre of permanent and 0.556 acre of temporary impacts to other waters of the U.S. and open waters	Mitigate unavoidable, permanent impacts at a 1:1 ratio in a wetland mitigation bank in the South Platte River watershed	CDOT Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.15, p. 5.15-13
106	Wetlands, open waters, and other waters of the U.S.	5.507 acres of permanent and 0.081 acre of temporary wetland impacts 0.219 acre of permanent and 0.556 acre of temporary impacts to other waters of the U.S. and open waters	Obtain and follow requirements of Section 404 permitting and Senate Bill 40 certification	CDOT Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.15, p. 5.15-13
107	Wetlands, open waters, and other waters of the U.S.	5.507 acres of permanent and 0.081 acre of temporary wetland impacts 0.219 acre of permanent and 0.556acre of temporary impacts to other waters of the U.S. and open waters	Install temporary erosion control and sediment control BMPs before ground-disturbing activities; permanently stabilize completed areas within seven days	CDOT Environmental/ Developer	Pre-construction/ during construction/ post-construction	Final EIS, Section 5.15, p. 5.15-13
108	Wetlands, open waters, and other waters of the U.S.	5.507 acres of permanent and 0.081 acre of temporary wetland impacts 0.219 acre of permanent and 0.556 acre of temporary impacts to other waters of the U.S. and open waters	Restore wetlands temporarily affected during construction to pre-construction conditions	CDOT Environmental/ Developer	During construction	Final EIS, Section 5.15, p. 5.15-13

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Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
109	Water quality	Stormwater runoff can create erosion and degradation of water quality during and after construction	Implement the following BMPs for erosion and sediment control, dust control, stormwater control, and expansive soils during and after construction: • Silt fences, erosion control blankets • Sediment traps, sediment basins • Soil stockpile management • Temporary diversion structures • Spill prevention and control measures • Regrading • Seeding and revegetating soils and slopes • Mulch protection for new plantings • Stormwater control channels	CDOT Environmental/ Developer	Pre-construction/ during construction/ post-construction	Final EIS, Section 5.16, p. 5.16-17
110	Water quality	Winter maintenance activities use solutions and compounds that could lead to water quality issues from runoff	Prevent over-treating by commencing liquid de-icer application at the beginning of snowfall and no longer pre-treat roads	CDOT Maintenance/ Developer	During construction/ post-construction	Final EIS, Section 5.16, p. 5.16-17
111	Water quality	Winter maintenance activities use solutions and compounds that could lead to water quality issues from runoff	Reduce the application rate of sand and salt mixtures from historic rates by compliance with CDPHE, Air Quality Control Commission's Regulation 16.	CDOT Maintenance/ Developer	During construction/ post-construction	ROD, Section 9.14, p. 184
112	Water quality	Winter maintenance activities use solutions and compounds that could lead to water quality issues from runoff	Apply liquid de-icer products at the lowest application rate that it will remain effective by adherence to CDOT's Standard Operating Guide for Winter Maintenance and Operations.	CDOT Maintenance/ Developer	During construction/ post-construction	ROD, Section 9.14, p. 184
113	Water quality	Winter maintenance activities use solutions and compounds that could lead to water quality issues from runoff	Completely remove sand/salt within the "core" sweeping area within four days of snow events, as per DRCOG and CDOT regulations; only 35 percent removal outside the "core" areas is required; for the past two years, it has been CDOT practice to remove all remaining sand/salt from the study area even though it is not in the "core" sweeping area—and CDOT will continue to do so	CDOT Maintenance/ Developer	During construction/ post-construction	Final EIS, Section 5.16, p. 5.16-17

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Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
114	Water quality	Winter maintenance activities use solutions and compounds that could lead to water quality issues from runoff	Perform fleet upgrades that include on-board computers to track the amount of mixture being applied, as well as rates of application of de-icing materials; this technology prevents over-treating; the majority of the CDOT Region 1 fleet is currently equipped with these computers	CDOT Maintenance/ Developer	During construction/ post-construction	Final EIS, Section 5.16, p. 5.16-17
115	Water quality	Winter maintenance activities use solutions and compounds that could lead to water quality issues from runoff	Utilize only de-icing and anti-icing products which are on the Pacific Northwest Snow Fighters Approved Product List. Use product application rates which conform to the manufacturer's recommendations and air and water quality regulations.	CDOT Maintenance/ Developer	During construction/ post-construction	ROD, Section 9.14, p. 185
116	Water quality	Winter maintenance activities use solutions and compounds that could lead to water quality issues from runoff	Stockpile solid mixtures at the I-70 and Havana Street CDOT maintenance facility; the mixtures are kept under domes to protect them from precipitation, which prevents water high in salts from running off into receiving waters	CDOT Maintenance/ Developer	During construction/ post-construction	Final EIS, Section 5.16, p. 5.16-18
117	Water quality	Winter maintenance activities use solutions and compounds that could lead to water quality issues from runoff	Perform quality assurance audits on de-icing mixtures several times per year to ensure elevated levels of harmful anti-caking compounds are not found in the mixtures	CDOT Maintenance/ Developer	During construction/ post-construction	Final EIS, Section 5.16, p. 5.16-18
118	Water quality	Winter maintenance activities use solutions and compounds that could lead to water quality issues from runoff	Train snowplow drivers annually, stressing the importance of meeting or exceeding water quality and air quality permit requirements	CDOT Maintenance/ Developer	During construction/ post-construction	Final EIS, Section 5.16, p. 5.16-18
119	Water quality	Winter maintenance activities use solutions and compounds that could lead to water quality issues from runoff	Use temperature gauges built into trucks and roadway surfaces to assist with making decisions related to de-icing application rates and mixes	CDOT Maintenance/ Developer	During construction/ post-construction	Final EIS, Section 5.16, p. 5.16-18
120	Water quality	Winter maintenance activities use solutions and compounds that could lead to water quality issues from runoff	Use vacuum sweepers, not side-cast sweepers, as part of ongoing fleet upgrades; trash within the right of way is picked up prior to each sweeping	CDOT Maintenance/ Developer	During construction/ post-construction	Final EIS, Section 5.16, p. 5.16-17
121	Water quality	Winter maintenance activities use solutions and compounds that could lead to water quality issues from runoff	Rely on cameras/ITS systems to determine problem areas during each storm event	CDOT Maintenance/ Developer	During construction/ post-construction	Final EIS, Section 5.16, p. 5.16-18

Exhibit 14 Central 70 Project Mitigation Measures

Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
122	Water quality	Increase in runoff TSS loads of six percent to the South Platte River Increase in runoff TSS loads of 18 percent to Sand Creek	Provide permanent water quality control features (i.e., extended detention pond) as part of the project to treat stormwater runoff from the highway	CDOT Engineering and Environmental/ Developer	Final design/ during construction/ post-construction	Final EIS, Section 5.16, p. 5.16-17
123	Water quality	Increase in runoff TSS loads of six percent to the South Platte River Increase in runoff TSS loads of 18 percent to Sand Creek	Consider environmentally friendly techniques to provide water quality treatment	CDOT Environmental/ Developer	Final design/ during construction/ post-construction	Final EIS, Section 5.16, p. 5.16-17
124	Water quality	Increase in runoff TSS loads of six percent to the South Platte River Increase in runoff TSS loads of 18 percent to Sand Creek	Treat runoff prior to entering the South Platte River and Sand Creek in conformance with CDOT's MS4 Permit and New Development and Redevelopment Program	CDOT Environmental/ Developer	Final design/ during construction/ post-construction	Final EIS, Section 5.16, p. 5.16-17
125	Geology and soils	Excavation is anticipated to extend below the depth of groundwater from approximately the UPRR to Columbine Street	Prevent groundwater infiltration into the lowered section of the highway; install underdrain pipes below the pavement to drain any additional groundwater that still enters the lowered section	CDOT Engineering/ Developer	Final design/ during construction/ post-construction	Final EIS, Section 5.17, p. 5.17-9
126	Geology and soils	Temporary impacts to groundwater during excavation	Dewater during the construction process	CDOT Engineering/ Developer	During construction	Final EIS, Section 5.17, p. 5.17-9
127	Hazardous materials	34 hazardous materials sites affected; 750 acres of land disturbed	Before right-of-way acquisition, conduct a Phase I Environmental Site Assessment (Phase I) or initial site assessment for those properties identified for acquisition; based on these assessments, additional subsurface investigation may be required depending on the recognized environmental conditions identified and potential risk to the project	CDOT Environmental/ Developer	Prior to property acquisition	Final EIS, Section 5.18, p. 5.18-19
128	Hazardous materials	34 hazardous materials sites affected; 750 acres of land disturbed	Avoid contaminated sites wherever practical; where unavoidable, initiate further site investigation and coordination with affected property owners	CDOT Engineering and Environmental/ Developer	Final design/ during construction	Final EIS, Section 5.18, p. 5.18-19
129	Hazardous materials	34 hazardous materials sites affected; 750 acres of land disturbed	Follow CDOT *Standard Specifications for Road and Bridge Construction*, Section 250, Environmental, Health and Safety Management	CDOT Engineering and Environmental/ Developer	During construction	Final EIS, Section 5.18, p. 5.18-19

Exhibit 14 Central 70 Project Mitigation Measures

Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
130	Hazardous materials	Potential impact to Vasquez Boulevard/ I-70 Superfund site	Coordinate with and obtain approval from the U.S. Environmental Protection Agency (EPA) and CDPHE, as necessary, when construction occurs in the Vasquez Boulevard/I-70 Superfund site	CDOT Engineering and Environmental/ Developer	Final design/ pre-construction/ during construction	ROD, Section 9.15, p. 186
131	Hazardous materials	Extensive excavation through a known landfill that contains contaminants	Follow Tri-County Health Department Health and Safety Practices during construction on or near former landfills	CDOT Environmental/ Developer	During construction	Final EIS, Section 5.18, p. 5.18-19
132	Hazardous materials	33 hazardous materials sites affected; 719 acres of land disturbed	Conduct appropriate surveys for asbestos, lead-based paint, and universal wastes prior to demolition of any building structures and bridges or elevated structures; if these materials are encountered, remove them in accordance with applicable regulations and guidelines; if asbestos-containing material (ACM) is encountered, including buried utilities, follow CDOT Specification 250.07, Asbestos-Containing Material Management and CDOT Asbestos-Contaminated Soil Management Standard Operating Procedure; additionally, depending on the type of ACM, clean up this material in accordance with either Section 5.5 of the Solid Waste Regulations, or Regulation No. 8 of the Air Quality Control Commission Regulations	CDOT Environmental/ Developer	During property acquisition/ pre-construction/ during construction	Final EIS, Section 5.18, p. 5.18-19
133	Hazardous materials	33 hazardous materials sites affected; 719 acres of land disturbed	Update contaminated sites search databases to reflect most recent records	CDOT Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.18, p. 5.18-19
134	Hazardous materials	33 hazardous materials sites affected; 719 acres of land disturbed	Prepare and implement a project-specific Health and Safety Plan and Materials Management Plan to address potential hazardous materials that are encountered during construction; these plans will consist of specific measures to protect worker and public health and safety, as well as programs to manage contaminated materials during construction	CDOT Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.18, p. 5.18-19

Exhibit 14 Central 70 Project Mitigation Measures

Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
135	Hazardous materials	Construction at hazardous materials sites also may affect the construction budget and schedule, particularly if previously unidentified contamination is found	In the event that unknown contaminated media is encountered during construction, stop working until the contamination is properly evaluated and measures are developed to protect worker health and safety in accordance with the project-specific Health and Safety Plan and Materials Management Plan	CDOT Environmental/ Developer	During construction	Final EIS, Section 5.18, p. 5.18-19
136	Hazardous materials	Construction activities at hazardous materials sites have the potential to spread soil or groundwater contamination	Implement standard construction measures for fugitive dust control, as well as stormwater erosion and sediment controls, to minimize the spread of contaminated soil; during the construction phase, require the Developer to file and abide by a dust management plan to minimize the effects of dust on surrounding communities; additionally, conduct air monitoring to determine whether dust control efforts are successful in preventing violations of air quality standards	CDOT Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.18, p. 5.18-20
137	Hazardous materials	Construction activities at hazardous materials sites have the potential to spread soil or groundwater contamination	Obtain a CDPHE Colorado Discharge Permit System (CDPS) Construction Dewatering Permit, Remediation Activities Discharging to Surface Water or Construction Activities Discharging to Ground Water, as required, utilizing readily available data; the selected Developer will follow the permit requirements	CDOT Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.18, p. 5.18-20
138	Hazardous materials	Construction activities at hazardous materials sites have the potential to spread soil or groundwater contamination	If this alternative requires permanent dewatering, obtain and follow the necessary CDPS Dewatering Permits; under the temporary construction and permanent feature dewatering permits, treat and discharge source water onsite in accordance with the permit or characterize and remove source water offsite to a permitted disposal facility	CDOT Environmental/ Developer	Pre-construction/ during construction/ post-construction	Final EIS, Section 5.18, p. 5.18-20
139	Hazardous materials	Construction at hazardous materials sites also may affect the construction budget and schedule, particularly if previously unidentified contamination is found	Properly abandon and close monitoring wells or septic systems disturbed during construction activities in accordance with applicable regulations and guidelines; if existing monitoring wells are impacted during construction, the project will replace them, as necessary	CDOT Environmental/ Developer	Pre-construction/ during construction	Final EIS, Section 5.18, p. 5.18-20

Exhibit 14 Central 70 Project Mitigation Measures

Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
140	Utilities	All utility types will be affected to some extent Construction impacts to utilities will be substantial to accommodate the lowered highway and increased width Offsite stormwater drainage system south of I-70 will cause additional impacts to utilities and result in major benefit to address an existing deficiency	Minimize service disruptions by connecting to active utilities, and scheduling to coincide with periods of lower demand	CDOT Utilities/ Developer	During construction	Final EIS, Section 5.19, p. 5.19-26
141	Utilities	All utility types will be affected to some extent Construction impacts to utilities will be substantial to accommodate the lowered highway and increased width Offsite stormwater drainage system south of I-70 will cause additional impacts to utilities and result in major benefit to address an existing deficiency	Encase or provide protective cover over any impacted underground utilities	CDOT Utilities/ Developer	During construction	Final EIS, Section 5.19, p. 5.19-26
142	Utilities	All utility types will be affected to some extent Construction impacts to utilities will be substantial to accommodate the lowered highway and increased width Offsite stormwater drainage system south of I-70 will cause additional impacts to utilities and result in major benefit to address an existing deficiency	Coordinate with utility owners and operators to identify construction requirements and financial responsibilities for relocations	CDOT Utilities/ Developer	Pre-construction/ during construction	Final EIS, Section 5.19, p. 5.19-26

Exhibit 14 Central 70 Project Mitigation Measures

Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
143	Utilities	All utility types will be affected to some extent Construction impacts to utilities will be substantial to accommodate the lowered highway and increased width Offsite stormwater drainage system south of I-70 will cause additional impacts to utilities and result in major benefit to address an existing deficiency	Identify and improve any utility concerns that can be addressed as part of project implementation	CDOT Utilities/ Developer	Final design/ pre-construction/ during construction	Final EIS, Section 5.19, p. 5.19-26
144	Utilities	All utility types will be affected to some extent Construction impacts to utilities will be substantial to accommodate the lowered highway and increased width Offsite stormwater drainage system south of I-70 will cause additional impacts to utilities and result in major benefit to address an existing deficiency	Integrate above-ground utilities that are impacted by the project into the design, hide them from sight within the design, and/or design them to be aesthetically pleasing to the greatest extent practical	CDOT Utilities/ Developer	Final design/ during construction	Final EIS, Section 5.19, p. 5.19-26
145	Utilities	All utility types will be affected to some extent Construction impacts to utilities will be substantial to accommodate the lowered highway and increased width Offsite stormwater drainage system south of I-70 will cause additional impacts to utilities and result in major benefit to address an existing deficiency	Move above-ground utilities underground to the greatest extent practical	CDOT Utilities/ Developer	Final design/ pre-construction/ during construction	Final EIS, Section 5.19, p. 5.19-26
146	Section 4(f)—Recreation Resources	Use of Swansea Elementary School Public Playground	Use remnants of adjacent parcels obtained for right-of-way expansion to reconfigure the school site plan and replace all the playground facilities; this includes closing Elizabeth Street between 46th Avenue and 47th Avenue	CDOT Engineering/ Developer	During construction	Final EIS, Chapter 7, p. 7-105

Exhibit 14 Central 70 Project Mitigation Measures

Mitigation #	Mitigation Category	Impact	Mitigation Commitment	Responsible Branch	Timing/Phase of Construction Mitigation	Source Document
147	Section 4(f)—Recreation Resources	Use of Globeville Landing Park	Return to pre-construction or comparable state following construction	CDOT Environmental/ Developer	Pre-construction	Final EIS Chapter 7, p. 7-106
148	Section 4(f)—Historic Resources	Use of 22 historic resources, which includes 9 *de minimis* impact determinations	Implement other mitigation measures, as identified, in consultation with SHPO and consulting parties as described in the PA	CDOT Environmental	Pre-construction/ during construction	Final EIS, Chapter 7, p. 7-106

Chapter 6 Federal, State, and Local Permits and Approvals

Transportation projects must comply with a wide range of federal and state environmental laws and regulations, permits, reviews, notifications, consultations, and other approvals. This chapter describes the federal determinations and other monitoring and enforcement requirements for the Central 70 Project, including:

- Air Quality Transportation Conformity
- Section 106 Consultation
- Section 6(f) of the Land and Water Conservation Fund Act
- Section 4(f) of the Department of Transportation Act of 1966
- Environmental Justice
- Other Determinations—includes permits and certifications, such as the Clean Water Act Section 404 Permit and the Senate Bill 40 (SB 40) Certification
- Monitoring and Enforcement—permits and approvals necessary for the project

FHWA and CDOT will monitor this project to ensure that permits, approvals, and mitigation measures contained in this document (and subsequent permits) are implemented. Copies of this document will be provided to responsible public agencies and CDOT project personnel. Commitments within this document will be implemented through the inclusion of these measures in the construction plans for the project.

6.1 Air Quality Transportation Conformity

Transportation conformity applies to federally funded projects, as established by the Clean Air Act (CAA) Amendments of 1990. Conformity applies at both a regional and project level in air quality nonattainment and attainment/maintenance areas. The I-70 East Project is in a nonattainment area for ozone, and an attainment/maintenance area for PM_{10} and carbon monoxide; therefore, it must comply with transportation conformity requirements for these NAAQS.

A project-level conformity determination demonstrates that an individual project does not contribute to any new local violations, increase the frequency or severity of any existing violations, or delay attainment of the NAAQS or any required interim emission reductions or other milestones. A project-level conformity determination includes:

- Central 70 Project is included in a conforming Fiscally Constrained RTP and a Transportation Improvement Program (TIP) with a consistent design concept and scope. The regional emissions analysis at the RTP and TIP level demonstrates that regional emissions are within the limits set by the State Implementation Plan (SIP)

- Hot-spot analyses in CO and PM_{10} nonattainment and attainment/maintenance areas
- Compliance with control measures in the PM_{10} SIP

As described in the following subsection, the Central 70 Project has been determined to not cause an exceedance of any NAAQS. The proposed project will not contribute to any new local violations, increase the frequency or severity of any existing violation, or delay timely attainment of the NAAQS or any required interim emissions reductions or other milestones. This project complies with the transportation conformity regulations in 40 CFR §93 and with the conformity provisions of Section 176(c) of the CAA.

6.1.1 Regional Air Quality Evaluation for the Proposed Action (Central 70 Project)

The project is included in the DRCOG 2016-2021 TIP (https://drcog.org/sites/drcog/files/resources/DRCOG%202016-2021%20TIP-Amended%20January%2027%202016_0.pdf) and the 2040 RTP (http://coloradotransportationmatters.com/wp-content/uploads/2015/03/DRCOGFinalRTP_02-18-15.pdf), which were found to conform to the carbon monoxide, PM_{10}, and ozone SIPs. The design and scope of the Central 70 Project are consistent with what was used in the regional emissions analysis for the RTP and TIP. A conformity redetermination for the 2040 RTP 2015 Cycle 2 Amendment and amended 2016-2021 TIP was done on November 21, 2016.

6.1.2 Project-Level Air Quality Conformity for the Proposed Action (Central 70 Project)

As described in *Attachment C, Air Quality Conformity Technical Report,* of this document, and shown in **Exhibit 15** and **Exhibit 16**, the analysis demonstrates that the project would meet the transportation conformity requirements because the Central 70 Project does not contribute to any new local violations, increase the frequency or severity of any existing violation, or delay timely attainment of the NAAQS or any required interim emission reductions or other milestones.

Exhibit 15 Carbon Monoxide Hotspot Analysis Results

Analysis Time Period	Time of Day	Carbon Monoxide Concentration in parts per million (ppm)			NAAQS (standard)
		Background	Modeled	Total Background + Modeled	
1 hour	AM	5.5	1.4	6.9	1-hour standard 35 ppm
	PM		1.9	7.4	
8 hour	AM	3.6	0.9	4.5	8-hour standard 9 ppm
	PM		1.2	4.8	

Exhibit 16 PM_{10} Hotspot Analysis Results

Location	PM_{10} Concentration in micrograms per cubic meter ($\mu g/m^3$)				NAAQS (standard)
	Background	Modeled	Total Background + Modeled	Design Value	
I-70 and I-25	113	41.136	154.136	150	24-hour standard 150 $\mu g/m^3$
I-70 in Swansea		40.948	153.948	150	
I-70 and I-225		32.220	145.220	150	

To develop these estimates, the 24-hour PM_{10} design value is rounded per guidance to the nearest 10 $\mu g/m^3$. For example, 155.000 rounds to 160, and 154.999 rounds to 150.

CDPHE-APCD, in its concurrence letter signed January 5, 2017 (see *Attachment B, Updates to Agency Consultation Addendum*), has concurred with the findings of the Central 70 Project project-level conformity analyses that were completed.

The project location is in the moderate nonattainment area for the Denver-North Front Range Area for the 2008 ozone standard. Since ozone is a regional pollutant, there is no hot spot analysis requirement to analyze potential impacts and no possibility of localized violations of ozone to occur at the project level. Emission inventories for the ozone precursors—nitrogen oxides and volatile organic compounds—were shown in Exhibit 5.10-19 and Exhibit 5.10-20 of the Final EIS, and did not need to be updated.

6.2 Section 106 Consultation

CDOT has consulted with the SHPO and consulting parties on determinations of National Register of Historic Places (NRHP) eligibility and effects to historic properties, per 36 CFR §800.8(c), in compliance with Section 106 of the National Historic Preservation Act.

Consulting parties

- State Historic Preservation Office (SHPO)
- Colorado Department of Transportation (CDOT)
- Historic Denver, Inc.
- Colorado Preservation, Inc.
- Denver Landmark Preservation Commission
- Fairmount Heritage Foundation
- Fairmount Cemetery Company

Concurrence on eligibility and determination of effects has been received throughout the project and was most recently received from the SHPO on several dates in 2015 (see *Attachment B, Agency Consultation Addendum,* of the Final EIS for documentation) and concurrence on updated effects after publication of the Final EIS was received in March 2016 (see *Attachment B, Updates to Agency Consultation Addendum,* of this document).

A PA that provides a process to determine appropriate mitigation for adverse effects and to reevaluate eligibility and effects to historic properties, as appropriate, was executed in April 2016. The PA is included in *Attachment D, Section 106 Programmatic Agreement*, of this document.

6.3 Section 6(f) of the Land and Water Conservation Fund Act

Section 6(f) of the LWCF Act of 1965 protects recreational properties that have been purchased or improved with assistance from the LWCF. Globeville Landing Park and the South Platte River Greenway Trail are features of the South Platte River Greenway, which is afforded protection under Section 6(f) of the LWCF Act. The proposed project will have a temporary non-conforming use of the South Platte River Greenway north of I-70 due to construction of an underground drainage system under Section 6(f)(3) of the LWCF Act.

Consultation with CPW and the NPS has been ongoing regarding the Globeville Landing Park and the South Platte River Greenway Trail. As discussed in correspondence with CPW from December 2016, the changes to Globeville Landing Park and the South Platte River Greenway Trail as part of the GLO are considered park improvements/ enhancements, and do not constitute a Section 6(f) conversion (see *Attachment B, Updates to Agency Consultation Addendum*).

The impacts identified to the Globeville Landing Park and South Platte River Greenway Trail, in the Final EIS by the Partial Cover Lowered Alternative's offsite drainage system would not occur as a result of the project. However, the impacts from the construction of both the onsite and offsite drainage systems will result in temporary non-conforming uses under Section 6(f). Conditional approval was received from NPS with the temporary non-conforming uses on January 13, 2017. Once final design has occurred and prior to impacts occurring to Globeville Landing Park and the South Platte River Greenway, a Proposal Description/Environmental Screening Form for the temporary non-conforming uses must be completed, submitted, and approved by CPW and NPS.

6.4 Section 4(f) of the Department of Transportation Act of 1966

Section 4(f) has been part of federal law since 1966, when it was enacted as Section 4(f) of the U.S. Department of Transportation Act. It is codified in 23 USC §138 and 49 USC §303. Section 4(f) of the U.S. Department of Transportation Act declares that, "… [it is] the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites … ."

Prior to making *de minimis* impact determinations under 23 CFR §774.3(b), CDOT and FHWA undertook the following coordination process:

For historic properties:

- The consulting parties identified in accordance with 36 CFR §800 were consulted.
- The FHWA received written concurrence from the SHPO in a finding of "No Adverse Effect" or "No Effect" in accordance with 36 CFR §800. The FHWA informed these officials of its intent to make a *de minimis* impact determination based on their

concurrence in the finding of "No Adverse Effect" or "No Historic Properties Affected."

- Public notice and the opportunity to comment were made available as required by 36 CFR §800.

There are no *de minimis* impact determinations for the parks, recreation areas, and wildlife and waterfowl refuges under the Central 70 Project.

The updates to the Section 4(f) approval are included in this document in Chapter 10, Section 4(f) Updates.

The FHWA conducted the necessary consultation with SHPO and the Department of the Interior as part of the Final EIS process and has determined that there is no feasible and prudent avoidance alternative and the Central 70 Project includes all possible planning to minimize harm to the Section 4(f) properties resulting from such use.

6.5 Environmental Justice

After considering the benefits of the Central 70 Project along with the avoidance, minimization, and mitigation, the alternative will not cause disproportionately high and adverse effects on any minority or low-income populations, in accordance with the provisions of Executive Order 12898 and FHWA Order 6640.23A. No further environmental justice analysis is required. See *Section 5.3, Environmental Justice,* of the Final EIS for more information.

6.6 Other Determinations

Wetlands and other waters of the U.S. within the area require a Nationwide Permit 14 (Linear Transportation Projects) because the permanent impacts to jurisdictional wetlands and other waters of the U.S. are less than the Section 404 Individual Permit threshold of 0.5 acre.

Per the Endangered Species Act, Section 7, a *no effect* determination is made for the Preble's meadow jumping mouse (PMJM), the black-footed ferret, and for all five Platte River Species. A *may affect, not likely to adversely affect* determination is made for the Ute ladies'-tresses orchid and the Colorado butterfly plant. It is also determined that the proposed project would not result in the "take" of Bald Eagles, as described in the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act.

There are no prime and unique farmlands present in the study area; therefore, no analysis was done per the Farmland Protection Policy Act.

6.7 Monitoring and Enforcement

Permits required for the project will be coordinated with the appropriate jurisdiction and obtained prior to construction. Required permits and approvals for the project are likely to

include those shown in **Exhibit 17**. Additional permits may be required and must be obtained.

Additional local permits may be required in concert with activities such as:

- Erosion control/grading
- Utility access, relocation, or surveying
- Construction, slope, and utility easements
- Access and authorizations

Exhibit 17 Summary of Permits and Approvals Necessary for the Project

Environmental Approvals	Purpose	Permitting Agency/ Approval Agency
Air Pollutant Emission Notice	For determining whether an air quality permit is needed; identifies sources of and levels of emissions from new construction and whether any emission elements are regulated pollutants	CDPHE, APCD
Stationary Source Air Quality Permit	For emissions from potable units, rock crushers, generators, asphalt plants, and cement plants used during construction	CDPHE, APCD
Fugitive Dust Permit	For fugitive dust emissions due to construction activities	CDPHE, APCD
Asbestos Abatement Permit	For abatement of friable asbestos when the quantity of ACM exceeds the trigger levels	CDPHE, APCD
Demolition permits	For demolition of any building and other structures	CDPHE and all applicable governmental authorities
Historic Structures Demolition Permit	For demolition of any structures that are at least 120 square feet and 1.5 stories in height which are located in the Denver city limits; the Landmark Preservation Office reviews the structure and determines whether the structure qualifies for landmark designation	Denver Landmark Preservation Commission
Construction Noise Permit	For noise resulting from construction activities	All applicable governmental authorities
Temporary Noise Variance	For allowing a temporary variance for noise generated from construction activities to adhere to local noise ordinances	All applicable governmental authorities
Clean Water Act Section 402 Construction Dewatering Permit	For groundwater or surface waters encountered during construction that must be discharged or dewatered	CDPHE, Water Quality Control Division (WQCD)
Construction Activities Stormwater Discharge Permit	For stormwater runoff from construction activities that include clearing, grading, grubbing, and demolition that will exceed one acre of disturbance.	Denver Wastewater Management
Colorado Discharge Permit System Stormwater Construction Permit	For stormwater discharges and erosion/sediment control	CDPHE, WQCD
Municipal Separate Storm Sewer System (MS4) Discharge Permit (CDOT MS4 discharge requirements)	For discharges of stormwater from storm sewer systems of CDOT highway drainage systems; CDOT discharge requirements are outlined in Colorado Discharge Permit Regulations Permit COS-000005 and COR-030000	CDPHE, WQCD
Municipal Separate Storm Sewer System (MS4) Discharge Permit (outside CDOT right of way)	For discharges of stormwater from regulated small municipal separate storm sewer systems (MS4s)	All applicable governmental authorities
Subterranean Groundwater Permit	For discharges of source water from subterranean structures (basement, foundation, footer drains, etc.) and/ or well development water to waters of the state	CDPHE, WQCD

Exhibit 17 Summary of Permits and Approvals Necessary for the Project

Environmental Approvals	Purpose	Permitting Agency/ Approval Agency
Construction Dewatering Permit	For discharges of ground water from construction in wet areas or excavating; allows for ground water to be discharged to surface water or back to the ground	CDPHE, WQCD
Remediation Activities Discharging to Surface Waters Permit	For discharges of remediation activities to surface waters of the state	CDPHE, WQCD
Remediation Activities Discharging to Groundwater	For discharges of remediation activities to groundwater	CDPHE, WQCD
Substitute Water Supply Plan	For temporary subscription to water rights for use of wells operating within the South Platte River Basin	Colorado Division of Water Resources
Notice of Intent to Construct Dewatering Wells	For constructing or re-constructing a dewatering well; does not include water rights	Colorado Division of Water Resources
Notification as Resource Conservation and Recovery Act (RCRA) Generator	For any projects that generates hazardous waste of three gallons or more in a calendar year of used solvents that are in the hazardous waste categories: F004, F002, or F005	CDPHE Hazardous Materials and Waste Management Division
Stormwater Quality Discharge Permit for Construction Activities	For discharges of stormwater from construction sites disturbing greater than one acre	City of Aurora
Sewer Use and Drainage Permit	For each building and/or individual tenant in a project; permits must be obtained prior to construction	Denver
Well Abandonment Report (GWS-09)	For plugging and sealing of permitted wells, monitoring or other holes	State of Colorado, Office of State Engineer
Black-Tailed Prairie Dog Removal Permit	For removal and relocation of black-tailed prairie dogs	CPW
SB40 Certification/Approval	For projects funded by state monies or implemented by state agencies that will result in impacts to stream banks, stream channels, and riparian areas	CPW
Nest Take Permit	For removal or relocation of Bald or Golden Eagle nests	U.S. Fish and Wildlife Service (USFWS)
Clean Water Act Section 404 Permit	For impacts to jurisdictional waters of the United States	USACE
Special Use Permit	For installation of utilities, or the performance of other types of work, within the state highway right of way	CDOT
Proposal Description/Environmental Screening Form	Approval for temporary non-conforming uses of 6(f) properties	CPW and NPS

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Chapter 7 Community Outreach and Agency Involvement

As outlined in *Chapter 10, Community Outreach and Agency Involvement,* of the Final EIS, CDOT has conducted continuous community outreach on the I-70 East Project for more than 13 years, including door-to-door outreach and public and neighborhood meetings in the most directly impacted neighborhoods. Since the beginning of the project, alternatives and mitigation have continuously been refined as a result of feedback from the impacted communities and local governments.

7.1 Community Outreach since the Final EIS

The project team continued agency involvement and community outreach efforts after publication of the Final EIS. After the release of the Final EIS, CDOT held two public hearings during the Final EIS public review, offered workshops and meetings focused on the highway cover and aesthetics, opened a right-of-way project office within the most impacted neighborhood, and continued participating in community functions.

The review period began on January 15, 2016, and was scheduled to end on February 16, 2016, but because of multiple requests for additional time, the review period was extended through March 2, 2016. During the Final EIS review period from January 15, 2016, to March 2, 2016, 730 public and agency comment submissions were received. Many of these submittals included multiple comments, resulting in thousands of comments. More information on the comments received on the Final EIS and responses to the overarching concerns raised in the substantive comments can be found in Chapter 8, Comments on the Final EIS and Air Quality Documents, of this document.

During the Final EIS review period, two public hearings were held to provide the public with an update of the recent Final EIS study developments, to summarize the Final EIS document available for public review, and to provide an opportunity for public comment. Originally, three public hearings were scheduled for the project; however, one was cancelled due to inclement weather. **Exhibit 18** lists the hearings and number of attendees at each meeting.

Exhibit 18 I-70 East Final EIS Public Hearings

Meeting Date	Meeting Location	Attendees
Monday, February 1, 2016	North Middle School, 12095 Montview Boulevard, Aurora, Colorado	11
Tuesday, February 2, 2016	Adams City High School, 7200 Quebec Parkway, Commerce City, Colorado	Cancelled due to inclement weather
Wednesday, February 3, 2016	Bruce Randolph Middle School, 3955 Steele Street, Denver, Colorado	213

CDOT, in partnership with DPS and Denver, organized a cover planning workshop, held on April 7, 2016. The workshop was held to gather public thoughts on the cover design and the features that will be included. The project team also presented design concepts for other design elements throughout the corridor, including noise walls, retaining walls, and gateway elements.

Instead of the monthly Community Leaders meetings, the project team began to offer extended office hours on the first and third Wednesdays of the month from 4:30 p.m. until 6:30 p.m. at the I-70 East/Central 70 Project Right-of-Way Office. This started on April 6, 2016, and was made known to the public through the project website, e-mail blasts, the project kiosk, and flyers available at community centers and community functions. Project staff are available to provide project updates and answer questions during these new extended office hours. The right-of-way project staff also started extended office hours within the neighborhood and distributed right-of-way office information and hours through mailers in the neighborhood.

Additionally, as part of the outreach effort, the project team reserved tables at community functions—such as the RTD station opening event on April 23, 2016, the Swansea Elementary School Carnival on May 14, 2016, and the Growhaus Denver Days on August 6, 2016—to provide information about the project.

7.2 Future Outreach Plans

The I-70 East project team has been, and continues to be, committed to community outreach and involvement through the environmental planning process and throughout all phases of construction. The developer will be:

- Required to employ a bilingual community liaison who has extensive knowledge of the Elyria and Swansea Neighborhood to last through the duration of construction
- Responsible for preparing and implementing a Strategic Communications Plan, in collaboration with CDOT, that will outline how important information will be communicated to stakeholders
- Tasked to establish a communications team and hold regular meetings with CDOT to discuss any public information and outreach tasks

The plan will include the following individual plans to assure well-coordinated communications throughout each phase of the project:

- Construction Period Communications Plan
- Maintenance and Operations Communications Plan
- Crisis Communications Plan

Each of the plans will include communications strategies, primary stakeholder lists, and identification of any public information issues and proposed outreach.

A variety of approaches and tools will be used to assure proper communication to stakeholders and the public about project schedule, progress, and construction impacts, and any potential issues that may arise, including:

- Phone and email
- Public meetings
- Business meetings
- Social media
- Stakeholder distribution list
- Tours and communication events
- Lane closure reports
- Traffic alerts
- Web page updates
- Project newsletters
- Translation and bilingual communication for people whose primary language is one other than English
- Public communication materials
- Photos/videos
- Project identification signing

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Chapter 8 Comments on the Final EIS and Air Quality Documents

This section summarizes the comments that were received during the review periods for the Final EIS and air quality documents and responds to the overarching concerns raised in the substantive comments.

8.1 Overview of Comments Received on the Final EIS

The review period for the Final EIS began on January 15, 2016, and was scheduled to end on February 16, 2016, but because of multiple requests for additional time, the review period was extended through March 2, 2016. During the review period, 730 submissions were received from the public, stakeholders, and agencies. Many of these submittals included multiple comments and some commenters made multiple submissions. There were 591 commenters. Comments on the Final EIS were submitted through a variety of methods, as described in **Exhibit 19**.

Exhibit 19 Number of Comments by Submission Type

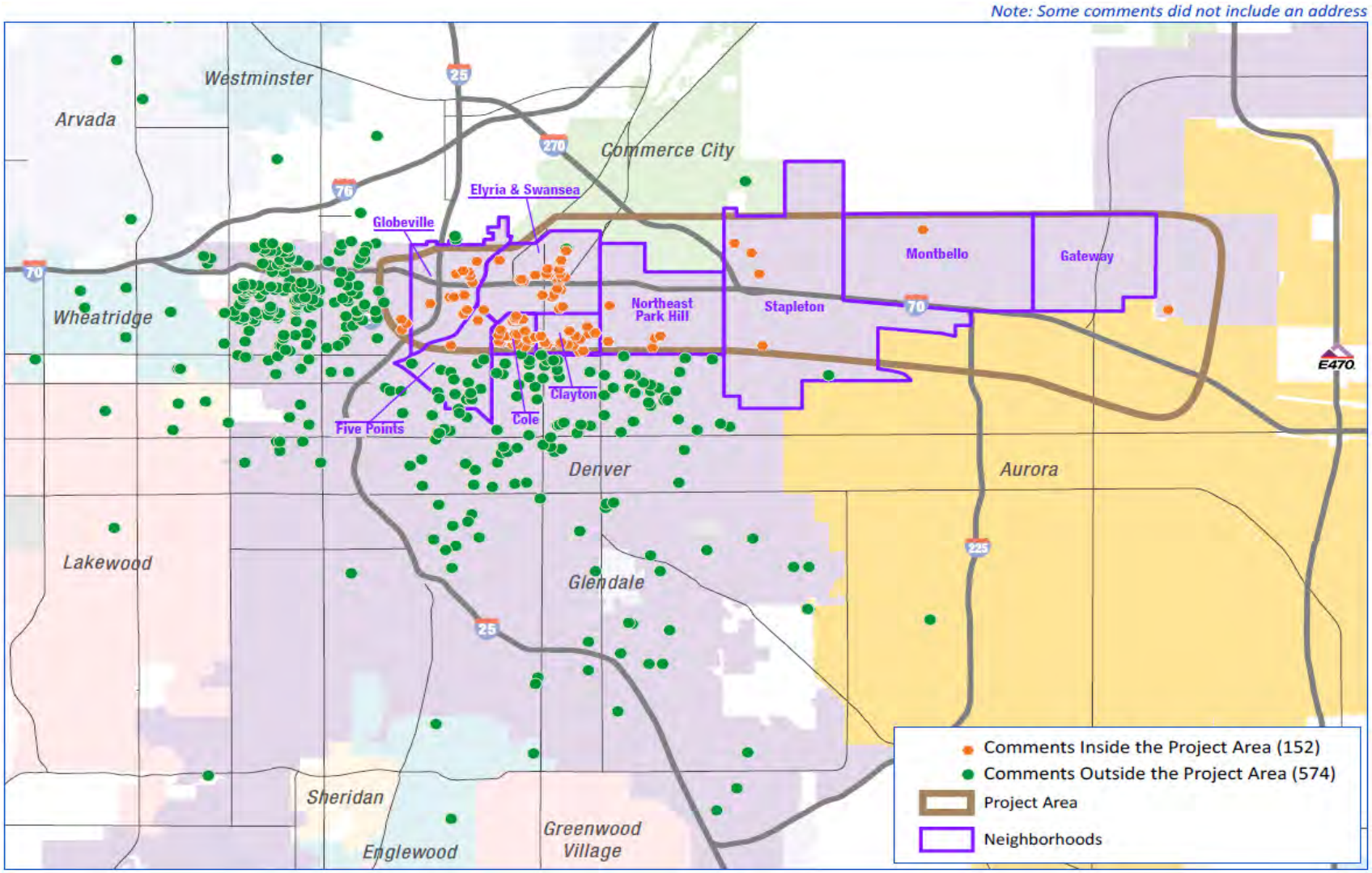
Submission Type	Number of Submissions	Submission Description
Website	524	Online feedback form through the project website
Email	107	Email to contactus@i-70east.com
Letter	20	Letter sent or delivered to CDOT or FHWA
Comment form	18	Comment forms received at the public hearings
Verbal	61	Testimony from the public hearings
Total	**730**	

All comments in their entirety are included in this document in *Attachment E, Comments on the Final EIS,* organized into the following groups: Agencies and Elected Officials, Businesses and Special Interest Groups, and Citizens. Comments within each group are ordered alphabetically; citizens are alphabetized by last name. A summary of the number of comments received by type is shown in **Exhibit 20**. The locations from which comments were submitted are shown in **Exhibit 21**.

Exhibit 20 Number of Commenters

Submitter Type	Number of Submissions
Agencies and Elected Officials	14
Businesses and Special Interest Groups	20
Citizens	557
Total	**591**

Exhibit 21 I-70 East Final EIS Comment Submittal Locations



8.2 Overview of Comments Received on the Air Quality Documents

The review period for the air quality documents began on December 16, 2016 and concluded on January 14, 2017. During the review period, 151 submissions were received from the public, stakeholders, and agencies. Many of these submittals included multiple comments and some commenters made multiple submissions. There were 130 commenters.

All comments received during the review period for air quality are included in this document in *Attachment F, Comments on the Air Quality Documents*, ordered alphabetically; citizens are alphabetized by last name.

8.3 Substantive Comments

This document only responds to the overarching concerns raised in the substantive comments received on the Final EIS and air quality comments, in accordance with CEQ regulations at 40 CFR §1503.4.

Generally, a comment is considered substantive if it raises specific issues or concerns regarding the project or the study process. If the comment merely expresses opinions or support for/against the project or a particular alternative, then it is not considered substantive.

For the comments, the following criteria were used to determine whether a comment was substantive:

1. Requires clarification or modification of an alternative or mitigation measure
2. Requires development of an alternative that was not previously considered
3. Identifies absence of analysis that should have been done; or identifies needed improvements, flaws, or modifications to the analysis that was done
4. Recognizes an issue that is out of scope for the project, but which warrants a response
5. Identifies an issue or contextual error that can be resolved through clarification
6. Identifies procedural issues or other issues requiring a response

In some instances, comments were not considered substantive but responses were included to clarify issues that were frequently commented on.

8.4 Approach Used to Summarize and Respond to Comments

At the close of the review period, each submission was reviewed to identify the substantive comments. Some submissions contained no substantive comments; others contained many separate substantive comments.

FHWA and CDOT considered all comments, whether one person or 100 people submitted a particular comment. Receipt of a large or small number of comments expressing a particular idea, preference, or opinion does not make the expressed view more or less valid.

The consideration of public comments is not a vote-counting process in which the outcome is determined by the majority opinion. Relative depth of feeling and interest among the public can serve to provide a general context for decision-making. However, it is the appropriateness, specificity, and factual accuracy of comment content that serves to provide the basis for modifications to planning documents and decisions. Further, because commenters are self-selected, they do not constitute a random or representative public sample. NEPA encourages all interested parties to submit comments as often as they wish regardless of age, citizenship, or eligibility to vote. Commenters may, therefore, include business owners or employees; people from outside the project area, including those living in other countries; children; and people who submit multiple comments. Every substantive comment and suggestion has value, whether expressed by one commenter or many.

Following federal regulations (40 CFR §1503.4), not every comment is responded to. The comments were reviewed to identify substantive comments, which then were addressed. Although each substantive comment was not responded to individually, the substantive comment topic was identified and responded to. A summary of the overall concerns raised in the substantive comments received, sorted by topic, is provided below in **Exhibit 22**. Responses are found following the exhibit according to the page numbers listed in the far right column.

Exhibit 22 Concerns Raised within the Substantive Comments Received on the Final EIS

Comment Topic		Page #
General Topics		
GEN1	Scope of the purpose and need statement	84
GEN2	Determining boundaries for the I-70 East Project	85
GEN3	Use of the American Planning Association's Peer Review	86
GEN4	Local hiring	86
GEN5	The effects of public comments	86
GEN6	Final EIS review period	87
GEN7	Air quality documents review period	88
GEN8	No predetermined outcomes	90
GEN9	Inclusion in regional planning documents	90
Outreach Efforts		
OUT1	Public involvement to date	91
OUT2	Future public involvement and outreach	94
Alternatives Analysis		
ALT1	No-Action Alternative	94

Exhibit 22 Concerns Raised within the Substantive Comments Received on the Final EIS

Comment Topic		Page #
ALT2	Alternatives development and determining reasonable alternatives	95
ALT3	I-270/I-76 Reroute Alternative	96
ALT4	Considerations of future technology	96
Impacts and Mitigation Measures		
IMP1	Mitigation commitments	99
IMP2	Impacts to Swansea Elementary School	102
IMP3	Hazardous materials	103
IMP4	Noise	104
IMP5	Energy consumption during construction	106
IMP6	Traffic during construction	106
Preferred Alternative		
PA1	The highway cover	107
Air Quality and Health		
AQ1	Health impact assessment	108
AQ2	Air quality design values and background concentrations	110
AQ3	Air quality analysis updates and changes in results	111
AQ4	Transportation conformity	113
AQ5	Data and modeling files for air quality analysis	114
AQ6	Air quality and the highway cover	114
AQ7	Air quality monitoring	115
AQ8	Air quality and truck emissions	115
AQ9	$PM_{2.5}$ and nitrogen dioxide	116
AQ10	Greenhouse gases	116
Property Impacts		
PROP1	Property acquisitions	117
PROP2	Replacement housing	118
Environmental Justice Considerations		
EJ1	Environmental justice	118
Transportation and Traffic		
TRANS1	Multi-modal considerations	121
TRANS2	Intersection at 47th Avenue and York Street	121
TRANS3	Traffic forecasting and modeling	122
TRANS4	Highway laneage and width	124
TRANS5	Restricting truck traffic on I-70	125
TRANS6	Future driving trends	126

Exhibit 22 Concerns Raised within the Substantive Comments Received on the Final EIS

Comment Topic		Page #
TRANS7	Transportation Demand Management	127
Funding Strategies		
FUND1	Managed lanes	127
FUND2	Project funding	127
Drainage		
DRAIN1	Preferred Alternative Drainage	129
DRAIN2	Connected actions	132

8.5 Responses to Substantive Comments Received

A list of concerns was prepared and responded to as a way to capture the substantive topics that were commented on. As listed in **Exhibit 22**, these topics include general information, outreach efforts, alternatives analysis, impacts and mitigations, Preferred Alternative, air quality and health, property impacts, environmental justice, transportation and traffic, funding strategies, and drainage.

Responses to substantive comments received on the air quality documents can be found in GEN7, AQ2, AQ3, AQ4, and AQ5.

General Topics

GEN1. Scope of the purpose and need statement

Comments were received that expressed concerns about the limited scope of the purpose and need statement for the I-70 East Project. In general, the purpose and need for a transportation project focuses on the underlying reasons for proposing the transportation project, and, typically, those reasons are based on meeting a transportation need. The purpose and need of a project is essential in establishing a basis for the development of the range of reasonable alternatives required in an EIS and assists with the identification and eventual selection of a preferred alternative. According to FHWA's guidance in Section 6002 of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users, the concept of purpose and need that was established by CEQ does not substantively change. It simply provides examples of some purposes that *can be* included in a purpose and need statement.

For the I-70 East Project, the purpose and need was developed in early 2004, and was reviewed and discussed with the Intergovernmental Coordination and Compliance Committee and the Executive Oversight Committee of the project team. The purpose and need for the project was first presented to the public in draft form for review and input at corridor-wide meetings in February 2004. The original purpose and need of the project included transit elements since the project was a joint effort between FHWA, the Federal

Transit Administration (FTA), CDOT, and the Regional Transportation District (RTD). The highway and transit elements of the project were separated in 2006 due to funding availability and other reasons. The purpose and need also was presented at public meetings held in December 2008 after revisions were made when the transit elements were removed.

The purpose of the project is to implement a transportation solution that improves safety, access, and mobility and addresses congestion on I-70 in the project area. The need for this project results from the following issues:

- Transportation infrastructure deficiencies
- Increased transportation demand
- Limited transportation capacity
- Safety concerns

GEN2. Determining boundaries for the I-70 East Project

Some comments questioned how the project limits were determined and questioned if they were large enough to fully address the issues along I-70. Project limits also are known as logical termini and are defined as: (1) rational end points for a transportation improvement, and (2) rational end points for a review of the environmental impacts.

The I-70 East Project limits extend along I-70 between I-25 and Tower Road, a length of 12 miles. Existing and forecasted traffic volumes were the main factors in determining the project limits on I-70. Forecasted traffic volumes for the year 2035 range from 95,000 vpd to 270,000 vpd between I-25 and Peña Boulevard, declining east of there. The western limit is I-25 because of the high diversion of traffic from I-70 to both northbound and southbound I-25. The 2035 travel demand model forecasted that between 40 percent and 50 percent of traffic traveling westbound on I-70 will divert onto I-25. CDOT has no current or foreseeable future plans to widen I-70 west of the I-25/I-70 interchange in Denver. Tower Road is the eastern limit because the traffic volumes drop substantially east of Peña Boulevard.

The environmental impact review typically covers a broader geographic area than the strict limits of the transportation improvements. For I-70 East, the project area covers locations within Denver, Commerce City, and Aurora. The project area is an approximate one-mile buffer zone around I-70 within the project limits.

In the analysis performed for the EIS, each resource has a specific study area. Those study areas may be the same as the project area or construction limits of the evaluated alternatives, depending on the resource. The project area was primarily identified to initiate this study and identify possible project alternatives. Not all resources will be evaluated for impacts within the entire project area. Some resources—such as social and economic resources—have a broader study area that includes all the neighborhoods impacted along the corridor, while others—such as utilities—are analyzed within the project's construction limits.

GEN3. Use of the American Planning Association's Peer Review

Some commenters referenced the Transportation Planning Division of the American Planning Association's (APA) Peer Review in their comments and called out specific findings from the report. This report came about because the APA accepted an invitation from the Denver City Auditor and from one of the Denver City Council Members-at-Large to conduct an expert panel review of the I-70 East Project during the public comment period for the Supplemental Draft EIS. This review was performed independently from CDOT and FHWA, when the I-70 East Project team normally is restricted from participating in such activities. The project team provided some information to answer APA's questions, but was precluded from responding in an in-depth manner during the comment period.

The Transportation Planning Division submitted a final report to the elected officials who sponsored the expert panel. Those officials incorporated information from the report into their comments on the Supplemental Draft EIS. The Final EIS includes responses from CDOT to the sponsoring elected officials and information included in the report, addressing many of the questions it raised, in areas such as travel demand modeling or managed lanes.

GEN4. Local hiring

Some comments received requested more details and clarification about CDOT's plan to employ local workers from the project area for the construction of the Preferred Alternative. Typically, CDOT is prohibited by federal law from requiring contractors on any federally funded project to hire from a particular location or neighborhood. However, CDOT submitted an application and received approval under Special Experiment Project 14 (SEP-14) for the U.S. Department of Transportation pilot program to execute geographic-based hiring preferences for the I-70 East Project. Additionally, CDOT will facilitate opportunities to promote local hiring, including hosting local job fairs. CDOT is researching funding a local workforce development program aimed at job readiness training prior to construction. CDOT will look to a variety of tools, including continued community outreach, to ensure that local residents and businesses are well informed of the local hiring and job training opportunities provided as part of the project.

GEN5. The effects of public comments

Substantive comments were received expressing a general feeling that public comments were not affecting the project because many comments were received about further examining other alternatives, yet further studies have not happened. The project must consider all comments, whether submitted by one person or 100 people. Receipt of a large or small number of comments expressing a particular idea, preference, or opinion does not make the expressed view more or less valid.

For example, a large number of commenters objecting to an alternative cannot vote the alternative out of the EIS. If it is a reasonable alternative, even if unpopular, the agency has an obligation to evaluate it in the EIS (40 CFR §1502.14). On the other hand, a single commenter can identify a reasonable alternative that the project has overlooked and cause it to be added to the EIS. Comments received have not identified a reasonable alternative

that was overlooked by the project, as discussed in greater detail in ALT2. Many comments received on the Final EIS expressed a desire to further study an alternative that would remove I-70 from its existing alignment and redirect traffic onto I 270/I-76. As further described in ALT3, the I-270/I-76 Reroute Alternative was evaluated and eliminated in the early stages of the 2008 Draft EIS alternatives analysis process because it did not meet the project's purpose and need and is, therefore, not a reasonable alternative.

It is important to recognize that the consideration of public comments is not a vote-counting process in which the outcome is determined by the majority opinion. Relative depth of feeling and interest among the public can serve to provide a general context for decision-making. However, it is the appropriateness, specificity, and factual accuracy of comment content that serves to provide the basis for modifications to the project and future decisions. Further, because commenters are self-selected, they do not constitute a random or representative public sample. NEPA encourages all interested parties to submit comments as often as they wish regardless of age, citizenship, or eligibility to vote. Commenters may, therefore, include business owners or employees, people from other countries, children, and people who submit multiple comments. Every comment and suggestion has value, whether expressed by one commenter or many.

OUT1 further describes the outreach the project has done since 2003, and how this input has informed the project throughout the process.

GEN6. Final EIS review period

Some comments raised questions about CDOT's public comment process during the Final EIS review period. Of these, many raised concerns about the public review period being too short and many were experiencing difficulties when trying to submit comments. The review period for the Final EIS began on January 15, 2016, and was scheduled to end on February 16, 2016. Because of multiple requests for additional time, the review period was extended through March 2, 2016. An additional 15 days was added to the review period based on the following factors:

- CDOT has conducted extensive outreach to the local community over the last 13 years and, in particular, the nearly four years since the lowered highway concept was first presented to the public. This outreach has included more than 200 public meetings, regular updates with City Council staff, door-to-door outreach, and regular project updates via flyers, email, and the website (www.i-70east.com).
- The Final EIS document was posted on the website, was provided to local viewing locations in hard copy, and DVDs were mailed to all persons who made substantive comments on the Supplemental Draft EIS on January 4 and January 5, 2016—nearly two weeks before the official release. In addition, the 30-day public review period was actually 33 days due to a weekend and holiday. Therefore, the document was available for review for 44 days rather than 30 days. An additional 15 days allowed the document to be available for 59 days, only one day less than the 60 days that was requested.

- The Final EIS is an updated version of the Supplemental Draft EIS that was released in August 2014 and responds to all comments received during that public comment period. The Supplemental Draft EIS was available for a 60-day public comment period and has continued to be available for review on the website.
- The Final EIS was set up to facilitate public review by providing the Executive Summary in both English and Spanish. It also included boxes at the beginning of each chapter and each resource section within *Chapter 5, Affected Environment, Environmental Consequences, and Mitigation*, which outline the substantive changes. Comments received on the Supplemental Draft EIS are included in *Attachment Q* of the Final EIS and are organized in a Table of Contents to make them easy to find. A Frequently Received Comments and Responses document was prepared and included in both English and Spanish that summarizes the frequently made comments with responses.
- Comments have been and continue to be received that the EIS process has gone on too long as it is and it's time to move forward.

CDOT received hundreds of comments through the feedback form on the website during the review period, and CDOT is aware that some people had issues with the feedback form. There were not any official "down times" recorded for the form during the review period, but there were a few factors that could have caused issues for the users:

- Volume was particularly high at that time
- Submitters were on a slow Internet connection
- Spam filters could have been interfering
- The security text that needed to be filled in at the end of the form (CAPTCHA) was not entered correctly by the submitter

CDOT disabled the CAPTCHA text requirement for the last few days of the review period in an attempt to lessen the number of feedback form submittal errors. All commenters who submitted their comments via the feedback form or email received an email from the project team confirming the comment had been received. Additionally, comments received shortly after the deadline still were accepted.

Other options were available for commenting on the Final EIS. At the bottom of the feedback form, there was a link that provided the project's email address and mailing address in case people had problems with the form. In addition, contact information is included in the Final EIS. When CDOT was asked how to submit comments, the link to the feedback form was provided, as well as the project email address and the contact information from the Final EIS.

GEN7. Air quality documents review period

Some comments raised concerns about the public involvement opportunities CDOT provided for the draft revised air quality and conformity analyses, in particular that the

comment period was too short and that certain technical information and data was not available for review. Therefore, the public was unable to provide meaningful comments on the analyses.

The review period for the air quality documents began on December 16, 2016. Announcements of the review period were included in an email to the project distribution list, were included in a flyer in the project kiosk, and a newsletter was hand delivered to several thousand residents in the project area. Links to the air quality documents were posted on the website along with names and phone numbers to speak with someone for assistance. The summary of information released was translated into Spanish, hard copies of the documents were available at the project office within the community, and staff was available at the project office (including translation services) for extended hours to answer questions or receive comments in person, in order to provide more opportunities for the communities to stay involved in the process. The technical data and information used to construct the analyses was available upon request from the beginning of the comment period and was provided to several parties promptly upon request.

A project level conformity determination is required at the completion of the NEPA process (40 CFR 93.104(d)). For the I-70 East project, the project level conformity determination must be made when the ROD is issued (40 CFR 93.101). Federal law and regulations do not require project-level conformity analyses or determinations be opened for comments for any particular time period. The 30-day period provided for the review of the draft updated air quality and conformity analyses is the same that would have been required under NEPA if they had appeared in the Final EIS, and was sufficient to allow for meaningful public review and comment on the new information. CDOT made every effort to promptly provide information and assistance to interested parties during that time. In light of this, the comment period was not extended.

The conformity determination is being made as part of the I-70 EIS process, and an additional period for review was provided as part of that ongoing public involvement process to give the public an additional opportunity to consider the updated hotspot analysis and its role in the conformity analysis.

The Final EIS had a full 45-day comment period including the extensions that were granted. The air quality update reports were not a supplemental EIS nor was one required because they did not reveal new significant impacts that were not already considered in Final EIS. The updated air quality analysis responded to comments raised on the Final EIS, used new data, and more advanced methodologies. The results of the new analysis continued to demonstrate the project level conformity finding of this project. For the air quality documents, there are no changes in the conclusions that there are no exceedances of the NAAQS, the subject of the reports was narrow and included substantial technical information, and any additional data was made available upon request. As such, 30 days was an adequate amount of time to allow the public to review and weigh in on the updated analyses

GEN8. No predetermined outcomes

Substantive comments received raised questions about why CDOT was already selecting a developer and purchasing properties if a final decision had not been made. Federal regulation/federal law permits issuance of a Draft Request for Proposal (RFP) concurrent with the NEPA process. However, CDOT cannot and did not definitively commit to any alternative, nor can proposers proceed with final design or construction, prior to completion of the NEPA process and issuance of a ROD. Federal regulation imposes additional limitations on CDOT during the environmental review process, which are further detailed in the Draft RFP documents.

CDOT and HTPE will identify a partner (a developer) to design, build, finance, operate, and maintain the I-70 East Corridor. At this stage in the developer selection process, multiple Draft RFPs have been issued. The RFP is one of the most important elements in this highly competitive selection process. It lays out CDOT's expectations—technical scope, contractual requirements, and performance standards for the project. The developer responds with highly detailed information about how they propose to design, build, finance, operate, and maintain the I-70 East Project. In addition, the developer will be required to provide detailed financial information and outline how it will ensure transparency to be able to meet the goals of the state, the general public, and the impacted communities. No commitment to an alternative, design, construction, developer, or other element was made prior to the issuance of this ROD.

As allowed under 23 CFR §710.501, Early Acquisition, "the State may initiate acquisition of real property at any time it has the legal authority to do so based on program or project considerations. The State may undertake early acquisition for corridor preservation, access management, or other purposes."

In September 2013, CDOT began the early acquisition of properties to assist with implementation of the Preferred Alternative. A number of these property acquisitions would be required by more than one of the proposed alternatives. However, public comments and review of the EIS continue to shape and change the project. None of the early acquisition properties are historic (listed or eligible for listing on the NRHP).

GEN9. Inclusion in regional planning documents

The 2040 Fiscally Constrained RTP (https://drcog.org/programs/transportation-planning/regional-transportation-plan) was adopted by DRCOG on February 18, 2015, and the "2015 Cycle 2 Amendments to the 2040 Fiscally Constrained Regional Transportation Plan" were adopted on March 16, 2016. The Fiscally Constrained RTP includes only those transportation projects from the MVRTP that can be built over the next 25 years based on current forecasts for transportation funding. Regionally significant projects like the highway improvements that are being considered as part of this EIS must be part of the Fiscally Constrained RTP and the TIP to be eligible for federal funding.

The improvements included in the Fiscally Constrained RTP are reconstructing I-70 from I-25 to Chambers Road and adding one new managed lane in each direction ($1.1757 billion, 2015 dollars). These improvements listed in the Fiscally Constrained RTP comprise the Central 70 Project.

Outreach Efforts

OUT1. Public involvement to date

Substantive comments on the Final EIS expressed questions about the inclusiveness of CDOT's public involvement process over the life of the I-70 East Project. CDOT has conducted continuous public involvement on the I-70 East Project for more than 13 years, including door-to-door outreach and public and neighborhood meetings in the most directly impacted neighborhoods. Since the beginning of the project, alternatives and mitigation have been refined continuously as a result of feedback from the impacted communities and local governments. The project team has used the concept of context-sensitive solutions to help form all elements of the project, from the outreach through the design.

As part of its outreach efforts, CDOT convened a committee of community and stakeholder representatives in 2009 after publication of the 2008 Draft EIS. This group, the PACT, met regularly over the course of one year to help identify a preferred alternative.

Some of the meetings, such as the Community Leaders meeting, are intended to be informal. Public meetings held by the I-70 East project team are held in the evenings with notices sent to the public and stakeholders at least two weeks prior to the meeting. CDOT has used many different community outreach techniques to invite the public to participate in the meetings. These techniques include, but are not limited to, email announcements, mailers, flyers, door-to-door canvassing, telephone invitations, flyers in school packets, posters at community locations, and a neighborhood informational kiosk.

Extensive notification is provided in advance of each large public meeting, including delivering flyers to all residents near the highway, mailers to property owners, email announcements, flyers in school packets, and posters at community locations throughout the neighborhoods.

To encourage public participation and to make the meetings accessible for the general public, all public meetings have been held at ADA-accessible locations in nearby neighborhoods, including, but not limited to, Elyria and Swansea, Commerce City, Aurora, and Northeast Park Hill. Food, childcare, and Spanish translation also have been provided at all of CDOT's public meetings.

Spanish translators have been available throughout the process at every public meeting and also helped staff the onsite project office during the Supplemental Draft EIS public comment period. The Executive Summary for the Supplemental Draft EIS and the Final EIS are published in both English and Spanish. The materials on the English website are translated to Spanish on a regular basis for inclusion on the Spanish version of the website

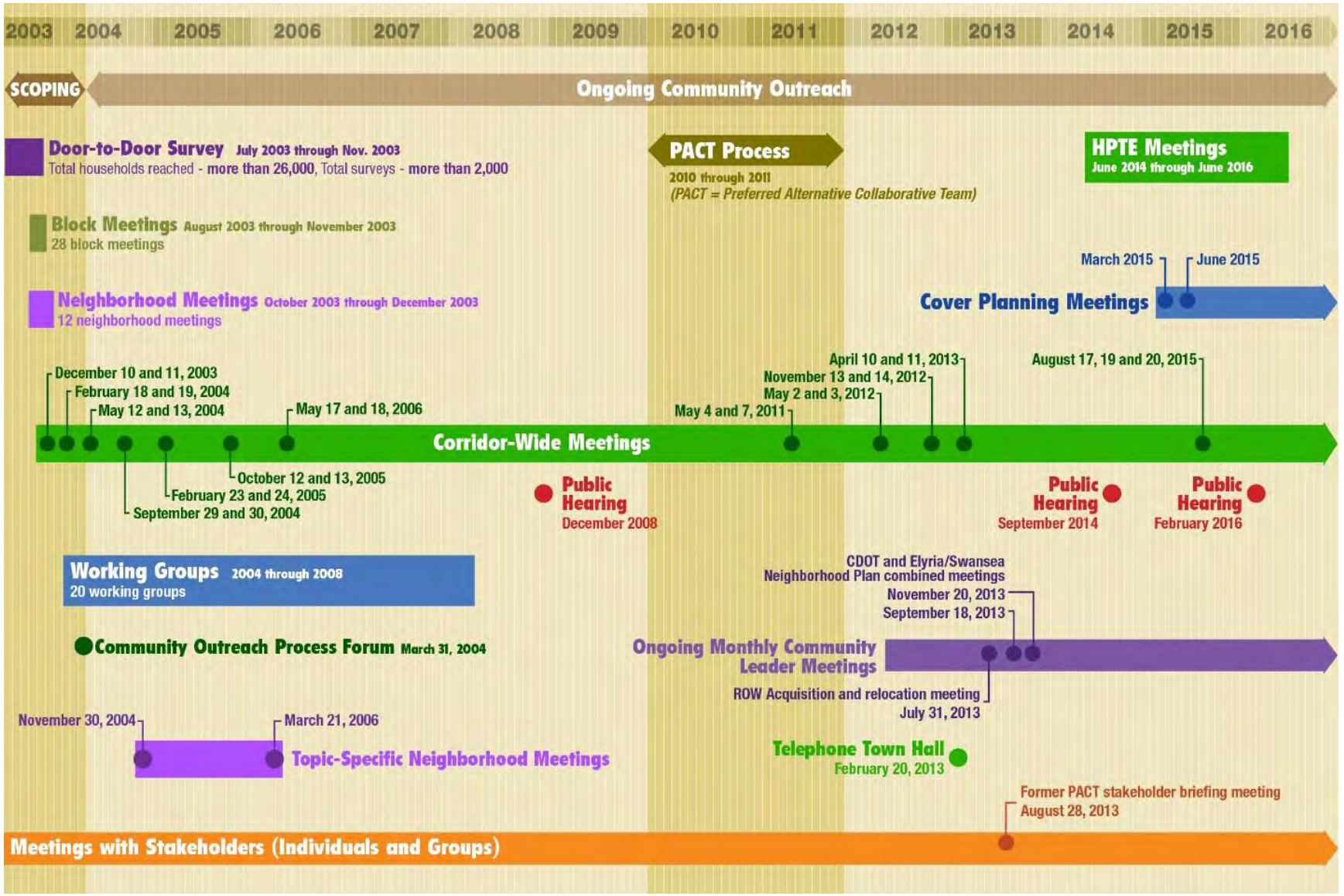
(www.i-70east.com/index-es.html). All printed and electronic materials distributed to the public—including mailers, flyers, emails, newsletters, and posters—are bilingual in English and Spanish. Door-to-door outreach in the impacted communities also has been conducted with Spanish-speaking team members.

I-70 East project-specific public meetings are documented and the meeting notes from these meetings are available on the project website (www.i-70east.com) and are available as hard copies upon request. Handout materials from meetings are translated into Spanish and translators are available at every meeting. Official transcripts of the public hearings on the 2008 Draft EIS, 2014 Supplemental Draft EIS, and 2016 Final EIS also are available on the project website. An outline of the community outreach timeline can be found in **Exhibit 23**.

Comments received during the community outreach efforts were considered by CDOT and FHWA and, as appropriate, they were incorporated during the decision-making process. The information gathered during the outreach process has helped the project team refine the project alternatives. These changes include, but are not limited to, refinements to the mitigation commitments, updating the air quality analysis, keeping the Steele Street/Vasquez Boulevard interchange open, and coordinating with Denver.

Please refer to Chapter 7, Community Outreach and Agency Involvement, of this ROD and *Chapter 10, Community Outreach*, of the Final EIS for details about the project's outreach efforts to the public and stakeholders.

Exhibit 23 Community Outreach Timeline



OUT2. Future public involvement and outreach

As the project has proceeded, commenters have expressed a strong desire to remain involved and informed about all aspects of the I-70 East Project. The project team has been, and continues to be, committed to community outreach and involvement through the environmental planning process and throughout all phases of construction. The developer will be tasked to establish a communications team and hold regular meetings with CDOT to discuss any public information and outreach tasks. The developer, in collaboration with CDOT, will be responsible for preparing and implementing a Strategic Communications Plan that will outline how important information will be communicated to stakeholders.

To assure proper communication to stakeholders about project schedules, progress, construction impacts, and any potential issues that may arise, a variety of approaches and tools will be used. Many of these methods—phone and email, public meetings, web page updates—have been used successfully in the past and will be continued. New methods that apply to the construction aspect—lane closure reports, traffic alerts, project identification signing—will be added to the cadre of tools available to make sure the public is fully informed about the project—before, during, and after construction.

For more information on community outreach and involvement, see Chapter 7, Community Outreach and Agency Involvement, of this document.

Alternatives Analysis

ALT1. No-Action Alternative

Some comments asked why a true no-action alternative is not included in the Final EIS. A no-action alternative, required by 40 CFR §1502.14, is an alternative in which a proposed project makes no changes to a facility. Typically, this type of alternative has no impacts other than those brought about by routine maintenance activities. However, the No-Action Alternative for the I-70 East Project cannot be a true "no-action alternative" because of infrastructure deficiencies. The current viaduct is deteriorating and becoming unsafe to use. To date, CDOT has invested in "Band-Aid" solutions that have allowed the structure to remain in service. These types of solutions are short-term, unsustainable fixes that will not maintain the viaduct indefinitely. Therefore, to address the critical safety issues and deficiencies, the No-Action Alternative replaces the viaduct, but does not add capacity in terms of additional lanes.

However, this type of replacement poses additional challenges to a true no-action alternative because of improvements in design and safety standards in the intervening decades since the viaduct was built. Any new facility must be constructed to modern design standards. Achieving these standards on the I-70 viaduct means the replaced structure will be wider than the existing viaduct. In fact, all alternatives that are under consideration, including the No-Action Alternative, require expanding the footprint of the roadway to meet current design and safety standards.

CDOT has evaluated and reevaluated ways to avoid, minimize, and mitigate impacts of the project. See *Chapter 3, Summary of Project Alternatives*, of the Final EIS for more information on the alternatives. See *Chapter 9, Preferred Alternative Mitigation Commitments*, of the Final EIS for more information on planned mitigation of impacts.

ALT2. Alternatives development and determining reasonable alternatives

Comments were received that expressed questions about how and why alternatives were eliminated during the EIS process. Alternative analysis is guided by NEPA. NEPA allows for the elimination from further analysis of alternatives that are not reasonable or feasible. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant. For the purposes of NEPA, "reasonable" means those alternatives that may be feasibly carried out based on technical, economic, environmental, and other factors, and that meet the project purpose and need. The purpose and need for this project is discussed in GEN1, and in *Chapter 2, Purpose and Need* of the Final EIS. To eliminate the alternatives that are not reasonable, a multi-step evaluation process was used. The first step started with high-level criteria, such as an alternative's ability to meet the purpose and need of the project and to check if there were any fatal flaws. Each successive step provided more detailed analysis until the single Preferred Alternative was reached. See *Chapter 3, Summary of Project Alternatives*, of the Final EIS for more information on the alternatives development and analysis process. If an alternative has been determined to be unreasonable, NEPA does not require additional analysis to be done. This is why not every alternative received the same level of analysis as others.

The alternative screening process for the I-70 East Project has been a continuous effort, with each consecutive release of the EIS further refining and narrowing down the alternatives, beginning with the Draft EIS released in 2008. More than 90 alternatives have been considered during the EIS process, including alternatives that realign and reroute I-70, an alternative to avoid the environmental justice community of Elyria and Swansea, and an alternative that used local networks. See the *Alternative Analysis Technical Report* of the Draft EIS for information on the more than 90 alternatives considered, as well as the specific reasons why not all of them were carried forward.

One alternative that would have realigned a portion of the highway was advanced as an alternative in the 2008 Draft EIS, but was later eliminated because during the public involvement process it became clear that the alternative did not meet the purpose and need of the project. Other alternatives that move the highway away from the current alignment also were evaluated and found not to be reasonable alternatives.

Comments also included considering alternatives that are not reasonable. One example of this is re-signing I-70 to route the through traffic out of the neighborhoods where dense urban development and elementary schools are located within a few hundred meters of I-70 and moving this traffic onto I-76 and I-270; and routing all truck traffic off of the current alignment between Washington Street and Colorado Boulevard, which would require

through truck traffic to use I-76 and I-270 and local truck traffic to disperse on local streets leading to their local destination rather than concentrating on the current alignment next to schools and houses along the highway. The possibility of restricting a portion of traffic from I-70 and rerouting these vehicles to alternative routes also was examined and eliminated (see TRANS5).

All alternatives evaluated in the Final EIS are located on the current alignment of I-70. Additional alternatives that would maintain the same number of travel lanes as the existing conditions, such as a partial cover lowered alternative with only six lanes of traffic, also were considered but eliminated because of the future traffic demands of the corridor (see TRANS8). See ALT3 for more specific information regarding the elimination of the I-270/I-76 Reroute Alternative. Following the release of the Draft EIS, an intensive alternatives enhancement and modification process resulted in the release of a Supplemental Draft EIS, which further refined and reduced the number of alternatives. Conducting another round of analysis and refinement, a Preferred Alternative was identified in the Final EIS. See *Chapter 3, Summary of Project Alternatives*, of the Final EIS for more information on exactly how and why the Preferred Alternative was selected. The plans, impacts, and mitigations for the Preferred Alternative are discussed throughout this document and the Final EIS.

ALT3. I-270/I-76 Reroute Alternative

Many comments received on the Final EIS expressed a desire to further study an alternative that would remove I-70 from its existing alignment and redirect traffic onto I-270/I-76. The I-270/I-76 Reroute Alternative was evaluated and eliminated in the early stages of the 2008 Draft EIS alternatives analysis process because it did not meet the project's purpose and need and is, therefore, not a reasonable alternative. Elimination of the alternative was reaffirmed in Section 3.5 of the 2014 Supplemental Draft EIS after additional analysis was performed because it does not meet the project's purpose to implement a transportation solution that improves safety, access, and mobility, and it does not address congestion on I-70. Section 3.9.1 of the Final EIS also discussed elimination of this alternative.

According to NEPA regulations in 40 CFR §1500.2(e), 40 CFR §1502.1, and 40 CFR §1502.14(a), the NEPA process should be used to identify and fully and fairly assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of the actions on the quality of the human environment. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant. The reasonable alternatives all should be rigorously explored and objectively evaluated. For alternatives that were eliminated from detailed study, the reasons for their elimination should be briefly discussed.

The I-270/I-76 Reroute Alternative is not a reasonable alternative because:

- Rerouting I-70 while leaving 46th Avenue at its current location encourages highway users to use 46th Avenue to reach their destinations rather than staying on I-70, including the more than 11,000 employees that work within one-quarter mile on either side of I-70 between I-25 and I-270. Because of this, there will be a substantial increase in traffic volumes on 46th Avenue, which introduces safety, access, and mobility issues in the surrounding neighborhoods and also creates a barrier for bicyclists and pedestrians moving through the community.
- Rerouting I-70 also will force delivery trucks and other large vehicles to use 46th Avenue frequently to reach the industrial areas and businesses located near the existing I-70.
- If I-70 were rerouted, some arterials close to the existing I-70 alignment would have reduced traffic volumes; however, some arterials close to the expanded I-270/I-76 corridor would experience increases in traffic. The traffic on the arterials east of I-25 would experience major traffic increases and the local street networks do not have the capacity to hold the forecasted traffic volumes, which would result in safety issues and major delays.
- If I-70 were to be rerouted, traffic volumes forecasted for 2035 on 46th Avenue will be 10 to 20 times higher (more than 50,000 vehicles per day) than the traffic forecasted for 46th Avenue with the alternatives that leave the highway at its current location.
- There would be an increase in out-of-direction travel, causing mobility issues. Of the traffic heading west on I-70, approximately 50 percent continues past I-25, staying on I-70. The I-270/I-76 Reroute Alternative adds two miles of out-of-direction travel for these vehicles. Thirty-five percent of the traffic heading west on I-70 exits to southbound I-25, which translates to an additional four miles of out-of-direction travel for these vehicles, resulting in increased travel times.
- There will no longer be multiple east-west highway route choices in the area, which are beneficial for emergency access and redundancy.
- During the Final EIS review period, numerous comments were received that the cost estimate for the I-270/I-76 Reroute Alternative was too high (previously estimated at $4.0 billion). Therefore, a new cost estimate of $3.2 billion was prepared by CDOT. Note that there are several necessary items that were not included in the new cost estimate, so the cost would be higher than the $3.2 billion estimate. This alternative requires more than 12 miles of major highway reconstruction and widening along I-270 and I-76, and the development of new system-level interchanges, which contribute to the cost being twice as much as existing alignment alternatives.
- Many stakeholders—including Adams County, Adams County Economic Development, Aurora (Mayor's Office and City Council), Colorado Motor Carrier's Association, Commerce City, Denver (Mayor's Office and City Council), and the

North Area Transportation Alliance—have expressed continued opposition to this alternative.

- Additional communities would be impacted by rerouting I-70. Impacts to hazardous materials sites, wetlands, waters of the U.S., wildlife, environmental justice populations, residential and commercial/industrial properties, and increased congestion and safety issues would occur.
- The Globeville and Elyria and Swansea neighborhoods still would be impacted, but would not receive mitigation benefits. Removing I-70 and replacing it with a six-lane principal arterial (46th Avenue) would have several at-grade railroad crossings that would cause congestion and air quality impacts from traffic waiting for trains to pass. Along this route, homes and Swansea Elementary School would be located directly adjacent to the six-lane principal arterial, which means the vehicles would be idling directly outside of the houses during congested conditions. Truck traffic would continue to be high through the neighborhood due to the amount of industrial/commercial businesses in the corridor. This truck traffic could end up using more of the local streets when there is congestion on 46th Avenue, increasing the truck traffic in the neighborhoods.

Because it has been determined that the I-270/I-76 Reroute Alternative is not a reasonable alternative, additional studies to fully analyze the impacts for this alternative are not necessary. To see more details on the analysis performed on the I-270/I-76 Reroute Alternative, including the assumptions used for the cost estimate, please see *Attachment C, Revised Elimination of I-270/I-76 Reroute Alternative Technical Memorandum*.

ALT4. Considerations of future technology

Some comments showed support for considering the use of technology, rather than freeway expansion, as a way of meeting the project's purpose and need. Advancements in technology include connected or automated vehicles. This technology is at the forefront of research at this time, but the impact on future traffic volumes is currently unknown. Whether this technology will result in increases or decreases in trips and vehicle miles traveled (VMT) is being debated by industry experts. A large unknown is how long it will take to create market penetration of the given technology to create a significant impact on traffic volumes or miles driven. Traditionally, market penetration depends on economic feasibility and affordability.

CDOT's ITS Section and CDOT's RoadX Program are looking at using new technologies that will benefit traffic operations and safety for the entire state with the focus on higher traffic volume highway corridors such as I-70. With the Central 70 Project, there will be a number of new ITS technologies that CDOT will be implementing while also continuing to look at new technologies as the project is constructed. However, these projects will not address or eliminate the purpose and need for the Project.

Some technologies planned for inclusion in the Central 70 Project involve the installation of Dedicated Short-Range Communications (DSRC) radios to allow for vehicle-to-

infrastructure communications; active traffic management (ATM) elements, such as variable speed limits, dynamic lane control, and expedited incident management; and adaptive ramp metering. CDOT will continue to work on identifying additional opportunities for more integration with technologies as the project moves forward. See http://www.codot.gov/programs/roadx for more information on CDOT's RoadX Program.

Impacts and Mitigation Measures

IMP1. Mitigation commitments

Per the CDOT *NEPA Manual*, prior to mitigation, CDOT always makes its best effort to:

- Avoid the impact altogether by not taking a certain action or parts of an action
- Minimize impacts by limiting the degree or magnitude of the action and its implementation

However, if avoidance or minimization is not feasible, then mitigation measures may be implemented, including:

- Rectifying the impact by repairing, rehabilitating, or restoring the impacted resource
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
- Compensating for the impact by replacing or providing substitute resources or environments (CEQ, 40 CFR §1508.20)

Many of the mitigation measures to which CDOT has committed are typical mitigation measures that would be part of any project. One example is BMPs, which are effective, feasible (including technological, economic, and institutional considerations) conservation practices and land and water management measures that avoid or minimize adverse impacts to natural and cultural resources. BMPs may include schedules for activities, prohibitions, maintenance guidelines, and other management practices. Physical BMPs may include items such as hay bales for erosion control or silt fencing.

Additionally, many of the resources evaluated involve regulatory items or procedures that need to be followed, and may include mitigation requirements. Typical BMPs and regulatory items are included in the estimate to construct the project, and are not called out separately unless there is specific reason for doing so. The majority of these items are captured within the specifications/construction plans for the project.

Examples of typical mitigation measures and standard BMPs and regulatory items to be provided include (note this is not an all-inclusive list):

- Compensate any person(s) whose property needs to be acquired for the Preferred Alternative according to the U.S. Constitution and the Uniform Act, as amended.
- Follow the PA with SHPO for mitigation commitments to historic resources.

- Construct noise walls, as required, to minimize noise impacts for post-construction conditions.
- Conduct preconstruction paleontological surveys and continuous paleontological monitoring during all phases of construction.
- Return all parks and trail crossings to their pre-construction or comparable state, and maintain trail access during construction.
- Cover, wet, compact, or use chemical stabilization binding agents to control dust and excavated materials at construction sites.
- Use wind barriers and wind screens to reduce the spread of dust from the site.
- Cover all dump trucks leaving sites to prevent dirt from spilling onto streets.
- Prohibit unnecessary idling of construction equipment.
- Locate construction staging areas as far away as possible from residential uses.
- Comply with Senate Bill 40 (state wildlife and habitat protection), the CDOT Impacted Black-Tailed Prairie Dog Policy, and CDOT Standard Specifications for protection of migratory birds.
- Mitigate unavoidable, permanent wetland impacts at a 1:1 ratio in a wetland mitigation bank in the South Platte River watershed.
- Return wetlands temporarily impacted to pre-construction conditions.
- Use BMPs for groundwater dewatering, treatment, and disposal during the construction process.
- Implement standard construction measures for stormwater erosion control.
- Investigate ways to maintain safe and efficient connections through the neighborhood during construction for all modes of transportation. This will mean active communication to the residents so that they are aware of temporary street closures and detours. It also could include working with RTD to minimize disruptions to service areas and schedules.

Comments received during community outreach efforts were considered by CDOT and reasonable and feasible mitigation ideas were incorporated into the project as appropriate. In response, the project team has developed additional mitigation measures beyond those required or normally provided in Colorado to lessen the adverse impacts in the project study area. Any mitigation measures included in the ROD for the project must and will be completed (even if the project has funding issues as it is constructed) (40 CFR §1505.3).

- Provide a covered segment over I-70, up to 1,000 feet long, where it will pass below grade through the Elyria and Swansea Neighborhood, including an urban landscape on top.

- Provide for a base level of landscaping on the highway cover necessary to provide an active community space for surrounding residents and local neighborhoods, support social and pedestrian connections in the Elyria and Swansea Neighborhood, and provide new space for the Swansea Elementary School.
- Provide funding to CRHDC, which they will use to assist residential and business displacees with financial counseling and procurement of financing for replacement property and securing business and residential loans. CDOT already has provided funding to CRHDC as early mitigation.
- To reduce impacts from dust and noise during construction, for homes between 45th Avenue and 47th Avenue, from Brighton Boulevard to Colorado Boulevard, provide:
  - Interior storm windows
  - Furnace filters
  - Two portable or window-mounted air conditioning units with air filtration and assistance to pay for the additional utility costs during construction
- Provide $2 million to support affordable housing in the Elyria and Swansea Neighborhood through available programs.
- Equity impacts for the financial burden of access to the tolled express lanes will be mitigated by providing to eligible residents of Globeville, Elyria, and Swansea free transponders, pre-loading of tolls, or other means determined prior to the opening of the tolled express lanes. Eligibility and the duration of the program are expected to be determined based on factors including, but not limited to, residency, financial burden, number of vehicles per resident or household, etc.
- Facilitate opportunities to promote hiring individuals from the communities, such as job fairs with the developer. Other areas that CDOT is researching include investing funds in a local workforce development program aimed at job readiness training prior to construction. Additionally, CDOT applied to and received approval from the U.S. DOT to participate in a pilot program that allows geographic-based hiring preferences for the I-70 East Project.
- Provide $100,000 toward the Denver Office of Economic Development's GES Healthy Food Challenge that will help facilitate access to fresh food.
- Provide a robust and context-sensitive communications and outreach plan throughout construction to ensure residents are kept informed.
- Redesign and reconstruct the Swansea Elementary School playground, including building a playground in a temporary location during construction and rebuilding school parking facilities. Other mitigation measures for the school include:
  - Install new windows, doors, and a new HVAC system.
  - Build two additional classrooms.

- Collect representative soil samples of three or four recently cleaned-up residential properties pre-, during, and post-construction to test for lead and arsenic to ensure that the properties aren't re-contaminated due to construction activities. Require the developer to implement standard dust control measures (specifically, for PM_{10}), such as watering, erosion control blankets, or reseeding, as a condition for conducting work.
- Place continuous PM_{10} monitors along portions of the project corridor where active construction is under way. These monitors will have "alert levels" to give early notice to onsite construction workers if there are high dust readings so they can address the problem immediately.
- Provide funding for and participate in a documentary covering the history of I-70 East and its relationship to the Elyria and Swansea and Globeville neighborhoods. CDOT has already completed this task as early mitigation. This documentary is available on the project website at www.i-70east.com.

One mitigation measure that changed after the release of the Supplemental Draft EIS is related to dust and noise during construction. In the Supplemental Draft EIS, mitigation included CDOT providing and facilitating the opportunity for homeowners to rehabilitate homes (such as improvements to doors, windows, and ventilation systems) that are close to the highway construction between 45th Avenue and 47th Avenue in the Elyria and Swansea Neighborhood. This mitigation was changed for the Final EIS to providing interior storm windows and offering two portable or window-mounted air conditioning units with air filtration and assistance to pay for the additional utility costs during construction. This change was made since many residents open their windows in the summer, and interior storm windows and air-conditioning units would better mitigate the dust and noise during construction, allowing residents to leave their windows closed. Additionally, since the Final EIS, furnace filters have been added for residents receiving storm windows and air-conditioning units.

Refer to Chapter 5, Central 70 Mitigation Measures, of this document for a list of mitigation measures committed to for the Central 70 Project. See *Chapter 9, Preferred Alternative Mitigation Commitments*, in the Final EIS for the full list of proposed mitigation measures for the entire I-70 East Project.

IMP2. Impacts to Swansea Elementary School

Swansea Elementary School has been identified as a very important and valuable resource in the Elyria and Swansea Neighborhood, and there is strong community support for keeping the school in the neighborhood. The project team researched the neighborhood to identify other suitable locations for the school. The only available site identified was where the Swansea Recreation Center currently is located. The community expressed opposition to moving the school to the recreation center site because of the adjacent railroad tracks. The decision to keep the school at its current location was made during outreach

opportunities conducted to review alternative sites for the school, and surveys of parents at the school during the PACT process.

CDOT developed the Partial Cover Lowered Alternative to keep the school in its current location while minimizing impacts to it. The mitigation for the school redesigns and expands the school grounds and provides upgrades to the school building. The residents of the Elyria and Swansea Neighborhood are in favor of the school remaining at its current location with the Preferred Alternative. DPS also supports this decision.

CDOT has been working with DPS to develop construction mitigation measures for Swansea Elementary School. Mitigation measures for the school include providing a new HVAC system, doors, and windows to reduce the dust and noise impacts to the school and its users, specifically during the roadway construction period. CDOT also will pay for the construction of two new classrooms. Providing additional classrooms will help mitigate some impacts by providing offsetting benefit to the community to enhance the overall quality of the school beyond the construction period. These upgrades will be completed before the construction starts.

CDOT has been coordinating with DPS and Swansea Elementary School's principal throughout the project to identify the school's needs and redesign the school site. The school playground will be temporarily reconfigured to move it away from the construction zone, with ultimate redesign of the school site included in the final design.

Finally, continuous PM_{10} air quality monitoring will be conducted in the area during construction to evaluate for any potential temporary increases in PM_{10} levels during construction. This system will alert the developer when increased construction mitigation measures are needed.

IMP3. Hazardous materials

Public comments received on the Final EIS continue to express concerns about hazardous materials in the area and how these types of materials will be handled during construction. CDOT will conduct appropriate surveys for asbestos, lead-based paint, and universal wastes prior to demolition of any structures. If these materials are encountered, they will be removed in accordance with applicable regulations and guidelines.

If ACMs are encountered, including buried utilities, the developer is required to follow CDOT Specification 250.07, Asbestos-Containing Material Management, and CDOT Asbestos-Contaminated Soil Management Standard Operating Procedure. Additionally, depending on the type of contamination, this material will be cleaned up in accordance with either Section 5.5 of the Solid Waste Regulations, or Regulation No. 8 of the Air Quality Control Commission Regulations.

The Colorado Department of Labor and Employment, Division of Oil and Public Safety, regulates petroleum products and chemical underground storage tanks (USTs) and certain petroleum-containing above-ground storage tanks (ASTs). Releases must be reported to the

Division of Oil and Public Safety, and investigation and cleanup must be implemented, as required. Most USTs have had a spill or leak at some point in their life cycle. Small leaks may not be identified until the UST is taken out of service and formally closed.

Groundwater and soil sampling have been performed as part of the hazardous materials analysis for the EIS and the results are available in *Section 5.18, Hazardous Materials*, of the Final EIS.

CDOT has coordinated with EPA on the clean-up efforts for properties within the Superfund boundary. Additionally, CDOT commits to collect representative soil samples of three or four recently cleaned-up residential properties pre-, during, and post-construction to test for lead and arsenic to ensure that the properties aren't re-contaminated due to construction activities. Any hazardous materials that have been exposed during construction will be identified and treated. This commitment was generated due in large part to comments received during the Supplemental Draft EIS regarding concerns with arsenic and lead.

Additionally, the RFP requires that hazardous materials be identified, managed, removed, and disposed of during construction in compliance with Environmental Law, any applicable governmental approvals and permits, and CDOT Standard Specification 250, Environmental, Health, and Safety Management. The RFP is available at: https://www.codot.gov/programs/high-performance-transportation-enterprise-hpte/projects/i-70/i-70-east-1/request-for-proposals-rfp.

Section 5.18, Hazardous Materials, of the Final EIS identifies various mitigation measures that will be implemented during construction to protect community and worker health and safety, as well as measures to manage and prevent the spread of contamination, if present.

IMP4. Noise

Substantive comments received raised questions about how the Preferred Alternative will affect the soundscape of the area and how CDOT plans to address these effects. Noise impacts and mitigation measures were analyzed in accordance with CDOT's *Noise Analysis and Abatement Guidelines* (2015) per federal regulations (23 CFR §772). Thorough analysis was conducted for each neighborhood and each alternative, including the noise reduction associated with the lowered highway and cover in the Partial Cover Lowered Alternative.

CDOT must consider noise mitigation measures if the noise level at a sensitive site, such as a residence, meets or exceeds the threshold for the specific land use. Before recommending mitigation—generally in the form of noise walls—CDOT must determine if mitigation is feasible and reasonable.

For a noise wall to be determined feasible, there are three criteria that must be met:

- It must provide at least a 5-dBA (A-weighted decibel) reduction for at least one impacted noise receptor.

- It also must not reduce safety, such as reducing sight distance.
- It must be possible to construct it with reliable and common engineering practices.

CDOT has determined that—for Colorado terrain and weather conditions, including common high wind events—20 feet is the maximum allowable noise wall height without compromising structural integrity under typical construction design specifications.

For a noise wall to be determined reasonable, there are three criteria that must be met:

- As a result of the noise wall, at least one noise receptor must experience a 7-dBA noise reduction.
- A Benefitted Receptor's Survey must be performed, and more than 50 percent of the responding owners and residents must support the construction of the noise wall. The required survey will be deferred until the final design phase of the project.
- The cost-benefit index must be no more than $6,800 per dBA per receptor.

If a noise wall fails to meet all the feasibility and reasonability criteria, the wall cannot be recommended. If a single criterion for feasibility or reasonability is not met, analysis for that particular noise mitigation ends. If a wall does meet all the feasibility and reasonability requirements, it will be recommended pending completion of a benefitted receptor survey with 50-percent approval by owners and residents.

For this evaluation, possible noise walls were analyzed as single-height walls ranging from eight feet up to 20 feet in height by two-foot increments. Feasibility and reasonability were analyzed for single-height walls in each neighborhood. At final design, the Preferred Alternative will be analyzed in a more in-depth manner to optimize the wall heights and lengths. When this optimization takes place, the ultimate goal of each wall will be to maximize the number of benefitted receptors while still meeting feasibility and reasonability requirements.

Measures will be taken to minimize noise during construction. Construction noise mitigation measures can be found in FHWA's *Highway Construction Noise Handbook*. CDOT will require the developer to use BMPs, such as limiting vehicle idling, to reduce noise during construction. Additionally, to reduce impacts from noise (and dust) during construction and minimize the need for window ventilation, for homes between 45th Avenue and 47th Avenue, from Brighton Boulevard to Colorado Boulevard, CDOT will provide:

- Interior storm windows
- Furnace filters
- Two portable or window-mounted air conditioning units with air filtration and assistance to pay for the additional utility costs during construction

This project also will abide by the appropriate city codes as they pertain to construction noise. If noise levels during construction are expected to exceed the limits of the city codes, the developer must obtain the necessary ordinance variance, which typically includes additional mitigation measures. See *Attachment C, Updates to Noise Technical Report* of this document, and *Attachment K, Traffic Noise Technical Report*, of the Final EIS, under Section 6.5, Construction Noise, for further information.

In the vicinity of Swansea Elementary School, construction noise will be reduced to the maximum extent possible during school hours. If possible, construction should take place during times when school is not in session. If this is not possible, high construction noise activities should take place during non-school hours. Temporary noise shielding also could be used around the school playground and other outdoor areas of frequent use.

IMP5. Energy consumption during construction

A concern raised in the comments included how the amount of energy consumed during construction was calculated. The amount of energy for construction was calculated based on the California Department of Transportation's *Energy and Transportation Systems Report* (1983) (See *Section 5.11, Energy,* in the Final EIS). Although based on data collected in 1977, the calculation was adjusted using the consumer price index to account for inflation between 1977 and 2015. This is the standard methodology for calculating energy consumption during construction for CDOT and FHWA projects.

IMP6. Traffic during construction

Some commenters raised concerns about how CDOT plans to effectively handle traffic congestion during construction of the Central 70 Project. To address this concern, construction phasing and a traffic management plan will be prepared by the developer and reviewed by CDOT. A traffic management plan may be made up of three components: a traffic control plan, a transportation operations component, and a public information component. A traffic control plan describes measures to be used for guiding road users through a work zone. A transportation operations component ensures compliance with the region's lane closure policy and identifies strategies that will be used to mitigate impacts of the work zone on the operation and management of the transportation system within the work zone impact area. A public involvement component includes communication strategies that inform affected road users.

The Central 70 Project is still in early design phases and, therefore, CDOT has not identified a developer for the project. However, when a developer is selected, CDOT and the developer will coordinate with affected local governments, railroad agencies, freight companies, utility providers, law enforcement, emergency services, courtesy patrols, businesses, schools, community groups, and transit providers as necessary in developing a traffic management plan. Additionally, all businesses that will have their access directly affected by construction activities will be directly contacted prior to any access changes to their business to ensure their specific access needs, work times, and other needs are incorporated into the traffic management plan. Any alterations to the access of a business

will be handled with a contract to ensure all business owners are fully aware of the changes, impacts, and mitigation throughout the project. Specific roadway and intersection impacts and mitigations during construction also will be identified within the traffic management plan, including potential detours.

The NEPA process is not able to model all possible detours and potential traffic increases from motorists and trucks using alternate routes during construction. CDOT will develop and implement a TDM program for construction to identify impacts and/or mitigations on alternate routes and detours. Maintaining safe and efficient traffic flow, emergency use, and pedestrian/bike accessibility while considering impacts to local roads will be incorporated into the traffic management plan.

CDOT will ensure that BMPs are used to minimize impacts during construction and provide safe and efficient connections through the neighborhoods during construction for all modes of transportation, including bicycles and pedestrians. CDOT also will ensure that BMPs are used to minimize impacts so that I-70 remains open and operational during construction.

Preferred Alternative

PA1. The highway cover

The Partial Cover Lowered Alternative was developed in response to the community's interest in reconnecting the Elyria and Swansea Neighborhood by removing the visual barrier that is the viaduct. By placing the highway below grade in this area, the visual barrier created by the existing viaduct will be eliminated. The cover for the highway in the Partial Cover Lowered Alternative was developed to mitigate the adverse impacts to the Elyria and Swansea Neighborhood and to restore and enhance neighborhood cohesion, which was disrupted decades ago by the original I-70 construction in the 1960s. Incorporation of the highway cover will help reconnect the Elyria and Swansea Neighborhood by providing easy and safe connections for all users, especially pedestrians and bicyclists. The ease of access to and across the cover will potentially encourage walking and bicycling for short trips to local destinations. The inclusion of the highway cover with an urban landscape and a community space helps achieve some broader community goals of livability, quality schools, and safe streets along with supporting the existing communities along the corridor.

Over the 13 years of study, the project team has heard that Swansea Elementary School is the heart of the community. A portion of the cover will be devoted to a multi-use field that will be used by the school when in session and will be open to the entire community outside of school hours. To provide a seamless connection between the highway cover and the school and a safe environment for students to use the cover facilities, 46th Avenue on the north side of the highway will be discontinued between Clayton Street and Columbine Street. The amenities and design in this space—such as playgrounds and sports fields— will be based on community input and needs. See *Attachment P, Cover Planning*, of the Final EIS for more information regarding cover planning efforts.

The cover will not exceed 1,000 feet in length due to ventilation requirements mandated in fire and safety standards. The lighting inside of the covered section will be designed to meet safety requirements, as well as to avoid the "black hole effect," which was a major issue with the old I-70 Stapleton tunnels. The covered area of the highway will be well lit by using the latest lighting technologies to enhance drivers' safety and operations on the highway.

This photo from the Twin Tunnels on I-70 outside of Idaho Springs, Colorado, is an example of latest lighting technologies (on left) versus old standards of lighting.

The estimated cost to complete the Central 70 Project includes the cost to build the cover. Because the cover provides mitigation, it must be built as part of the Central 70 Project and not deferred. CDOT will be responsible for the maintenance of the structure of the cover. Denver is responsible for the maintenance of the features and landscaping on the cover.

Air Quality and Health

AQ1. Health impact assessment

Based on public comments, much of the public concern for health relates to the air quality surrounding the highway. A health study (health impact assessment or health risk assessment) is not required by NEPA or the CAA and, therefore, it has not been performed for this project. The current health status of the affected communities has been thoroughly discussed in the Denver Department of Environmental Health's *Health Impact Assessment* (September 2014). The Final EIS added to the information discussed in the *Health Impact Assessment* by showing how air quality is likely to change in the future under different project alternatives. The analyses conducted for the Final EIS show that EPA's air quality standards for carbon monoxide and PM_{10} will be met and MSATs will drop by 70 percent to 90 percent regardless of which alternative is chosen. The updated analyses for carbon monoxide and PM_{10} in the ROD (see below) also show that these NAAQS will be met. Potential impacts from the I-70 East Project, including effects of each alternative on the ability to meet the health-based NAAQS, and on levels of MSATs, are discussed in detail in *Section 5.10, Air Quality* and *Section 5.20, Human Health Conditions*, in the Final EIS and in Section 9.9, Air Quality, in this ROD.

The MSAT analysis performed for the Final EIS showed that overall emissions will decrease in the future because of improved mobility, reduced congestion, and cleaner vehicle emission standards. For MSATs, the analysis showed that the I-70 East Project will have a minimal effect on annual emissions within the study area (see Exhibit 5.10-21 of the Final EIS), with the various alternatives showing a range of annual MSAT emissions from 2.1 percent to 3.8 percent above the No-Action Alternative in the design year of 2035. The overall trend in MSAT emissions is clearly downward, with all alternatives showing an

approximately eight- to nine-fold decrease from current rates by 2035 (Exhibit 5.10-21 of the Final EIS). (See *Attachment J, Air Quality Technical Report* of the Final EIS.*)*

The Health Effects Institute Special Report #16, *Mobile-Source Air Toxics: A Critical Review of the Literature on Exposure and Health Effects (2008)*, states that the cancer health effects attributable to MSATs are difficult to discern because the majority of quantitative assessments are derived from study groups of workers with high-concentration exposures and because some cancer potency estimates are derived from animal models. The report found that exposure to many MSATs comes from sources other than vehicles, and identifying effects in community studies is challenging because of low ambient concentrations, exposures to multiple possible toxicants, and other confounding factors.

In January 2010, the Health Effects Institute released Special Report #17, investigating the health effects of traffic-related air pollution. The researchers felt that there was "sufficient" evidence for linking asthma to traffic-related pollution. Evidence was "suggestive but not sufficient" for other detrimental health outcomes such as cardiovascular mortality. Study authors also noted that past epidemiological studies may not provide an appropriate assessment of future health associations because vehicle emissions are decreasing over time.

Finally, in 2011, three studies were published by the Health Effects Institute evaluating the potential for MSAT hot spots. In general, the authors confirmed that while highways are a source of air toxics, they were unable to find that highways were the only source of these pollutants. They determined that near-road exposures often were no different or no higher than background (or ambient) levels of exposure and, hence, no true hot spots were identified. These reports (Report Numbers 156, 158, and 160) are available from the Health Effects Institute's website: http://pubs.healtheffects.org/index.php.

Additionally, while the incidence of some health effects (such as asthma, autism, and attention-deficit/hyperactivity disorder) in the U.S. population appears to have been increasing, motor vehicle emissions have declined. This decline in MSAT emissions is documented in Figure 13 of *Attachment J, Air Quality Technical Report,* of the Final EIS and for other pollutants at epa.gov/ttn/chief/trends/. This negative correlation between emissions trends and health effects trends illustrates the complexity of the issues. Health Risk Assessments that have been conducted for highways show health risks well below EPA's acceptable risk factors. For example, the conclusion from the Arizona Department of Transportation's *South Mountain Freeway Health Risk Contributions from Highway Projects* found: "if the MSAT risk estimates in the studies summarized above are correct, it means that the incremental risk of cancer from breathing air near a major roadway is several hundred times lower than the risk of a fatal accident from using a major roadway" (Arizona Department of Transportation, 2014).

Throughout the NEPA process, CDOT and FHWA have consulted extensively with the EPA and CDPHE-APCD on the approach and methods for the air quality analyses. This

consultation has resulted in agreement on the analysis methodologies and the results of these analyses.

As described in *Attachment C, Air Quality NEPA Comparison Technical Report* and *Air Quality Conformity Technical Report* of the ROD, the most recent carbon monoxide comparative analysis for the ROD shows that all alternatives will result in carbon monoxide levels below the NAAQS. The PM_{10} analysis shows that all alternatives will result in levels at or below the NAAQS for this pollutant. It also is worth noting that both analyses were conducted at the worst-case scenario locations within the project study area, ensuring that air quality conditions in other areas will be less than those resulting from the hot spot analyses.

Thus, a health impacts assessment would, at most, show very minor differences between alternatives with much lower impacts than historic or current levels in terms of air quality impacts.

Additionally, modeling receptors for the updated PM_{10} conformity analysis included areas that are occupied by Swansea Elementary School with the results presented in Table 2 of *Attachment C, Air Quality Conformity Technical Report* of this ROD to show that all of the locations modeled would not exceed the health-based NAAQS for PM_{10}. Air monitoring will be conducted continuously during construction activities to ensure that air quality does not reach dangerous levels.

AQ2. Air quality design values and background concentrations

How air quality design values and background concentrations were determined was another concern raised in the comments on the Final EIS and on the air quality documents.

The project team followed the most recent EPA guidance on hotspot analysis for calculating design values and background concentrations, *Transportation Conformity Guidance for Quantitative Hot-Spot Analyses in $PM_{2.5}$ and PM_{10} Nonattainment and Maintenance Areas*, November 2015 (https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100NMXM.pdf) and as recommended for the project by EPA and CDPHE-APCD through Interagency Consultation. As described in the guidance document, design values (modeled value plus background concentration) are compared to the relevant NAAQS after rounding has been done, which occurs in the final steps of design value calculations.

To determine whether a project, once constructed, will exceed the NAAQS, the transportation conformity regulations require a project to add together an estimate of the future background concentration of particulate matter with an estimate of the project's contribution of particulate matter (40 CFR. § 93.123(c)(1)). The particulate matter hotspot guidance refers to this combination of the estimated future background concentration and the estimated project contribution as the transportation project's "design value." The guidance on this topic recommends basing the estimated future background concentration on three years of observed ambient air quality data from an air quality monitor, and the

project contribution on five years of estimated ambient air quality data generated by computer modeling software (EPA, 2015b).

The use of historical data from a single monitor that is representative of the study area is allowed by the EPA guidance and supported by EPA and CDPHE-APCD in this process. The monitoring site used to calculate background concentrations has not changed since the Final EIS. Using the Commerce City monitor for the updated analyses for the I-70 East Project yields a background concentration for PM_{10} of 113 µg/m^3. This represents the third highest value from the data recorded between 2012-2014, versus the value of 89 µg/m^3 from the data recorded between 2011-2013 used in the Final EIS air quality analysis. Both of these values were derived using EPA's 2015 guidance. The update to the air quality analysis did not use the previous three years of data at this location since the monitor was taken offline in 2015, so values from the last three years of full data were used (2012-2014) as recommended by EPA and CDPHE-APCD (see *Attachment B, Updates to Agency Consultation Addendum*).

The Commerce City monitor values provide the most conservative estimate of background concentrations. The Commerce City monitor has recorded the highest single value of PM_{10} by any metro Denver monitor near the project area, as reported by CHPHE-APCD. The older data from the monitor does not capture the most recent improvements to air quality resulting from more stringent fuel, stationary, and vehicle emission controls and standards. If the conformity hotspot analysis had used any other nearby site to calculate background concentrations, the results of the analysis would have been much lower. Therefore these values represent a worst-case value for the project analyses' background concentrations.

Some comments questioned the use of historic data from a single monitor and suggested that the project use the modeled future concentrations from the PM_{10} maintenance plan. EPA guidance allows the use of future predicted background concentrations only when such concentrations are developed using a chemical transport model. Modeled future concentrations from the PM_{10} maintenance plan cannot be used in this analysis because they were not developed by CDPHE-APCD with a chemical transport model.

As reported in the Final EIS, the monitor near the I-25/I-70 interchange (4905 Acoma Street) has been operating for less than one year and thus does not have the required three years of data.

AQ3. Air quality analysis updates and changes in results

Many comments received on the air quality documents raised concerns with the analysis results in comparison to the results from the Final EIS, including the resulting modeled values from the updated analysis. Updated air quality modeling for the project was conducted according to current EPA guidance (EPA, 2015b). Changes in the results can be attributed to a variety of reasons, as discussed below.

In 2016, during the development of the ROD documentation and based on comments received on the Final EIS, the air quality analysis was updated to reflect the year of peak

emissions. Traffic data from the 2040 DRCOG Focus travel demand model was used to address the conformity requirement for the hotspot analysis to consider the year of peak emissions over the time frame of the transportation plan. The worst traffic year is considered to be 2040 and is therefore considered the year of peak emissions. As discussed above, this update is consistent with regional air quality modeling and with the desire to represent the worst-case scenario.

For carbon monoxide hotspot modeling, MOVES2010b emissions rates from 2022 (representing opening year) were used along with 2040 traffic volumes to represent a worst-case condition over the life of the project. CDOT agreed with CDPHE-APCD's request to use 2022 for the updated modeling to represent the opening year. The project analysis is required to account for the year of peak emissions over the time frame of the transportation plan, and 2010 is not within that time frame or that of the project.

Since the release of the I-70 East Final EIS, there have been minor adjustments and refinements to the design of the Preferred Alternative as described in Section 2.5 of the ROD. The changes to the design resulted from public and agency comments on the Final EIS and continued evaluation of the Build Alternatives.

Updated information for the revised modeling included the latest traffic forecasts (link specific car and truck volumes from the 2040 DRCOG Focus model), updated emission reductions commitments from Denver and CDOT, omitting receptor locations within the project right of way that should not have been included in the Final EIS modeling (receptor maps for the Final EIS are shown on pages 76 and 77 of the *Final EIS Air Quality Technical Report* (Attachment J to the Final EIS) and are available on pages 11 and 12 of *Attachment C, Air Quality Conformity Technical Report*, and pages 10 and 11 of *Attachment C, Air Quality NEPA Comparison Technical Report*), revised meteorology data from CDPHE-APCD (which corrected an artifact in the data file), and recent background concentrations.

The dust mitigation controls committed to by CDOT are different than those accounted for in the Final EIS, but consistent with the most recent DRCOG conformity determination. Compared to the Final EIS, the emissions reduction commitment by Denver is more stringent (60 percent, compared to a 40 percent reduction used for the Final EIS), and the emissions reduction commitment for CDOT tolled express lanes is slightly lower (75 percent, compared to 83 percent in the Final EIS). However, the underlying emissions factors to which these emissions reductions are applied have not changed, are consistent with the SIP, and were verified by CDPHE-APCD prior to use in the PM hotspot analysis. The emissions reductions commitments are included as part of the DRCOG conformity determination process for the RTP and TIP.

Air quality modeling in the Final EIS relied on data coordinates provided by DRCOG to locate highway links and receptors. The accuracy and precision of highway link and receptor locations was significantly improved in the current analysis by making the

transition to Geographic Information System derived coordinates using high resolution maps of project design alternatives.

The analysis in the Final EIS relied on assumptions intended to simplify the assessment, which led to conservatively high predictions of ambient PM_{10} concentrations in the vicinity of the project corridor. One such assumption made in the previous assessment was to assume that all highway links are located at ground-level when, in reality, this is not the case because portions of the highway are elevated or below ground depending on the alternative. The current assessment incorporated refined methodologies, consistent with EPA guidance, to account for the true release height of emissions at selected receptor locations, which produces more representative, albeit lower, concentration predictions than the prior, simplified at-grade assumption. The analysis was also revised to use AERMOD in its more refined volume source mode rather than area source mode. The combination of all these changes reduced the calculated project emissions.

Lastly, background concentrations changed as previously described in AQ2, Air quality design values and background concentrations.

AQ4. Transportation conformity

Some comments asked if transportation conformity requirements of the CAA have been met. The Final EIS did not make a conformity determination since the Central 70 Project was not yet included in the RTP. Since the release of the Final EIS, DRCOG adopted an amendment to the 2040 Fiscally Constrained RTP (March 16, 2016), which includes the Central 70 Project (Phase 1 of the Preferred Alternative). This extends the hotspot analysis to the DRCOG planning horizon year of 2040, as required by the EPA in 40 CFR §93.116(a). This regulation requires a demonstration that during the time frame of the transportation plan no new local violations will be created and the severity or number of existing violations will not be increased as a result of the project.

CDOT released a Draft Air Quality Conformity Technical Report of which included the conformity analysis and determination on December 16, 2016, for agency and public review and comment in advance of the final conformity determination that would appear in ROD. As described in Section 8.2, 151 comments were received. None of the comments received led to changes in the analysis or conclusions presented in the review documents. The finalized version of that document is included as *Attachment C, Air Quality Conformity Technical Report,* of the ROD. Comments received during the review period for air quality are included in this document in *Attachment F, Comments on the Air Quality Documents*.

The air quality analysis in the ROD was updated to 2040 to meet the conformity requirements. The 2040 conformity analysis accounts for: (1) VMT growth, (2) emissions factors, (3) congestion and speeds, (4) total project emissions, and (5) a background concentration as described above.

As described in Section 6.1 of this ROD, Air Quality Transportation Conformity, regional emissions were found to conform to the carbon monoxide, PM_{10}, and ozone SIP. Based on

the carbon monoxide and PM_{10} analyses at the project level, the Central 70 Project has been determined to not cause an exceedance of any NAAQS. The proposed project will not contribute to any new local violations, increase the frequency or severity of any existing violation, or delay timely attainment of the NAAQS or any required interim emissions reductions or other milestones. This project complies with the transportation conformity regulations in 40 CFR §93 and with the conformity provisions of Section 176(c) of the CAA.

Since the Denver Metro area is not in a non-attainment or maintenance area for $PM_{2.5}$ or NO_2, transportation conformity does not apply for these pollutants.

AQ5. Data and modeling files for air quality analysis

As described in GEN7, Air quality documents review period, some comments raised concerns about not having the information or technical data to provide meaningful comments. The air quality document included substantial information on the air quality analyses and results. Additional modeling data and input information was promptly provided to anyone who requested it from the beginning of the comment period from the contacts identified in the technical reports.

AQ6. Air quality and the highway cover

Concerns were raised in the comments about air quality around the highway cover. Air quality around the cover was examined in the I-70/Swansea PM_{10} conformity analysis, utilizing state-of-the-art modeling software to estimate the pollutant concentrations in the area. This analysis showed that all of the areas around Swansea Elementary School and the cover were at or below the NAAQS for PM_{10}. See the results presented in Table 2 of *Attachment C, Air Quality Conformity Technical Report,* of this ROD.

With regard to air quality within the covered highway section, the cover was designed to be short enough not to require artificial ventilation during normal operation. As the two directions will be separated by a full-height wall, the action of vehicles moving through each side of the covered section will create a piston effect that keeps air moving through so that pollutants do not accumulate to unhealthy levels. According to a fire safety and ventilation report prepared for the project, traffic would have to be at a complete stand still for 27 minutes before the level of pollutants would rise to the point of requiring ventilation. In such a situation, or in case of a fire or other accident that could cause unhealthy air quality under the cover, an emergency ventilation system will be provided to clear the air and keep it safe for people inside. The design of the cover includes jet fans that will help move the air through the covered portion of the highway, when necessary. All of these things together (piston effect, full-height wall, jet fans, and the highway being below grade) overcome the effects of the natural meteorological conditions of the study area. With regard to air quality near the openings of the covered highway section, studies have shown that pollutant concentrations dissipate rapidly with distance from the tunnel openings. See the *Air Quality Technical Report*, *Attachment J* of the Final EIS, for more information.

AQ7. Air quality monitoring

Substantive comments raised concerns about air quality during and after construction and how CDOT plans to monitor the area. Prior to beginning the construction phase, the developer will be required to produce a Fugitive Dust Control Plan for the project, which must be approved by the CDPHE's APCD as part of the air permitting process. The plan will be reviewed by CDPHE-APCD staff to ensure that BMPs are stipulated for the control of airborne dust from construction activities. Adherence to the plan during construction activities will minimize the effects of dust on surrounding communities.

The construction project team also will establish a Construction Air Quality Monitoring Plan, which will outline the specific monitoring needs, equipment, and processes used to measure, maintain, and report PM_{10} data. It will establish data capture and public data reporting protocols. The plan will include supporting documents that define concentration thresholds for alerting onsite construction management to rising dust levels. Then, construction management will need to implement extra dust suppression BMPs at the target site. A list of BMPs and construction activities will be included in this plan. The plan also will include quality control and action plan items required for EPA and CDPHE-APCD data reporting and equipment calibration and maintenance.

During construction, air monitoring will be conducted to ensure that dust control efforts are successful in preventing violations of air quality standards. The air quality monitoring conducted during construction of the Central 70 Project will focus on PM_{10} monitors in active construction areas along the corridor, as practicable, to monitor hourly PM_{10} concentrations. The purpose of this temporary monitoring will be to maintain awareness of dust generation from active ground-disturbing processes, such as demolition, excavation, rock crushing, etc.; to help in identifying localized rising dust levels; and to activate a responding BMP Implementation Plan if dust levels attain pre-determined thresholds.

Additionally, as noted in *Section 5.18, Hazardous Materials*, of the Final EIS, site-specific health and safety and materials management plans will be developed by CDOT to stipulate required response measures if hazardous materials are encountered during construction to ensure protection of worker and public health and safety.

AQ8. Air quality and truck emissions

Commenters raised concerns over how truck emissions were considered in the air quality analysis. Diesel particulate matter was analyzed through an emissions inventory, which was done by CDPHE-APCD using data on truck activity for the Denver Metro Area consistent with that used in the regional conformity modeling. A different methodology was used to represent trucks in the hot spot analysis; in that analysis, truck emissions were explicitly calculated for each link based on the DRCOG-estimated 2040 truck volumes for those links. This is more precise for purposes of a localized assessment. Although the total number of trucks is expected to increase significantly, in most cases the number of light-duty vehicles is increasing at an even faster rate. Thus, in 2040, trucks will make up a lower total percent of volume than in 2010.

AQ9. $PM_{2.5}$ and nitrogen dioxide

A concern raised in the comments revolved around why some additional transportation-related pollutants, such as fine particulates and nitrogen dioxide, were not examined like carbon monoxide or course particulates were.

$PM_{2.5}$ and nitrogen dioxide were not modeled for roadside concentrations in the Final EIS because they are not pollutants of concern in the Denver area or the project area at the present time or into the foreseeable future. Instead, $PM_{2.5}$ and nitrogen dioxide were examined through emissions inventories. The Denver area has never violated the NAAQS for $PM_{2.5}$. The value used to determine compliance is the 98th percentile of a three-year trend for $PM_{2.5}$. While the data record from this monitor is incomplete because there is not three full years of data, the readings from CDPHE's I-25/8th Avenue monitoring site (which has higher ADT than the current I-70 East project area) is 30 micrograms per cubic meter ($\mu g/m^3$), compared to the standard of 35 $\mu g/m^3$. Since Denver is an attainment area for $PM_{2.5}$, no hot spot modeling for $PM_{2.5}$ is required. With regard to nitrogen dioxide, the EPA conformity regulations do not require hot spot modeling for nitrogen dioxide. 40 CFR §93.116 clearly states that it only applies to non-attainment or maintenance areas, thereby exempting the Denver metro area from performing hot spot analyses for nitrogen dioxide.

The project used the best science and data available to make its determinations about NAAQS violations. The approved methods to determine air quality impacts, developed in consultation with EPA and CDPHE-APCD, show the project will not cause exceedances of the NAAQS.

AQ10. Greenhouse gases

Some comments questioned whether the greenhouse gas (GHG) analysis in the Final EIS was adequate. GHG emissions were examined in the Final EIS utilizing state-of-the-art modeling software to estimate the emissions regionally, and followed FHWA guidance in *Interim Guidance Update on Mobile Source Air Toxic Analysis in NEPA (December 6, 2012)*. The analysis used the Motor Vehicle Emissions Simulator (MOVES) model to calculate the carbon dioxide emissions in various years by each of the alternatives discussed in the Final EIS, and reported in *Section 7.4.8, Greenhouse Gas Emissions Inventories*, of *Attachment J, Air Quality Technical Report*.

The two alternatives with general-purpose lanes that were modeled show almost identical GHG emissions, which would be expected because the freeway capacity is the same for both. The Partial Cover Lowered Alternative with Managed Lanes Option results in lower GHG emissions than the modeled Build Alternatives with general-purpose lanes only.

On August 2, 2016, the CEQ issued *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*, which describes how agencies should address climate change in NEPA reviews. Though there is new CEQ guidance, Interagency Consultation with FHWA, EPA, and CDPHE-APCD confirmed that it is not necessary to repeat this analysis because of the following reasons:

- Changes to the project design are minimal, so changes to results of analysis at the air quality study area level—which includes the entire project, as well as the surrounding local road network—would not be noticeable
- The study area air quality inventory analysis is primarily a trend-line comparison between project alternatives. The Final EIS adequately discusses these trends for the use of a NEPA comparison and updates to the analysis for the ROD would not alter previously shown study area air quality trends
- The new CEQ guidance states that projects that have published a Final EIS are not required to address the guidance

Consistent with its view that broad-scale efforts hold the greatest promise for meaningfully addressing the global climate change problem, FHWA is engaged in developing strategies to reduce transportation's contribution to GHGs—particularly carbon dioxide emissions—and to assess the risks to transportation systems and services from climate change.

At the state level, there also are several programs underway in Colorado to address transportation GHGs. The CDOT Air Quality Action Plan addresses unregulated MSATs and GHGs produced from Colorado's state highways, interstates, and construction activities. As a part of CDOT's commitment to addressing MSATs and GHGs, CDOT has committed to program-wide activities. Even though project-level mitigation measures will not have a substantial impact on global GHG emissions because of the exceedingly small amount of GHG emissions involved, mitigation measures during construction will have the effect of reducing GHG emissions. These activities are part of a program-wide effort by FHWA and CDOT to adopt practical means to avoid and minimize environmental impacts in accordance with 40 CFR §1505.2(c).

Property Impacts

PROP1. Property acquisitions

Concerns raised in the comments include how many properties are being acquired due to the project, relocation assistance provided, and who is eligible. The Preferred Alternative will require the acquisition of property that will result in the relocation of 56 residential units and 17 businesses (including one non-profit organization). Of the 56 residential units, 33 are located in Elyria (9 percent of the available housing stock in Elyria) and 23 are located in Swansea (1.6 percent of the housing stock in Swansea). (These do not add to the 3 percent total reported in other sections of the document. This is because the number reported on this page represents the percentages within the individual Elyria area and Swansea area of the Elyria and Swansea Neighborhood. Statistics in the rest of the document calculate and report these as combined areas.)

CDOT will notify all impacted owners and renters of the intent to acquire an interest in their property, including providing a written offer of just compensation specifically describing those property interests. A right-of-way specialist and, if necessary, a translator, will be assigned to each property owner to help them understand and navigate this process.

The Fifth Amendment of the U.S. Constitution provides that private property may not be taken for a public use without payment of just compensation. Additionally, the Uniform Act is a federally mandated program that applies to all acquisitions of real property or displacements of persons resulting from federal or federally assisted programs or projects, such as the implementation of the I-70 East Project alternatives. The Uniform Act was created to provide for and ensure that just compensation for government-acquired land is applied "uniformly." CDOT requires Uniform Act compliance on any project for which it has oversight responsibility, regardless of the funding source.

Residents (renters or owners) will not be required to move unless at least one comparable Decent, Safe, and Sanitary (DSS) replacement unit is available. DSS standards are established by federal regulations (25 CFR §700.55) and conform to applicable local housing and occupancy codes. CDOT will provide comparable replacement housing that is DSS and within the resident's financial means before any residents will be required to move. If comparable replacement housing is not available, the regulations allow the agency to provide a replacement housing payment in excess of the statutory maximum as part of the Last Resort Housing process.

The only parties eligible for relocation benefits from CDOT are building occupants who are directly displaced by a CDOT acquisition as a result of this project and who meet the applicable requirements for eligibility.

PROP2. Replacement housing

Substantive comments received questioned how CDOT plans to replenish the housing stock within the neighborhoods after it displaces existing residential properties. To offset the loss of some residential units in the neighborhood, CDOT will provide $2 million in funding to support affordable housing in the Elyria and Swansea Neighborhood through available programs. Additionally, CDOT is looking for ways (e.g., partnerships) to leverage the funding to make the largest positive impact possible. This is separate from and in addition to providing relocation assistance to the 56 residential units being displaced.

Environmental Justice Considerations

EJ1. Environmental justice and Title VI

Per Executive Order 12898, CDOT recognizes that the project passes through environmental justice neighborhoods. Because of this, the agency has provided an unprecedented level of public involvement tailored to the low-income and minority populations of the project area to find ways to improve the project and lessen its impacts.

Title VI of the Civil Rights Act of 1964, which states "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance." CDOT is aware of this mandate to not discriminate and seeks to ensure equal access to and treatment of all individuals during the NEPA process. No

specific documentation is required to demonstrate Title VI compliance. However, the record as a whole demonstrates that this standard has been met.

The I-70 East project team used a variety of tools to solicit input and involvement from stakeholders that addressed issues of diversity in language, level of literacy, and exposure to media, including:

- Opening a project office within the project area
- Conveniently locating all public meetings within the project area, accessible by public transportation
- Providing childcare, food, and Spanish translation services at every public meeting
- Providing notifications, advertisements, and other communications in both English and Spanish
- Distributing announcements in local and regional media and at faith-based organizations
- Using local businesses to cater meetings and provide translation services
- Employing project area residents to lead and staff outreach efforts
- Distributing flyers door-to-door to area residences and businesses
- Providing several methods of contact with the project team, including email, telephone, website, postal mail, and walk-ins at the project office

CDOT performed critical analyses that focused on specific impacts in these underserved communities, some of which are mentioned in the 2014 *Health Impact Assessment,* including neighborhood and street connectivity, air quality, access to transit, bicycle and pedestrian facilities, and relocations. To address impacts of the highway project, CDOT has identified mitigation measures above and beyond standard mitigation measures to alleviate the impact on these neighborhoods.

The benefits of the project with the alternatives are fairly distributed in the project area. The project has avoided some impacts, minimized others, and mitigated all impacts that could not be avoided or minimized. Without considering the avoidance, minimization, and mitigation measures, the project will have a disproportionately high and adverse impact to the environmental justice communities. However, the Preferred Alternative includes many innovative mitigation measures to offset the impacts to the low-income and minority populations. Some of these mitigation measures include, but are not limited to:

- Lowering the highway and providing a cover with urban landscape adjacent to Swansea Elementary School
- Providing residents close to the highway construction (between 45th Avenue and 47th Avenue from Brighton Boulevard to Colorado Boulevard) interior storm windows, furnace filters, and two free portable or window-mounted air conditioning

units with air filtration and assistance for the additional utility costs during construction

- Providing $100,000 toward the Denver Office of Economic Development's GES Healthy Food Challenge that will help facilitate access to fresh food
- Providing an HVAC system and upgraded doors and windows for Swansea Elementary School, plus two new additional classrooms
- Providing funding to CRHDC to assist residential and business displacees with financial counseling and procurement of financing for replacement properties and securing business and residential loans
- Providing $2 million in funding to support affordable housing in the Elyria and Swansea Neighborhood through available programs
- Equity impacts for the financial burden of access to the tolled express lanes will be mitigated by providing to eligible residents of Globeville, Elyria, and Swansea free transponders, pre-loading of tolls, or other means determined prior to the opening of the tolled express lanes. Eligibility and the duration of the program are expected to be determined based on factors including, but not limited to, residency, financial burden, number of vehicles per resident or household, etc.

After considering the benefits of the Preferred Alternative along with the avoidance, minimization, and mitigation, the Preferred Alternative will not cause disproportionately high and adverse effects on any minority or low-income populations, in accordance with the provisions of Executive Order 12898 and FHWA Order 6640.23A. Therefore, no further environmental justice analysis is required.

Additionally, the inclusion of managed lanes as part of the Preferred Alternative raises environmental justice questions related to equity impacts: who can use the facility, will there be additional impacts, are there impacts to those who don't have cars, and has everyone been involved in the public process. The managed lanes will provide long-term, reliable travel times for drivers who consider it worth the toll, and overall reduced travel times for users at all income levels. This general reduction in travel time for all users, including those not in the managed lanes, is derived from the reduction of traffic in the general-purpose lanes by the drivers who do choose to use the managed lanes. In addition to this overall reduction in travel times, managed lanes will be implemented with thorough consideration of equity impacts. The project will comply with the state laws at the time of implementation regarding managed lanes and high-occupancy vehicles. See *Attachment E, Traffic Technical Report*, of the Final EIS for more information.

Further, the improvements in north-south connectivity for pedestrian access and bicycle options will increase mobility for those who live in the environmental justice neighborhoods and do not own cars.

See *Section 5.3, Environmental Justice*, of the Final EIS for more information.

Transportation and Traffic

TRANS1. Multi-modal considerations

Concerns raised in the comments include questions about if CDOT accounted for other travel options beyond the car when trying to address the purpose and need of the project. The purpose of this project is to implement a transportation solution that improves safety, access, and mobility and addresses congestion on I-70 in the project area. This project began in 2003 as part of the I-70 East Corridor project, which looked at both highway and transit solutions, including various rail and Bus Rapid Transit routes. The process was initially a joint effort between both highway and transit agencies. In June 2006, the highway and transit elements of the project were separated since it was decided that they serve different travel markets, are located in different corridors, and have different funding sources. The East Corridor transit project connects Denver International Airport to Union Station in downtown Denver along Smith Road, south of I-70. Construction of the East Corridor transit project was complete in 2016. For more information about the transit project, visit: http://www.rtd-fastracks.com/ec_1.

Although the transit portion of the project was split out, the I-70 East Project has taken the effects of the East Corridor transit project, as well as other transit improvements in the area, into consideration. This includes adding their effects into the traffic modeling that was used for the I-70 East Project (see TRANS6 and TRANS12). In addition to including transit projects in the future traffic models, the I-70 East Project also ensures that other known transit projects in the area have not been precluded. Coordination with these other projects will be ongoing throughout construction.

In addition to considering transit in the area, the Preferred Alternative is also consistent with Denver's bike plan and has evolved to follow Denver safety standards for bicycles and pedestrians. It will improve the bicycle and pedestrian experience in the project area by providing safe crossings across the highway and improving sidewalks and lighting in the impacted areas. CDOT is working with Denver to create multi-modal connections and maximize pedestrian access in the project area. For example, at I-70 and Quebec Street, the Preferred Alternative includes sidewalks on both sides of Quebec Street for the length of reconstruction.

For more information on walkability and bicycle route improvements, see *Chapter 4, Transportation Impacts and Mitigation Measures*, of the Final EIS.

TRANS2. Intersection at 47th Avenue and York Street

Public comments presented interest in improvements at the intersection at 47th Avenue and York Street. The Central 70 Project does provide improvements to the intersection at 47th Avenue and York Street, including:

- Adding a southbound left-turn pocket
- Reconstructing the crossing

- Adding a railroad pre-signal

In addition to these improvements, Denver has initiated an alternatives analysis for this area to identify potential safety improvements. As part of this process, Denver has submitted a grant application to obtain funding for a pedestrian bridge at this location. The alternative analysis initiated by Denver proposing additional improvements at this intersection will not be a part of the Central 70 Project or the I-70 East Project; however, the Central 70 Project and the I-70 East Project do not preclude them.

TRANS3. Traffic forecasting and modeling

Many comments received during the Final EIS review period raised concerns over how future traffic was forecasted and what models were used. Forecasting for this project in the Final EIS was done using the 2035 DRCOG trip-based Compass version 5 travel demand model, which is the latest Compass model released by DRCOG. Compass is a regional model that applies projected land use data, including population and employment growth, to project future traffic conditions. Travel demand models provide output in the form of vehicle demand or volume. This model incorporates household and employment data for the region and accounts for programmed roadway and transit projects, including the East Corridor commuter rail line. DRCOG owns and maintains this regional base model that incorporates every municipality within the DRCOG region, which includes the nine counties of Adams, Arapahoe, Boulder, Broomfield, Clear Creek, Denver, Douglas, Gilpin, Jefferson, and the southwest portion of Weld County. Each alternative considered in the Final EIS was incorporated into DRCOG's base model to determine future travel forecasts within the study area. These projections were used to determine the number of lanes needed for each alternative to accommodate future traffic growth.

The fundamental assumptions/characteristics behind the travel demand model include:

- **Growth of the region.** DRCOG uses the best economists and the State Demographer to estimate employment and population growth. This is the source of the current socio-economic data set used in all DRCOG models.
- **Model acceptance.** The model is accepted and certified by FHWA.
- **Network of roadways and transit.** The network coded into the model for the existing and future year conditions includes all projects contained in the DRCOG-approved Fiscally Constrained RTP, along with other roadway capacity projects to be completed by local governments.
- **Behavioral data.** Behavioral aspects of the model are derived from an extensive travel survey conducted by DRCOG and last collected in 2010. These surveys collect large amounts of data and are essential in helping the model relate behavioral trends to travel choices. They are an infrequent and expensive undertaking and, in the travel demand model community, a survey from 2010 is considered recent and credible.

- **Dynamic nature of the model.** The model is always changing as new land uses and roadway network elements become available. The model is updated frequently and calibrated to new traffic counts and estimates of region-wide VMT. The underlying behavioral assumptions also may change as new tabulations of the Front Range Travel Counts become available.

Throughout the project process, updates to data used in the analysis were consistently monitored in relation to the project. At the time that the project team was working on the 2008 Draft EIS and the 2014 Supplemental Draft EIS, the latest adopted travel demand model was the Compass model. In the interim, DRCOG developed a newer travel demand model, called the Focus model, which was adopted by DRCOG in February 2015, well after the completion of the Supplemental Draft EIS and after the start of the Final EIS process. Federal requirements mandate that NEPA studies use the current adopted regional travel demand model for analysis purposes, which was the DRCOG Compass model until February 2015. Along with the implementation of the Focus model, DRCOG began using a new land use model known as UrbanSim. UrbanSim was scheduled to be adopted at the same time as DRCOG's Focus model. The project team worked to determine how to best incorporate updates to available data if necessary. Due to the timing of the adoption of both models, CDOT and FHWA chose to continue using the DRCOG Compass model.

The project team has done a comparative analysis between the volumes from the Compass model being used in the Final EIS and ROD, and the volumes that would have been generated by the newly adopted Focus model. This analysis found that the volumes from the Compass model are slightly higher than the Focus model volumes (typically, less than a 5-percent difference for I-70), which does not change the number of lanes needed for this project. FHWA reviewed the comparative analysis and agreed that the I-70 Final EIS and ROD could continue to use the volumes from the most recent Compass model, which the project is using to complete most analyses.

One exception to this is the air quality conformity analysis in the ROD, which used the most recent adopted travel demand model, Focus 2040. Air quality is based on the volume of and speed of traffic for the year of peak emissions. Since the release of the Final EIS, DRCOG adopted an amendment to the 2040 Fiscally Constrained RTP (March 16, 2016), which includes the Central 70 Project. This extends the hot spot analysis to the DRCOG planning horizon year of 2040, as required by the EPA in 40 CFR §93.116(a), to demonstrate that during the time frame of the transportation plan no new local violations will be created and the severity or number of existing violations will not be increased as a result of the project.

To further evaluate the traffic operations for the alternatives, the output from the DRCOG Compass model was fed into a dynamic traffic assignment model called DynusT. DynusT simulates traffic supply and demand interactions on the network in greater detail for a sub-area of the regional model. The sub-area is larger than the transportation impacts area to ensure it includes reasonable route diversions that could occur. The sub-area for this project extends west of Wadsworth Boulevard to east of Highway E-470 and extends south

of Colfax Avenue to north of approximately 80th Avenue. This ensures that the model will take into account the effects of I-270, I-25, the I-25/I-70 interchange, and the local roadway network in the analysis. The model projects speeds, travel times, peak volumes, VMT, and local street volumes for the alternatives. For more information, see *Chapter 4, Transportation Impacts and Mitigation Measures*, of the Final EIS.

DRCOG Compass model inputs include:

- Socio-economic data (i.e., income, employment, etc.)
- Household and population data (i.e., number of individuals per household, either current or predicted future populations)
- Existing and future roadway network data (i.e., volumes, speeds, capacity, etc.)
- Transit network information, including buses and trains (i.e., RTD FasTracks); DRCOG relies on RTD to code the transit portion of the model

Highway and transit output data from the model are:

- Vehicular volumes on roads (flows on links)
- Speeds on links
- Network travel times
- Origin/destination patterns; these are represented by zone-to-zone trip tables, which usually are segmented by travel mode
- Mode splits
- Emissions from cars and trucks
- Transit boardings or Park-n-Ride loadings

TRANS4. Highway laneage and width

A concern raised in the comments was why CDOT needed to widen the highway beyond its existing six lanes. The Final EIS traffic analysis used the 2035 DRCOG regional travel demand model to forecast horizon-year traffic volumes to determine the number of lanes that will be needed in the horizon year of 2035. This model uses planned employment and population data to determine traffic volumes, as discussed in *Chapter 4, Transportation Impacts and Mitigation Measures,* of the Final EIS. This model also accounts for planned improvements to other modal networks, including transit.

Between Brighton Boulevard and I-270, both eastbound I-70 and westbound I-70 are projected to carry more than 10,000 vehicles per hour in the peak design period. Between I-270 and I-225, both eastbound I-70 and westbound I-70 are projected to carry upwards of 15,000 vehicles per hour in the peak design period.

Based on the Transportation Research Board's *Highway Capacity Manual*, to achieve a minimum level of service threshold for a freeway, approximately 2,000 passenger cars must

pass per hour per lane. The planned Build Alternatives propose a 10-lane cross-section (five lanes in each direction), with an additional lane in each direction between I-225 and I-270 (a total of 12 lanes in this section) to meet the forecasted capacity needs. Detailed traffic modeling confirms the proposed improvements. Additionally, the volumes and proposed number of lanes were compared to other freeways in metro Denver, further confirming the proposed cross sections. Detailed information on traffic volumes and forecasting is available in *Chapter 4, Transportation Impacts and Mitigation Measures,* of the Final EIS. Additionally, CDOT and FHWA also considered the need for the highway lanes based on very recently released DRCOG projections of traffic for 2040 that are slightly lower than the 2035 estimates. Based on the segment-by-segment assessment, the agencies concluded that the Phase 1 project lane configurations were still appropriate. See *Attachment E, Traffic Technical Report,* of the Final EIS, for more information.

The proposed highway width of the Partial Cover Lowered Alternative between Brighton Boulevard and Colorado Boulevard includes five lanes of through traffic in each direction (two managed lanes and three general-purpose lanes), for a total of 10 lanes. In some locations, near on-ramps and off-ramps, there is an additional auxiliary lane to allow vehicles to speed up or slow down while entering or exiting the highway. This results in some sections of highway being up to 12 lanes wide. The highway also includes an inside and outside shoulder, which accounts for some of the additional width. Additionally, 46th Avenue is being relocated from its current position underneath the highway to beside the highway. This adds additional width to the footprint of the project.

At present, I-70 has many design deficiencies that do not meet current standards, such as narrow lane widths and insufficient shoulder width of only two feet in some sections. Reconstruction of the highway, along the existing alignment or at any other location, would require that the deficiencies identified be addressed and that the highway be built to meet current design standards.

TRANS5. Restricting truck traffic on I-70

Some comments received asked if CDOT could restrict truck traffic on portions of I-70 to reduce the traffic and meet the project's purpose and need without widening the highway. Part of the purpose of the interstate system is to promote economic development, and trucking is a major influence on the nation's economy. The areas adjacent to I-70 East are highly industrial and rely heavily on the need for trucks to move in and out of the area with ease. If truck access to I-70 were restricted, they would be forced to use local streets to access the local businesses in the area, negatively impacting safety and mobility in the nearby neighborhoods.

Except in limited circumstances (e.g., adverse weather, construction zones), per 23 CFR §658.11(d), the state of Colorado cannot deny truck access nor place restrictions on the interstate system without FHWA approval. The request needs to be based on safety concerns. It requires an analysis of the impact to interstate commerce, and analysis and recommendations of alternative routes. A rebuilt I-70 East would significantly improve

safety along this stretch of interstate for trucks and all other vehicles and surrounding neighborhoods.

CDOT conducted a heavy vehicle traffic study to determine how many heavy vehicles travel between I-270 and I-76 in a continuous journey (See *Attachment E, Traffic Technical Report,* of the Final EIS). The heavy vehicles that travel through this area represent less than 3 percent of the average, directional heavy vehicle traffic and less than 0.5 percent of total directional traffic. This demonstrates that a significant number of heavy vehicles either make stops or redirect north or south in this section.

The collected data represents the total number of heavy vehicles that would be eliminated from the I-70 corridor if an I-270/I-76 reroute were implemented. Due to the low numbers of heavy vehicles passing all the way through the corridor and the off-peak travel distribution of those heavy vehicles, rerouting heavy vehicles to I-270/I-76 would not change the number of lanes required for the I-70 project.

TRANS6. Future driving trends

The project team has incorporated as much knowledge as possible into forecasting traffic patterns and trends. Although some recent studies have shown that people are driving less, the 2035 MVRTP predicts the Denver metropolitan area will continue to experience large growth through 2035, including a 59-percent increase in population and a 64-percent increase in employment as compared to 2005 numbers. This means that although individual drivers may drive less, the net increase in the total number of drivers on the road will result in an overall increase in VMT. It is CDOT's responsibility to provide a transportation system that will accommodate this growth. Before conducting the analysis, future (2035) transportation system characteristics were identified. DRCOG uses the economists and the State Demographer to estimate employment and population growth. This is the source of the current socio-economic data set used in all DRCOG models. All I-70 project alternatives assume implementation of the transportation improvements identified in the DRCOG 2035 MVRTP. This includes both programmed projects (those budgeted in the five-year DRCOG 2016–2021 TIP and planned projects (those not in the TIP, but included in the adopted DRCOG 2035 MVRTP). The more significant planned and programmed improvements to the transportation system within the study area are shown in *Chapter 4, Transportation Impacts and Mitigation Measures*, of the Final EIS.

In addition to planned roadway improvements, the analysis assumed the implementation of major transit system improvements within the Denver region as part of RTD's FasTracks program. Of most significance in the study area is the East Corridor commuter rail project, which runs from downtown Denver to Denver International Airport. The future traffic modeling accounted for these projects and their impact on travel demand.

The higher transit ridership due to expansion in transit was considered in the analysis of the Final EIS. Even with expanded transit use, the analysis shows an increase in ADT in the future, which requires additional lanes on the highway to accommodate the added traffic.

In addition, while some comments have pointed to national reductions in VMT following the recession of 2007-08, recent FHWA data have shown that VMT has been increasing again during the last 18 months and has reached pre-recession levels. For more information, see: https://www.fhwa.dot.gov/policyinformation/travel_monitoring/15juntvt/15juntvt.pdf.

TRANS7. Transportation Demand Management

Some comments received expressed concern regarding TDM considerations and the importance of including TDM strategies as a measure to minimize impacts. Therefore, the following mitigation commitment has been added to the transportation mitigation measures during construction: Develop and implement a TDM program during construction, which could include items such as working with RTD on enhanced transit service and ITS improvements.

Funding Strategies

FUND1. Managed lanes

Some comments received questioned why managed lanes are being included as part of the Preferred Alternative. The Managed Lanes Option is selected as the Operational Option of the Preferred Alternative because of its long-term operational flexibility and mobility benefits. Managed lanes provide drivers with flexibility by allowing them to pay a fee to bypass congestion in general-purpose lanes, improving reliability in travel times. It also allows CDOT to manage congestion over the long term, reducing the need for future expansion. The Managed Lanes Option also has a higher throughput potential, meaning it accommodates more people at a given time. This option accommodates express buses, carpools, and other high-occupancy vehicles, providing increased service to those riders. This option also promotes the use of carpools to avoid congestion.

Managed lanes are proposed for I-70 East strictly as a traffic management strategy, not to generate revenues or as part of a public-private partnership. The effects of the Managed Lanes Option on corridor operations were analyzed for the Final EIS, but the pricing structure has not yet been established. Through discussions related to pricing and policies of managed lanes throughout the state, it was determined that toll rates will be established by the HPTE Board of Directors and will be set at a level necessary to maintain free-flow traffic conditions in these lanes. The HPTE is determining policies for managed lanes at a statewide level and will determine pricing on a corridor-by-corridor basis. The project will comply with state laws that are established regarding express lanes and high-occupancy vehicles. Existing general-purpose lanes will not be tolled.

FUND2. Project funding

How much the project will cost and project funding were two questions raised in the comments. The entire Preferred Alternative identified in the I-70 East Final EIS is estimated to cost approximately $1.7 billion and the Central 70 Project is estimated to cost $1.1 billion (based on preliminary design estimates in 2016 dollars)—including design, right-of-way acquisition, and construction— The full I-70 East Preferred Alternative would

cost more than the $1.1757 billion currently identified in the DRCOG Fiscally Constrained RTP, as amended (DRCOG, 2015c). Because the FHWA can only approve project improvements in a ROD that are included in a fiscally constrained plan, a phased approach is necessary. The identification of an initial phase for implementation, now called the Central 70 Project, is consistent with FHWA requirements to have funding for projects identified before final decisions are made.

The elements included in the Central 70 Project are consistent with the projects, priorities, and funding identified in the DRCOG Fiscally Constrained RTP. Following the publication of the Final EIS, FHWA performed an independent cost estimate review to verify the accuracy and reasonableness of the Preferred Alternative's cost estimate. FHWA's review used a probabilistic approach that included risk events and inflation. The results of the review indicated the total project, including past costs, would have a current-year cost between $1.424 billion to $1.866 billion, with a year of expenditure cost ranging from $1.721 billion to $2.329 billion. The Central 70 Project would cost, in current-year dollars, between $1.016 billion and $1.291 billion, with a year of expenditure of $1.097 billion to $1.402 billion.

The following funding sources are currently committed to the project:

- $850 million—Colorado Bridge Enterprise Safety Surcharge
- $50 million—DRCOG: STP-Metro and CMAQ
- $180 million—Senate Bill 09-228 Transfers
- $37 million—Denver

Projects that will be necessary to complete implementation of the entire Preferred Alternative, but are not included in the Central 70 Project, may be identified in the future. As funding is identified and projects are identified in the Fiscally Constrained RTP, new RODs will be completed. These future projects will be designed to minimize interim infrastructure for those parts of the project that would not have to be built if the entire Preferred Alternative were built at one time. These interim pieces come with additional impacts, which would result in irretrievable losses of labor, funding, energy, and materials, and environmental impacts such as an extended construction period resulting in more traffic delays and detours that would inconvenience residents, adjacent businesses, and community facilities. Implementation of future phases may not occur if funding beyond the Central 70 Project cannot be identified.

Taxes would not be raised to pay for this project and CDOT is not looking at managed lanes as a way to finance construction of the I-70 East Project.

The Colorado Bridge Enterprise was formed by CDOT in 2009 as part of the FASTER (Funding Advancement for Surface Transportation and Economic Recovery) legislation to finance, repair, reconstruct, and replace structurally deficient bridges. It is funded from a bridge safety surcharge on vehicle registration based upon vehicle weight. Originally, 128

bridges were determined to be eligible for the program and the viaduct was among the 30 worst bridges on the list. As of November 2016, the sufficiency rating of the viaduct was 62 out of a possible 100 points and it is considered functionally obsolete. The I-70 viaduct is the last of the worst 30 bridges and one of the last bridges of the 128 total to be addressed. Due to the concern about the funding impact of the I-70 viaduct replacement on long-term revenues available for rehabilitating other Colorado bridges, the Transportation Commission has required that 50 percent of the available bridge funds (from FASTER) be retained for other needed projects across the state.

For additional information and details on the project funding strategy, see Section 4.1, Central 70 Project Funding Scenario, of this document.

Drainage

DRAIN1. Preferred Alternative Drainage

The drainage needs for the I-70 East Project are provided for by an assortment of improvements incorporated in the design of the project along the full length of the project area. These improvements are required to construct the Central 70 Project and have been designed to accommodate flows associated with or affecting the highway.

To address the drainage needs specific to the Central 70 Project between Brighton Boulevard and Dahlia Street, two systems—an onsite outfall system north of I-70 and an offsite outfall system south of I-70—are needed. The onsite outfall system includes the storm drain system necessary to drain I-70, including the lowered section. The system captures and conveys flows that are generated from I-70 to water quality detention ponds that provide water quality treatment. The system is designed to treat and convey a 100-year flow from I-70 into the South Platte River, as shown in **Exhibit 24**.

The offsite outfall system is designed to intercept surface storm runoff generated by lands surrounding I-70 and protect the lowered section of the Central 70 Project between Brighton Boulevard and Colorado Boulevard from flooding in the 100-year event. This system is designed to capture surface flow south of I-70 and prevent it from entering the lowered section of I-70 (Brighton Boulevard to Colorado Boulevard). The design of the offsite outfall system has been modified since the publication of the Final EIS to avoid conflict with Denver's GLO Project, as discussed in Section 9.12 of this document. The offsite outfall system is designed to capture and convey the stormwater and discharge it into the South Platte River, as shown in **Exhibit 25**.

To address the drainage needs east of Dahlia Street, the systems required to address onsite flows (stormwater generated within the interstate) and offsite flows (storm runoff draining into the interstate right of way from surrounding lands) are addressed by a single system. This system is a modification of the existing system in place; it is resized to capture and treat the increased runoff caused by the increase in impervious (paved) surface.

Exhibit 24 Onsite Outfall System North of I-70

Exhibit 25 Offsite Outfall System South of I-70

The length of I-70 that will be located below groundwater level is relatively short, between Vine Street and York Street. It is not uncommon for construction of roadways to be located below the groundwater level, including highways in the Denver metro area. The final design effort will further look to limit the length of I-70 that would be below groundwater and consider the associated effects to the groundwater levels.

For more information about the drainage plan for the Central 70 Project, see Section 9.12, Floodplains and Drainage/Hydrology, in this ROD.

DRAIN2. Connected actions

The I-70 East Project and the Two Basins Drainage Project (TBDP) (now also known as the Platte to Park Hill (P2P) Stormwater Systems Project) are not connected actions for the purposes of NEPA and they do not need to be analyzed as one project. The projects are proposed by different agencies, respond to different needs, serve different purposes, have independent utility, and can function independently of each other if one of them was not built.

The I-70 East Project is a joint state-federal action proposed by CDOT and aided by FHWA to address safety, access, mobility, and congestion issues on the highway system. The associated drainages for the Preferred Alternative are subservient to this purpose and are needed to capture and convey onsite and offsite flows from the highway. It is a federal action subject to NEPA because it will utilize federal funds and require federal agency approvals. The TBDP is a municipal action by Denver to address longstanding flooding concerns in its northern neighborhoods south of I-70. The system is designed for the express purpose of alleviating flooding risk caused by significant precipitation runoff in these areas, not by the improvements planned in the Preferred Alternative. The TBDP is not a federal action subject to NEPA because its proponent is not a federal agency nor is it utilizing federal assistance. The two projects are stand-alone actions by different agencies and are not dependent on one another for justification or feasibility. They each have independent utility such that each of the projects would take place regardless of the other, which is the legal standard adopted in this jurisdiction.

CDOT and Denver entered into an Intergovernmental Agreement (IGA) that establishes the framework for collaboration on numerous concerns in the project area including storm water drainage. Assuming that Denver moves forward with implementation of the TBDP, CDOT has agreed through the IGA to coordinate efforts and assist with the costs of certain components of the TBDP that would benefit I-70 East, such as the GLO Project explained below. However, CDOT and FHWA have not been involved in the proposal, development, or implementation of the TBDP, but are simply taking advantage of new opportunities for cooperation, cost savings, and benefits that the TBDP, if it is constructed, offers to the I-70 East Project. Even though CDOT and Denver have agreed to work together and share some of the financial burdens, each project is nonetheless capable of proceeding on its own merits, has independent utility, and their potential collaboration does not defeat their separateness for the purposes of NEPA. Furthermore, to the extent that collaboration

between the projects alters the design of the Preferred Alternative evaluated in the Final EIS, CDOT and FHWA will conduct a reevaluation to determine and disclose the environmental impacts caused by those alterations and their significance.

Since publication of the Final EIS, Denver has made major advancements in the implementation of its GLO Project—a subcomponent of the TBDP— which creates a conflict with the design of the offsite drainage system of the I-70 East Project proposed and analyzed in the Final EIS. Denver notified the project team about the conflict in their comments provided on the Final EIS. The conflict required the redesign of the I-70 East offsite system in vicinity of the Coliseum and South Platte River. The redesign will utilize the components of the GLO system to convey I-70 storm water to the river creating a combined outfall system, which will minimize impacts and result in benefits to both projects. Because of this, the components of the GLO system used by I-70 are being treated as part of the I-70 East offsite drainage system and their impacts are analyzed in this ROD as updates to the Final EIS. Additional details can be found in Section 9.12, Floodplains and Drainage/Hydrology. This does not affect the relationship of I-70 East to other parts of the TBDP that are not conveying I-70 storm water, which will continue to be treated as separate, non-connected actions.

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Chapter 9 Updates and Clarifications since the Publication of the Final EIS

There have been some changes to the design and construction limits of the alternatives since the Final EIS for the I-70 East Project was published. The project team revisited all of the analyses performed for the Final EIS. Although these changes did not affect the analysis performed for many of the environmental resources, some resources have updated analyses and slightly different impacts compared to the Final EIS.

As stated in the comments received from Denver on the Final EIS, the Partial Cover Lowered Alternative's offsite drainage outfall shown in the Final EIS would result in a conflict with Denver's GLO Project. Subsequently, the Partial Cover Lowered Alternative's south offsite drainage system was redesigned to avoid the conflict. The redesigned system ties into the GLO Project, rather than have two separate outfalls in Globeville Landing Park that would result in impacting the park twice. Therefore, the impacts associated with the portions of the where the Partial Cover Lowered Alternative's water will flow are evaluated for applicable resources in this chapter. More information on the offsite drainage system are included in Section 9.12, Floodplains and Drainage/Hydrology.

Additionally, there are some other changes and clarifications to the Final EIS based on comments received during the public review period. This chapter discusses the updates to the analysis along with the text changes from the Final EIS for those resources or Final EIS chapters that require updating or changes. The strikethrough text represents deletion of a word or a phrase from the Final EIS text, while the underlined text shows the new text. All exhibits that present the construction limits in the Final EIS are updated to include the revised construction limits as shown in **Exhibit 26**. If this revision resulted in changes to the analysis of a resource, the updated analysis has been included in this chapter.

The resources that required no updates or changes to the Final EIS text include:

- Paleontology
- Energy
- Geology and Soils
- Irreversible/Irretrievable Commitment of Resources
- Short-Term Uses versus Long-Term Productivity

Exhibit 26 Revised Construction Limits

9.1 Transportation

The most recent 2035 socioeconomic/demographic forecasts from DRCOG were used as a basis for the travel modeling conducted for the Final EIS.

Updates to the Final EIS Analysis

The traffic analysis as it was reported in the Final EIS has not been updated. The majority of the changes to the roadway network that were done subsequent to the submittal of the Final EIS are minor in nature and located on the local street network (between Brighton Boulevard and Quebec Street). Specifically, the frontage roads have changed the most since the release of the Final EIS. An update to the traffic analysis was not necessary because the type of changes made would not result in substantive changes in volumes within the study area, or generate or reduce trips in the project area; thus, the results as presented in the Final EIS remain unchanged.

Changes to the Final EIS Text

The following discussions include clarifications on *Chapter 4, Transportation Impacts and Mitigation Measures,* of the Final EIS:

Updates to transportation mitigation measures:

The following mitigation commitments have been added to the transportation mitigation measures during construction:

- Develop and implement a TDM program during construction, which could include items such as working with RTD on enhanced transit service and ITS improvements.
- Coordinate with affected local governments, residents, and businesses to minimize disruptions during construction.

9.2 Social and Economic Conditions

Updates to the Final EIS Analysis

Although there have been minor modifications to the Preferred Alternative's design, these changes do not affect the analysis performed for the Social and Economic Conditions section of the Final EIS. However, a change to the Relocations and Displacements section of the Final EIS results in one less business relocation for the Revised Viaduct Alternative, North Option; the Revised Viaduct Alternative, South Option; and the Partial Cover Lowered Alternative. Since this information also is presented in the Social and Economic Conditions section of the Final EIS, this change also must be reflected there.

The business property at 4375 Havana Street in the Stapleton Neighborhood is a CDOT maintenance facility that has been confirmed to be owned by CDOT versus being owned by Denver, as was assumed in the Final EIS. Since CDOT owns and operates this property, this business relocation is not applicable. Therefore, the number of business relocations, including non-profit, for each Build Alternative analyzed is reduced by one:

- Revised Viaduct Alternative, North Option—previous: 15, new: 14
- Revised Viaduct Alternative, South Option—previous: 27, new: 26
- Partial Cover Lowered Alternative—previous: 18, new: 17

Changes to the Final EIS Text

The following discussions include clarifications on *Section 5.2, Social and Economic Conditions,* of the Final EIS:

Global change in Section 5.2 of the Final EIS:

All text discussions regarding the number of business relocations are updated to reflect the revised numbers for all alternatives, as discussed previously.

All text regarding pedestrian improvements is clarified to state that they will all comply with the ADA.

Page 5.2-34—Fourth paragraph now reads:

The Partial Cover Lowered Alternative will ~~affect~~ acquire 56 housing units, which is approximately 3 percent of the housing units in the Elyria and Swansea Neighborhood.

9.3 Environmental Justice

Updates to the Final EIS Analysis

There are no updates or changes to the Environmental Justice analysis and results since the publication of the Final EIS.

Changes to the Final EIS Text

The following discussions include clarifications on *Section 5.3, Environmental Justice*, of the Final EIS:

Global change in Section 5.3 of the Final EIS:

All text discussions regarding the number of business relocations and the number of impacted noise receptors are updated to reflect changes discussed in Section 9.5, Relocations and Displacements, and Section 9.10, Noise.

Page 5.3-38—Second paragraph now reads:

The equity impacts on low-income and minority populations can be mitigated through careful design and implementation of the operational strategy programs and policy. To offset impacts to the low-income communities, there are statewide policy decisions that will be refined and implemented later as part of a statewide initiative and not specific to this project. ~~Mitigation strategies being considered by CDOT used in other highway projects with managed lanes across the nation—include allowing vehicles with three or more occupants to use the managed lanes free of charge.~~ The project will comply with the state laws at the time of implementation regarding managed lanes and high-occupancy vehicles.

Updates to environmental justice mitigation measures:

The following mitigation commitment has been added since the publication of the Final EIS:

- Provide residents close to the highway construction—between 45th Avenue and 47th Avenue from Brighton Boulevard to Colorado Boulevard—furnace filters.

The following mitigation commitments have been updated since the publication of the Final EIS:

- ~~Provide contributions to existing programs that facilitate access to fresh food.~~ Provide $100,000 toward the Denver Office of Economic Development's GES Healthy Food Challenge that will help facilitate access to fresh food.
- Provide $2 million in funding to ~~develop~~ support affordable housing ~~units~~ in the Elyria and Swansea Neighborhood through available programs.
- ~~Research ways to provide assistance for low-income populations within the area (such as free transponders) for using the managed lanes~~

Eligible residents of Globeville, Elyria, and Swansea will be provided mitigation for the financial burden of access to the tolled express lanes through either free transponders, pre-loading of tolls, or other means determined prior to the opening of the tolled express lanes. Eligibility and the duration of the program are expected to be determined based on factors including, but not limited to, residency, financial burden, number of vehicles per resident or household, etc.

9.4 Land Use

Updates to the Final EIS Analysis

The modifications to the project footprint and construction limits for the Partial Cover Lowered Alternative have resulted in changes to the acreage of existing land use converted to a transportation use. Additionally, changes to the offsite drainage system design for the Partial Cover Lowered Alternative result in changes to the general land-use category Parks/Open space, which was not identified previously. **Exhibit 27** captures the updated acreage for each land-use category for the Partial Cover Lowered Alternative.

Exhibit 27 Updated Land-Use Impacts

Alternative	Land Use Category						
	Commercial	Government/ Institutional	Industrial	Parks/Open Space	Residential	Vacant	Total Acres
Partial Cover Lowered Alternative	30.1	1.1	28.0	~~0~~ 1.1	7.4	0.1	~~66.6~~ 67.7

Changes to the Final EIS Text

The following discussion includes clarifications on *Section 5.4, Land Use*, of the Final EIS:

The updated land-use impacts in **Exhibit 27** replaces the Partial Cover Lowered Alternative table entries in Exhibit 5.4-8 of the Final EIS.

9.5 Relocations and Displacements

Updates to the Final EIS Analysis

Since publication of the Final EIS, ownership of the business property at 4375 Havana Street in the Stapleton Neighborhood, which is a CDOT maintenance facility, has been confirmed to be CDOT-owned rather than Denver-owned, as was stated in the Final EIS. Since CDOT owns and operates this property, this business relocation is no longer applicable.

The number of business relocations for each alternative analyzed is reduced by one and this information is presented in **Exhibit 28**.

Exhibit 28 Updated Business and Non-Profit Relocations by Alternative and Neighborhood

Alternative/Option	Neighborhood	Business Relocations	Non-Profit Relocations
Revised Viaduct Alternative, North Option	Elyria and Swansea	10	1
	Northeast Park Hill	3	—
	Stapleton	~~1~~ 0	—
	Total	**~~14~~ 13**	**1**
Revised Viaduct Alternative, South Option	Elyria and Swansea	22	1
	Northeast Park Hill	3	—
	Stapleton	~~1~~ 0	—
	Total	**~~26~~ 25**	**1**
Partial Cover Lowered Alternative	Elyria and Swansea	13	1
	Northeast Park Hill	3	—
	Stapleton	~~1~~ 0	—
	Total	**~~17~~ 16**	**1**

Changes to the Final EIS Text

The following discussions include clarifications on *Section 5.5, Relocations and Displacements,* of the Final EIS:

The updated business relocations in **Exhibit 28** replaces the Build Alternative entries of Exhibit 5.5-9 in the Final EIS.

Global change in Section 5.5 of the Final EIS:

All text discussions and exhibits regarding the number of business relocations are updated to reflect the changes discussed in the subsection above.

9.6 Historic Preservation

Updates to the Final EIS Analysis

Design refinements since the Final EIS have caused changes to the Area of Potential Effect (APE) and historic resource impacts. Additionally, some properties have reached the age threshold for consideration as a historic resource since the last time the surveys were conducted and now include properties built in 1968 or earlier. These changes require the addition of several historic resources not previously included. These changes are captured in the Section 106 consultation in September 2015, February 2016, and October 2016, and were concurred upon by SHPO in September 2015, March 2016, and November 2016,

respectively (see *Attachment B, Agency Consultation Addendum* in the Final EIS and *Attachment B, Updates to Agency Consultation Addendum* in this document).

Exhibit 29 presents all the historic resources within the APE with their effects determinations. The newly identified historic resources that have been surveyed and are eligible for listing on the NRHP since the Final EIS was published are included at the end of the table. The effects determinations have been abbreviated as follows:

- AE: Adverse Effect
- NAE: No Adverse Effect
- NE: No Effect

Exhibit 29 Historic Resources within the APE and Their Effects Determination

#	Property Name and Address	No-Action Alternative		Revised Viaduct Alternative		Partial Cover Lowered Alternative
		North Option	South Option	North Option	South Option	
1	Ponce Residence 4668 High Street (5DV10034)	NAE	NAE	NAE	NAE	NAE
2	Rudy/Bernal Residence 4618 High Street (5DV9735)	AE	NAE	AE	AE	AE
3	Garcia Residence 4617–4625 Race Street (5DV9780)	AE	NAE	AE	AE	AE
4	Abrams/Loretta Residence 4679 Vine Street (5DV10135)	NAE	NAE	NAE	NAE	NAE
5	Toth/Kelly Residence 4639 Claude Court (5DV9668)	NAE	NAE	NAE	NAE	AE
6	Brown and Alarid Residence 4637 Claude Court (5DV9667)	NAE	NAE	NAE	NAE	AE
7	Huffman Residence 4707 Josephine Street (5DV10058)	NAE	NAE	NAE	NAE	NAE
8	Krutzler/Barajas Residence 4681 Josephine Street (5DV9761)	NAE	NAE	NAE	NAE	NAE
9	Hovan/Plazola Residence 4673 Josephine Street (5DV1172)	NAE	NAE	NAE	NAE	NAE
10	James Residence 4651 Josephine Street (5DV9753)	NAE	NAE	NAE	NAE	NAE
11	Waggoner Residence 4647 Josephine Street (5DV9751)	NAE	NAE	NAE	NAE	NAE
12	Lovato Residence 4696 Josephine Street (5DV5623/5DV9765)	NAE	NAE	NAE	NAE	NAE

Exhibit 29 Historic Resources within the APE and Their Effects Determination

#	Property Name and Address	No-Action Alternative		Revised Viaduct Alternative		Partial Cover Lowered Alternative
		North Option	South Option	North Option	South Option	
13	Geo Trust/Araujo Residence 4682 Josephine Street (5DV9762)	NAE	NAE	NAE	NAE	NAE
14	Tomas/Eagan Residence 4653 Columbine Street (5DV9996)	NAE	NAE	NAE	NAE	NAE
15	Miranda Residence 4632 Josephine Street (5DV5677)	NAE	NAE	NAE	NAE	NAE
16	Pavon Residence 4633 Columbine Street (5DV9706)	NAE	NAE	NAE	NAE	NAE
17	Chavez Residence 4628 Josephine Street (5DV9748)	NAE	NAE	NAE	NAE	NAE
18	Castorena/Braswell Residence 4631 Columbine Street (5DV9705)	NAE	NAE	NAE	NAE	NAE
19	Stop-N-Shop Food Store 4600 York Street (5DV9801)	AE	NAE	AE	NAE	AE
20	Sanchez Business 2381 East 46th Avenue (5DV9655)	AE	NAE	AE	NAE	AE
21	Portales Residence 4608 Josephine Street (5DV9746)	AE	NAE	AE	NAE	AE
22	Kenworthy/Wyckoff Residence 4529 Josephine Street (5DV9745)	NAE	NAE	NAE	AE	NAE
23	Langenberg Residence 4502 Josephine Street (5DV9742)	NAE	NAE	NAE	NAE	NAE
24	Gonzales Residence 4515 Columbine Street (5DV9994)	NAE	NAE	NAE	NAE	NAE
25	Portales Residence/ Windsor Artesian Water Company 4623–4625 Thompson Court (5DV9787)	NAE	NAE	NAE	NAE	NAE
26	Colonial Manor Motel Tourist Court 2615 East 46th Avenue (5DV7130)	AE	NAE	AE	NAE	AE
27	4541 Clayton LLC Residence 4541 Clayton Street (5DV9679)	NAE	NAE	NAE	AE	NAE
28	Rodriquez Residence 4539 Clayton Street (5DV9678)	NAE	NAE	NAE	AE	NAE
29	Clay II LLC/Rosthan Residence 4459 Thompson Court (5DV10124)	NAE	NAE	NAE	NAE	NAE
30	Olive Street LLC Property 4503 Fillmore Street (5DV9714)	NAE	NAE	NAE	NAE	NAE

Exhibit 29 Historic Resources within the APE and Their Effects Determination

#	Property Name and Address	No-Action Alternative		Revised Viaduct Alternative		Partial Cover Lowered Alternative
		North Option	South Option	North Option	South Option	
31	Tenenbaum Residence 4453 Fillmore Street (5DV10014)	NAE	NAE	NAE	NAE	NAE
32	Guerca/Perez Residence 4446 Fillmore Street (5D10013)	NAE	NAE	NAE	NAE	NAE
33	Lopez/Hartzell Residence 4461 Milwaukee Street (5DV10065)	NAE	NAE	NAE	NAE	NAE
34	Alfred R. Wessel Historic District (5DV10126)	AE two contributing resources	NAE	AE seven contributing resources	AE two contributing resources	AE nine contributing resources
35	Union Pacific Railroad Segment (5DV6248.4)	NAE	NAE	NAE	NAE	AE
36	York Street/East 40th Ave. Brick Sanitary Sewer (5DV11283)	NAE	NAE	NAE	NAE	AE
37	Ralston Purina Plant/Nestlé Purina PetCare Company 2151 East 45th Avenue (5DV9245)	NAE	AE	NAE	AE	NAE
38	Riverside Cemetery 5201 Brighton Boulevard (5AM125)	NAE	NAE	NAE	NAE	NAE
39	National Western Historic District (5DV10050)	NE	NE	NAE	NAE	NAE
40	Banker's Warehouse Co. (5DV11720)	NAE	NAE	NAE	NAE	NAE
41	E.G. Trading Post 1630–1632 East 47th Avenue (5DV9805)	NAE	NAE	NAE	NAE	NAE
42	Kosik Residence 4681–4683 Baldwin Court (5DV1247)	NAE	NAE	NAE	NAE	NAE
43	Torres Residence 4656 Baldwin Court (5DV9660)	NAE	NAE	NAE	NAE	NAE
44	Miller Residence 4675 Williams Street (5DV9823)	NAE	NAE	NAE	NAE	NAE
45	Herzberg Property 4665–4669 Williams Street (5DV9828)	NAE	NAE	NAE	NAE	NAE
46	Adams Clock LLC/Mann Residence 4645 Williams Street (5DV9795)	NAE	NAE	NAE	NAE	NAE
47	Allen Investment Group, Inc./Kretschmar Residence 4662–4664 Williams Street (5DV10085)	NAE	NAE	NAE	NAE	NAE

Exhibit 29 Historic Resources within the APE and Their Effects Determination

#	Property Name and Address	No-Action Alternative		Revised Viaduct Alternative		Partial Cover Lowered Alternative
		North Option	South Option	North Option	South Option	
48	Garcia Residence 4695 High Street (5DV10040)	NAE	NAE	NAE	NAE	NAE
49	McGee Residence 4460 Adams Street (5DV9968)	NAE	NAE	NAE	NAE	NAE
50	Yoshimura Residence 4450 Adams Street (5DV9966)	NAE	NAE	NAE	NAE	NAE
51	Vasquez Residence 4450 Cook Street (5DV10003)	NAE	NAE	NAE	NAE	NAE
52	Tri-R Recycling 3600 East 48th Avenue (5DV9227)	NAE	NAE	NAE	NAE	NAE
53	Core Power Construction/Buckley JD Inc.-Buckley Explosives of Wyoming 4701 Jackson Street (5DV10047)	NAE	NAE	NAE	NAE	NAE
54	General Motors Corporation-Goalie Construction Business 4715 Colorado Boulevard (5DV9988)	NAE	NAE	NAE	NAE	NAE
55	4800 Colorado LLC/United States Rubber Company 4800 Colorado Boulevard (5DV9989)	NAE	NAE	NAE	NAE	NAE
56	Safeway Distribution Center Historic District (5DV9232)	NE	NE	NAE	NAE	NAE
57	Univar 4300 Holly Street (5DV9231)	NE	NE	NAE	NAE	NAE
58	Burlington Ditch/ O'Brien Canal (5AM465.9)	NE	NE	NE	NE	NE
59	Delgany Common Interceptor Sewer (5DV4725.5)	NE	NE	NE	NE	NAE
60	Burlington and Colorado/Chicago, Burlington, and Quincy Railroad Segment (5DV6247.3)	~~NE~~ NAE	~~NE~~ NAE	~~NE~~ NAE	~~NE~~ NAE	~~NE~~ NAE
61	Market Street RR/ Chicago Burlington & Quincy Railroad Segment (5AM1298.2)	NAE	NAE	NAE	NAE	AE
62	Union Pacific Beltline RR Segment (Denver Rock Island Railroad, 5AM2083.1)	NE	NE	NAE	NAE	NAE
63	Rocky Mountain Arsenal Railroad Segment (5DV7048.2)	NE	NE	AE	AE	AE
64	High Line Canal (5AM261.2) (Not pictured in Exhibit 5.6-2)	NE	NE	NE	NE	NE

Exhibit 29 Historic Resources within the APE and Their Effects Determination

#	Property Name and Address	No-Action Alternative		Revised Viaduct Alternative		Partial Cover Lowered Alternative
		North Option	South Option	North Option	South Option	
65	Garden Place District	NAE	NAE	NAE	NAE	NAE
66	Globeville District	NAE	NAE	NAE	NAE	NAE
67	NWT Rail Spur (5DV12437)	NAE	NAE	NAE	NAE	NAE
68	RLW Sand Company, 4390 Milwaukee Street (5DV12304)	NAE	NAE	NAE	NAE	NAE
69	National Western Security and Employment Building, 4695 Franklin Street (5DV12317)	NAE	NAE	NAE	NAE	NAE
70	High Tech Early College/STRIVE Prep , 11200 East 45th Avenue (5DV12320)	NE	NE	NAE	NAE	NAE
71	Stallcop Residence, 2000 East 47th Avenue (5DV12302)	NAE	NAE	NAE	NAE	NAE
72	Lechuga-Rosales Residence, 4684 Race Street (5DV12303)	NAE	NAE	NAE	NAE	NAE
73	4683 Vine Street LLC Property, 4683 Vine Street (5DV12305)	NAE	NAE	NAE	NAE	NAE
74	Guzman Residence, 4681 Race Street (5DV12306)	NAE	NAE	NAE	NAE	NAE
75	RLW Sand Company, 4695 Milwaukee Street (5DV12308)	NAE	NAE	NAE	NAE	NAE
76	Sanchez Residence, 4700 Fillmore Street (5DV12309)	NAE	NAE	NAE	NAE	NAE
77	Snyder Residence, 4680 Fillmore Street (5DV12310)	NAE	NAE	NAE	NAE	NAE
78	Arrieta Residence, 4691 Vine Street (5DV12311)	NAE	NAE	NAE	NAE	NAE
79	Chavez Residence, 4690 Fillmore Street (5DV12312)	NAE	NAE	NAE	NAE	NAE
80	Urbina Residence, 4685 Milwaukee Street (5DV12313)	NAE	NAE	NAE	NAE	NAE
81	Stadium Arena, National Western Complex, 1325 E 46th Avenue (5DV.3815)	NE	NE	NE	NE	NAE
82	Delgany Street Public Sanitary Sewer (5DV.4725.6)	NE	NE	NE	NE	AE
83	Denver Coliseum, 4600 Humboldt Street (5DV.9162)	NE	NE	NE	NE	NAE
84	Livestock Bridge and Flyover, 1325 East 46th Avenue (5DV.10447)	NE	NE	NE	NE	NAE

Exhibit 29 Historic Resources within the APE and Their Effects Determination

#	Property Name and Address	No-Action Alternative		Revised Viaduct Alternative		Partial Cover Lowered Alternative
		North Option	South Option	North Option	South Option	
85	Burlington and Colorado, Chicago (5DV.6247.1 and 5DV.6247.2)	NE	NE	NE	NE	NAE
86	Union Pacific Railroad Railyard (5DV.6248.3, 5DV.6248.5, 5DV.6248.10)	NE	NE	NE	NE	NAE
87	Burlington Northern Railroad Overpass (5DV.7057)	NE	NE	NE	NE	NAE
88	Concrete Railroad Bridge (5DV.7058)	NE	NE	NE	NE	NAE
89	38th Street Underpass (5DV.7110)	NE	NE	NE	NE	NAE

Exhibit 30 shows the revised APE and the newly identified historic resources within the APE west of Peoria Street. Because there are no changes to the APE east of Peoria Street, the APE east of that location is not pictured in this exhibit. The numbers associated with the NRHP-eligible properties correspond to the numbers listed in **Exhibit 29**.

In addition to the new resources listed in **Exhibit 29** and shown in **Exhibit 30**, modifications to the design resulted in changes in impacts to some resources; however, these revised impacts did not alter the determinations of effect. These resources are:

- Union Pacific Railroad Segment (5DV6248)
- Nestlé Purina PetCare Company (5DV9245)
- Banker's Warehouse Co. (5DV11720)
- Market Street Railroad/Chicago, Burlington & Quincy Railroad Segment (5AM1298.2)
- Union Pacific Beltline Railroad Segment (Denver Rock Island Railroad, 5AM2083.1)
- Rocky Mountain Arsenal Railroad Segment (5DV7048.2)
- National Western Historic District (5D10050)

Exhibit 30 Revised APE and Newly Identified Historic Resources within the APE

A new segment of the Union Pacific Railroad that will be impacted by the Partial Cover Lowered Alternative was recently surveyed and determined eligible for the NRHP. However, this addition does not change the determination of effect to the linear resource. For details on the changes to the impacts, see Chapter 10, Section 4(f) Evaluation Updates, of this document.

The changes to historic resources include only one new Adverse Effect for the Partial Cover Lowered Alternative for the Delgany Street Public Sanitary Sewer (5DV.4725.6). Additionally, the effect on the Burlington and Colorado/Chicago, Burlington & Quincy Railroad Segment (5DV6247.3) has changed from No Effect to No Adverse Effect for all alternatives due to the installation of a permanent easement for a storm drain.

Exhibit 31 summarizes the updated total number of effects for historic resources within the updated APE.

Exhibit 31 Summary of Effects for Historic Resources within the APE

Effect	No-Action Alternative		Revised Viaduct Alternative		Partial Cover Lowered Alternative
	North Option	South Option	North Option	South Option	
Adverse Effect[1]	7	1	8	8	~~13~~ 14
Adverse Effect due to acquisition/demolition[2]	7	1	7	6	9
No Adverse Effect	~~50~~ 64	~~56~~ 70	~~54~~ 69	~~54~~ 69	~~50~~ 73
No Effect	~~9~~ 18	~~9~~ 18	~~4~~ 12	~~4~~ 12	~~3~~ 2

Note: There are no differences in effect between the General-Purpose Lanes and Managed Lanes Options because the project footprint is the same for both options between Brighton Boulevard and Colorado Boulevard, where the majority of historic resources are located.

1. Total includes adverse effects to entire historic district (includes the Alfred R. Wessel Historic District as one resource) and does not include individual contributing resources

2. Adverse effects generally consist of full acquisition and demolition of historic structures, except in the instance of linear resources and historic districts

The mitigation measures outlined for the historic resources remain the same as those listed in the Final EIS. The PA that provides a process for determining mitigation for adverse effects and reevaluating eligibility and effects to historic properties, as appropriate, was executed in April 2016. The PA is included in this document as *Attachment D, Section 106 Programmatic Agreement*.

Changes to the Final EIS Text

The following discussions include clarifications on *Section 5.6, Historic Preservation,* of the Final EIS:

With the addition of the historic resources listed previously, there are now 89 historic resources within the project APE. Six of these are previously identified historic districts that contain multiple contributing elements, and 83 are individually eligible resources.

Design refinements since the Final EIS and additional historic resources have resulted in changes to the APE. Exhibit 5.6-1 from the Final EIS is representative of the revised APE and the updated APE west of Peoria Street is shown in the revised APE and the updated APE west of Peoria Street is shown in **Exhibit 30**.

As shown in **Exhibit 29** and **Exhibit 30**, newly identified historic resources have been added within the APE. The resources shown in **Exhibit 30** are in addition to the resources shown in Exhibit 5.6-2 and Exhibit 5.6-3 from the Final EIS. **Exhibit 29** and **Exhibit 31** replace Exhibit 5.6-5 and Exhibit 5.6-4, respectively, in the Final EIS.

Updates to the historic preservation mitigation measures:

CDOT acknowledges the potential for construction activities to discover unanticipated, sub-surface historic resources during the course of construction, including, but not limited to, trolley tracks, sewer systems, building foundations, or historic artifacts. Therefore, the

following mitigation commitments have been added to the historic preservation mitigation measures during construction:

- Refer to the Section 106 Programmatic Agreement, Stipulation VI, Construction Phase Post-Review Discoveries, which sets forth a process for review of unanticipated resources uncovered during construction.

- Follow the I-70 East Corridor Programmatic Agreement Mitigation Stipulation III (6) to determine appropriate mitigation measures if trolley tracks or any other potential historic resources are discovered during construction and the impact on the resource is determined to be adverse.

Global change in Section 5.6 of the Final EIS:

All text discussions in Section 5.6 of the Final EIS, including Exhibit 5.6-6, regarding effects for historic resources within the APE, are updated to reflect the effects shown in **Exhibit 31**.

9.7 Visual Resources and Aesthetic Qualities

Updates to the Final EIS Analysis

There are no updates or changes to the Visual Resources and Aesthetic Qualities analysis and results since the publication of the Final EIS.

Changes to the Final EIS Text

The following discussions include clarifications on *Section 5.8, Visual Resources and Aesthetic Qualities,* of the Final EIS:

Page 5.8-8—last paragraph now reads:

In addition, the Managed Lanes Option for the Revised Viaduct Alternative and Partial Cover Lowered Alternative will require construction and installation of new infrastructure on the highway in the form of overhead gantries and new signage. This addition will create new visual impacts along the project corridor and west of the I-25 interchange. Since no specific features have been designed at this time, it is not possible to estimate how many gantries or signs will be needed or where they will be located exactly. Because there are other similar managed lanes facilities already in use in the Denver metro area, e.g., along US 36 and I-25, it is reasonable to assume that the new managed lanes infrastructure along I-70 would be very similar in appearance. Despite the lack of specifics, it is important to acknowledge that managed lanes infrastructure will create a different visual image than people on or off the highway are accustomed to seeing, but these facilities will be designed in accordance with the *Aesthetic and Design Guidelines*, as seen in Attachment O of this document.

9.8 Parks and Recreational Resources

Updates to the Final EIS Analysis

Since publication of the Final EIS, the Partial Cover Lowered Alternative's offsite drainage system has been revised, which resulted in increasing the impact to Globeville Landing Park from 0.3 acre to 1.14 acres. The additional impact is a result of improvements and enhancements to the park from the GLO (see Section 9.12, Floodplains and Drainage/Hydrology, for more information on the GLO).

GLO improvements would rehabilitate the entire park, removing all existing park facilities and replacing them with park amenities that have been identified through public outreach efforts conducted by Denver.

The construction of the GLO would result in the replacement of two picnic tables and portions of the disc golf course as part of post construction rehabilitation of the park that includes replacement and construction of these and other amenities. The enhancements to the park will result in a temporary closure of the South Platte River Greenway Trail connection within the park, which will be reconstructed and reopened when the rehabilitation is complete. However, there will be a trail detour in place during the temporary closure.

Because Globeville Landing Park and the South Platte River Greenway Trail are protected under Section 6(f)(3) of the Land and Water Conservation Fund Act, consultation with Colorado Parks and Wildlife and the National Park Service has been ongoing. As discussed in correspondence with Colorado Parks and Wildlife from December 2016, the changes to Globeville Landing Park and the South Platte Greenway River Trail as part of the GLO are considered park improvements/enhancements, and do not constitute a Section 6(f) conversion (see *Attachment B, Updates to Agency Consultation Addendum*).

Therefore, the impacts identified to the Globeville Landing Park and South Platte River Greenway Trail, which are features of the South Platte River Greenway Section 6(f) resource, in the Final EIS by the Partial Cover Lowered Alternative's offsite drainage system would not occur as a result of the project. However, the impacts from construction of the GLO will result in a temporary non-conforming use under Section 6(f) during the construction of the enhancements.

Changes to the Final EIS Text

The following discussions include clarifications on *Section 5.9, Parks and Recreational Resources,* of the Final EIS:

Page 5.9-14—Updates to South Platte River Greenway (Section 6(f) resource only), new text added as third paragraph under heading:

Concurrence that the proposed project will have a temporary non-conforming use of the South Platte River Greenway north of I-70 due to construction of an underground drainage system under Section 6(f)(3) of the Land and Water Conservation Fund Act of 1965 was received from the Denver Parks & Recreation Department on December 13, 2016 and Colorado Parks and Wildlife on December 21, 2016. Conditional concurrence was received from the National Park Service on January 13, 2017 (see *Attachment B, Updates to Agency Consultation Addendum*).

Page 5.9-16, Globeville Landing Park discussion—has been replaced and now reads:

The Partial Cover Lowered Alternative will construct an offsite drainage system south of I-70. The alignment, as shown on Exhibit 5.9-14, will connect to the GLO. The GLO includes a redesign of Globeville Landing Park and the South Platte River Greenway Trail connection combined with a new stormwater open channel connecting to the South Platte River. Globeville Landing Park encompasses 7.29 acres of park area. Two areas of the park—one location is 0.70 acre in size and the other is 0.44 acre in size (totaling 1.14 acres)—would be used for construction of the GLO.

Construction of the GLO would rehabilitate the entire park, removing all existing park facilities and replacing them with park amenities that have been identified through public outreach efforts conducted by Denver. The 0.70-acre area is located in the northwest section of the park and slopes toward the South Platte River. One basket for the disc golf course is located in this area and the rest of this area is an open field with a maintained lawn with limited recreational value because of moderately steep topography. The 0.44-acre area, located on the east side of the park, is relatively flat. It has one basket for the disc golf course and two picnic tables in this area.

The construction of the GLO would result in the replacement of two picnic tables and portions of the disc golf course as part of the rehabilitation of the park that includes replacement and construction of these and other amenities. The enhancements to the park will result in a temporary closure of the South Platte River Greenway Trail connection within the park, which will be reconstructed and reopened when the rehabilitation is complete. A detour will be in place during the temporary closure of the trail.

The I-70 East Project's redesigned drainage system to connect into the GLO requires some additional grading within one of the open channels; however, it does not have additional permanent impacts to Globeville Landing Park.

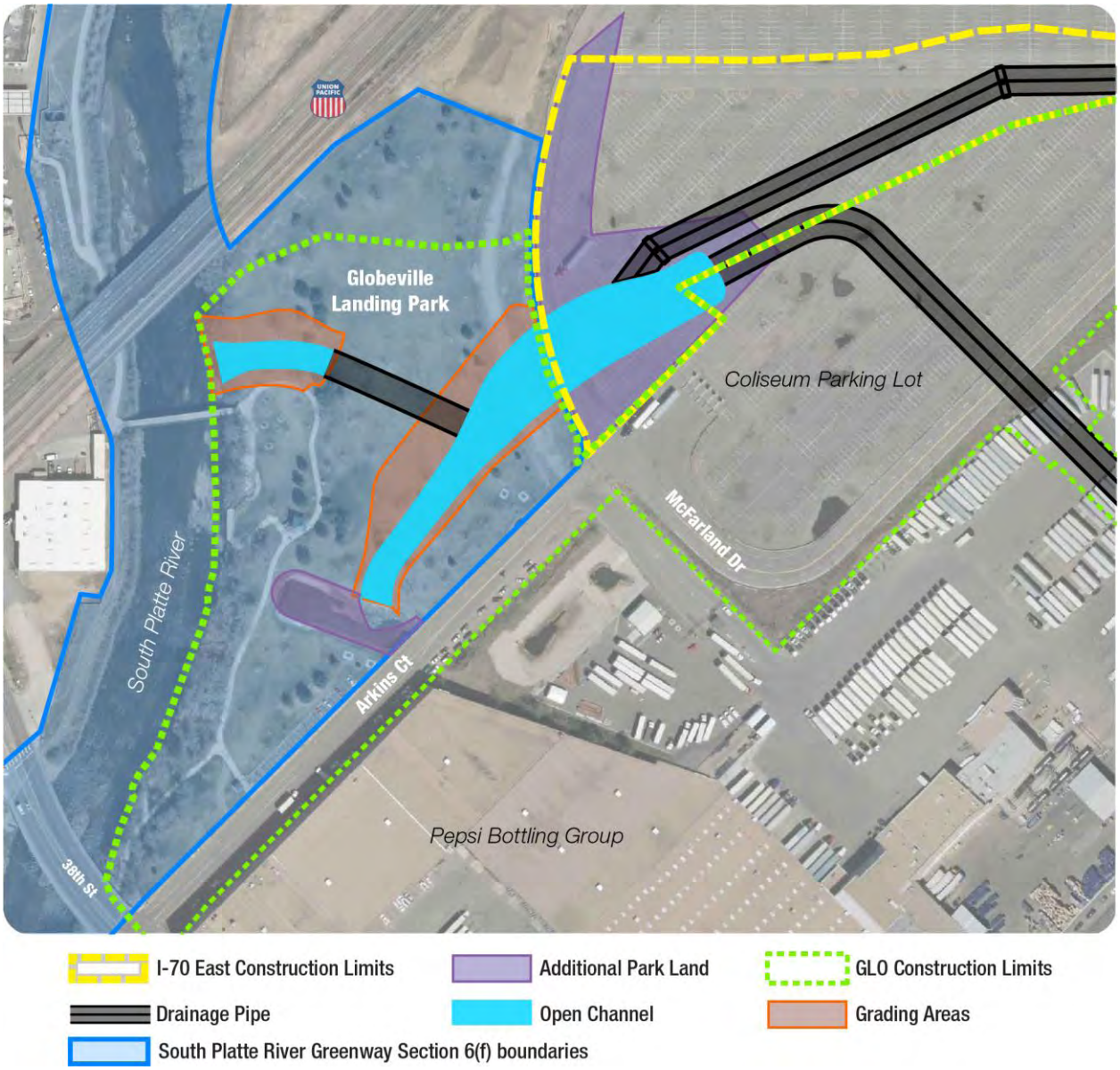
Because Globeville Landing Park and the South Platte River Greenway Trail are protected under Section 6(f)(3) of the Land and Water Conservation Fund Act, consultation with Colorado Parks and Wildlife and the National Park Service has been ongoing. As discussed

in correspondence with Colorado Parks and Wildlife from December 2016, the changes to Globeville Landing Park and the South Platte River Greenway Trail as part of the GLO are considered park improvements/enhancements, and do not constitute a Section 6(f) conversion (see *Attachment B, Updates to Agency Consultation Addendum*). However, the impacts from construction of the GLO will result in a temporary non-conforming use under Section 6(f) during the construction of the enhancements.

Impacts to this resource also require a Section 4(f) analysis, which is updated in Chapter 10, Section 4(f) Evaluation Updates.

Exhibit 32 replaces Exhibit 5.9-14 of the Final EIS.

Exhibit 32 Globeville Landing Park



Page 5.9-19—Updates to South Platte River Greenway—mitigation details

Although South Platte River Greenway is not a recreational resource, because it is considered a Section 6(f) resource, the temporary impacts as a result of the drainage pipe will be minimized by providing adequate notice and signing to Greenway users prior to construction. The area of temporary disturbance will be returned to existing or a comparable state following construction.

Once final design has occurred and prior to impacts occurring to the South Platte River Greenway, a Proposal Description/Environmental Screening Form for the temporary non-conforming uses must be completed, submitted, and approved by CPW and NPS.

Page 5.9-20—Updates to Globeville Landing Park—mitigation details

During construction in Globeville Landing Park, the area surrounding the construction will be fenced off to install the drain pipe. The majority of the park will remain open to the public for recreational use. Once final design has occurred and prior to impacts occurring to Globeville Landing Park, a Proposal Description/Environmental Screening Form for the temporary non-conforming use must be completed, submitted, and approved by CPW and NPS.

Temporary impacts to Globeville Landing Park and the South Platte River Greenway Trail within the park due to construction of the GLO and enhancements to the park will be minimized by providing adequate notice and signing to the park users prior to construction and a trail detour during the temporary closure. Following construction, areas of temporary disturbance to the park will be enhanced or returned to pre-construction conditions.

~~To minimize the use of the park, an alignment north of the South Platte River Greenway Trail and bridge over the South Platte River was selected for the storm drainage system through the park. This alignment also avoids placement of storm manhole lids within the park, which would permanently use the park. Most of this alignment option is a temporary disturbance to the park and the drainage easement/access permit area will be available for recreational use following construction, with the exception of constructing a 0.3-acre drop structure. To offset this impact, the 0.3-acre drop structure of the park permanently converted to a non-recreation use will be replaced in-kind with land of at least current fair market value and of reasonable equivalent usefulness and location. Also, since the drainage easement/access permit area could also limit the function of the area in the future (Denver may not want to located certain activities there in case repairs would need to occur), the 22,360 square foot area will also be replaced in-kind with land of at least current fair market value and of reasonable equivalent usefulness and location.~~

~~With the exception of constructing a boulder drop structure, use of the property will be limited to temporary ground-disturbing activities, which will remove ground vegetation and trees, and will temporarily diminish the use of the disc golf course. After the storm drain is put into place, all of the easement, except the 0.3-acre drop structure, will be available for~~

~~recreational use, although the aesthetics of the immediate area will be disturbed by construction. As mentioned, following construction, areas of temporary disturbance will be returned to pre-construction conditions. This includes any impact to the disc golf course and replacement of vegetation and trees.~~

~~To provide the replacement land, the project is investigating acquiring additional land that Denver has identified near Milstein Park, which is also along the South Platte River trail.~~

~~Coordination with and concurrence from Denver Parks and Recreation (official with jurisdiction) has occurred, and correspondence is included in Attachment B, Agency Consultation Addendum. Conditional approval from Colorado Parks and Wildlife (CPW) and National Park Service (NPS) is anticipated before the ROD is completed. FHWA has indicated that approval, or lack of objection, at this point is sufficient for NEPA clearance. Near the end of construction, but before closing the project, a formal Section 6(f) conversion proposal will be submitted to the NPS by CPW. CDOT will prepare the request for CPW with their approval.~~

Updates to the parks and recreational resources mitigation measures:

The following mitigation commitments have been added to the parks and recreational resources mitigation measures:

- Coordinate with Denver Parks and Recreation and provide trail detours and ADA-compliant detour signage during construction consistent with the 2007 Denver Construction Detour Standards for Bikeways and Multi-Use Trails.
- Coordinate with Denver Parks and Recreation during the design and construction phase to ensure that all trail construction meets current standards if new trail construction or full trail reconstruction is required.
- Once final design has occurred and prior to impacts occurring to Globeville Landing Park and South Platte River Greenway, a Proposal Description/Environmental Screening Form for the temporary non-conforming use must be completed, submitted, and approved by CPW and NPS.

The following mitigation commitments have been removed from the parks and recreational resources mitigation measures:

- ~~Coordinate with Denver Parks and Recreation, CPW, and NPS regarding impact to Globeville Landing Park, a Section 6(f) resource~~
- ~~Replace 0.3 acre of land converted to a non-recreation use by the construction of the spillway in Globeville Landing Park and the utility easement/access permit area with in-kind land of at least current fair market value and reasonable equivalent usefulness and location and investigate the acquisition of land identified by Denver near Milstein Park for this replacement~~

- ~~Conditional approval from CPW and NPS is anticipated before the ROD is completed. FHWA has indicated that approval, or lack of objection, at this point is sufficient for NEPA clearance. Near the end of construction, but before closing the project, a formal Section 6(f) conversion proposal will be submitted to the NPS by CPW. CDOT will prepare the request for CPW with their approval.~~

9.9 Air Quality

Updates to the Final EIS Analysis

Air quality continues to be an important resource for the I-70 East Project. This section discusses updates to the air quality analysis completed in the Final EIS for carbon monoxide and PM_{10}. Transportation conformity air quality analysis is discussed in Section 6.1.

As presented in the Final EIS, emissions inventories for MSATs show declining trends and almost no difference between project alternatives. Through interagency consultation, it was determined that minor changes in the project design since publication of the Final EIS will not impact results of emission inventory analyses for MSATs, criteria pollutants, and greenhouse gases. Results of emissions inventory analysis of total pollutants in the air quality study area remain as presented in the Final EIS.

The air quality analysis procedures for the NEPA comparative analysis build upon the air quality analysis conducted for the 2014 Supplemental Draft EIS and the 2016 Final EIS. Traffic data from the 2040 DRCOG regional travel demand model were used to conduct the analysis. Additional details on the analysis update for the ROD can be found in *Attachment C, Air Quality NEPA Comparison Technical Report*.

The November 2015 updates to the EPA guidance report EPA-420-B-15-090 were formalized since the Final EIS modeling results were published. These updates were followed for the analysis for the Final EIS under the direction of the interagency consultation partners. These procedures were used again for the updates completed for this ROD. Further explanation of the changes to the analysis are detailed within *Attachment C, Air Quality NEPA Comparison Technical Report* and *Air Quality Conformity Technical Report*, which includes information on interagency consultation and decisions.

The following subsections summarize results for the carbon monoxide and PM_{10} NEPA comparative analysis for the alternatives evaluated in the Final EIS. Additional details of the analysis are provided in *Attachment C, Air Quality NEPA Comparison Technical Report*.

Carbon Monoxide Comparative Analysis Results

As with the Final EIS, the Colorado Boulevard interchange was identified as the location to represent the worst traffic conditions on the corridor. For the Final EIS, a sensitivity analysis was performed using the DynusT traffic model to validate the choice of the I-70

interchange at Colorado Boulevard as the worst-case location for the carbon monoxide NEPA comparative analysis. The analysis found that the I-70 interchanges at Quebec Street and Colorado Boulevard are the two worst interchanges in 2035, with the model predicting slightly higher carbon monoxide emissions at the Quebec Street interchange due to higher traffic volumes and longer delays.

While updating the traffic data to the most recent 2040 Focus model released since publication of the Final EIS, the traffic volumes at Colorado Boulevard and Quebec Street were reviewed again. The predicted 2040 traffic Level of Service (LOS) at Colorado Boulevard in the morning (AM) and afternoon (PM) peak hours is LOS D. The same relatively small differences in traffic and congestion between the two intersections exist in the new 2040 model as was reported in the Final EIS. The predicted results from modeling carbon monoxide emissions would vary only by 0.2 parts per million (ppm) to 0.4 ppm, as disclosed in the Final EIS *Air Quality Technical Report*. Given the minimal differences, continued use of the I-70 and Colorado Boulevard interchange as the location for the carbon monoxide analysis is appropriate.

For the update of the carbon monoxide NEPA comparative analysis, the methodology remained primarily the same as the Final EIS. The highest emission factors (2022) were combined with the highest traffic volumes (2040). This method overstates carbon monoxide concentrations, but ensures the maximum potential carbon monoxide concentrations are considered. Other modeling parameters, such as meteorology, were consistent with those used during Final EIS carbon monoxide hot spot analysis.

Exhibit 33 shows the modeled 1-hour and 8-hour carbon monoxide concentrations from CAL3QHC and the resulting total carbon monoxide concentrations for the Preferred Alternative and Central 70 Project for the AM and PM peak periods at I-70 and Colorado Boulevard. Concentrations in the table are shown for the receptors with the highest levels inside the study area for the carbon monoxide analysis. As the numbers indicate, the 8-hour design values resulting from the AM and PM analysis are both well below the 8-hour NAAQS limit of 9.0 ppm. Since the carbon monoxide comparative analysis is a worst-case scenario, it is reasonable to conclude that the carbon monoxide concentrations at any intersection also would be well below the NAAQS limit.

Exhibit 33 Carbon Monoxide Comparative Analysis Maximum Concentrations

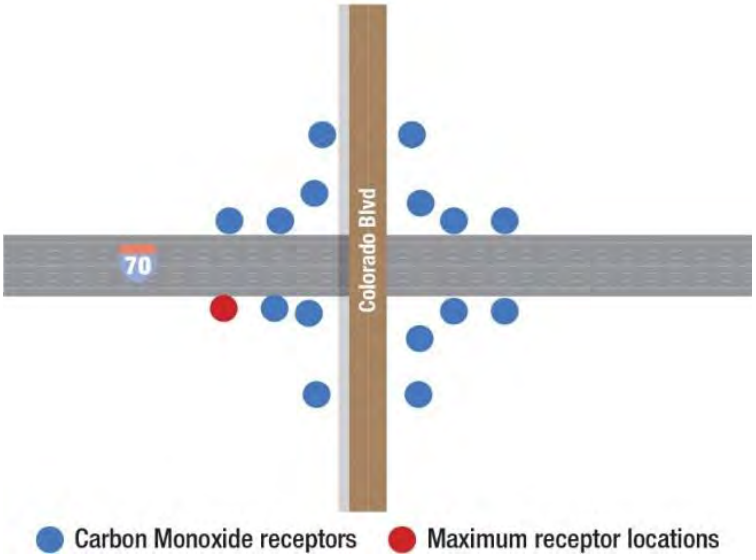
Analysis Time Period	Time of Day	Carbon Monoxide Concentration in parts per million (ppm)		
		Background*	Modeled	Total Background + Modeled
Preferred Alternative (Partial Cover Lowered Alternative with Managed Lanes)				
1-hour	AM	~~6.73~~ 5.5	~~3.61~~ 1.4	~~10.34~~ 6.9
	PM		~~2.53~~ 1.9	~~10.26~~ 7.4
8-hour	AM	~~4.55~~ 3.6	~~3.53~~ 0.9	~~7.08~~ 4.5
	PM		~~2.47~~ 1.2	~~7.02~~ 4.8

Exhibit 33 Carbon Monoxide Comparative Analysis Maximum Concentrations

Analysis Time Period	Time of Day	Carbon Monoxide Concentration in parts per million (ppm)		
		Background*	Modeled	Total Background + Modeled
Central 70 Project (Phase 1 of the Preferred Alternative)				
1-hour	AM	5.5	1.4	6.9
	PM		1.9	7.4
8-hour	AM	3.6	0.9	4.5
	PM		1.3	4.9

The receptor with the maximum carbon monoxide concentrations included in **Exhibit 33** are shown in **Exhibit 34**. The maximum receptor for both the AM and PM periods is located in the southwestern quadrant of the Colorado Boulevard interchange. This location differs from results presented in the Final EIS, which showed the maximum receptor in the northwestern quadrant in the AM period. Modeled concentrations make up such a small percentage of the total carbon monoxide concentrations that small variations in traffic input are exaggerated in the comparisons between modeling estimations for each receptor. This exaggeration would explain differences between the Final EIS and ROD modeling results.

Exhibit 34 Maximum Concentration Receptor Location for Carbon Monoxide



PM_{10} Comparative Analysis Results

NEPA comparative analysis was conducted at locations that are expected to have the highest concentrations of PM_{10} across the study area. Considerations for locations with the highest concentrations include areas with the highest traffic volumes and congestion,

nearby land uses with public access, high numbers of diesel vehicles, and other factors. The locations analyzed for NEPA comparative analysis for PM_{10} are the interchange of I-70 and I-25 and the interchange of I-70 and I-225. **Exhibit 35** contains the comparative analysis results at the locations for the alternatives evaluated in the Final EIS.

Exhibit 35 PM_{10} Comparative Analysis Maximum Concentrations

Alternative	General-Purpose Lanes Option (µg/m³)			Managed Lanes Option (µg/m³)		
	Modeled	Project + Background[1]	Design Value	Modeled	Project + Background[1]	Design Value
I-70 at I-25						
No-Action Alternative	~~62~~ 40.396	~~151~~ 153.396	150	N/A	N/A	N/A
Revised Viaduct Alternative	~~62~~ 41.554	~~151~~ 154.554	150	~~64~~ 41.073	~~153~~ 154.073	150
Partial Cover Lowered Alternative	~~63~~ 41.703	~~152~~ 154.703	150	~~57~~ 41.196	~~146~~ 154.196	150
Central 70 (Phase 1)	N/A	N/A	N/A	~~61~~ 41.136	~~150~~ 154.136	150
I-70 at I-225						
No-Action Alternative	~~26~~ 28.732	~~115~~ 141.732	~~120~~ 140	N/A	N/A	N/A
Revised Viaduct Alternative	~~35~~ 30.564	~~124~~ 143.564	~~120~~ 140	~~41~~ 32.968	~~130~~ 144.968	~~130~~ 140
Partial Cover Lowered Alternative	~~46~~ 31.085	~~135~~ 144.085	140	~~40~~ 32.285	~~129~~ 145.285	~~130~~ 150
Central 70 (Phase 1)	N/A	N/A	N/A	~~41~~ 32.220	~~130~~ 145.220	~~130~~ 150

Note: Design values for all alternatives at the I-25 and I-225 hot spot locations are less than the 24-hour PM_{10} NAAQS of 150 µg/m³. To develop these estimates, the 24-hour PM_{10} design value is rounded per guidance to the nearest 10 µg/m³. For example, 155.000 rounds to 160, and 154.999 rounds to 150.
1. A background concentration of 113 µg/m³ was used to estimate total 24-hour concentrations

Similarly to the Final EIS, PM_{10} concentration levels vary throughout the I-25 and I-225 PM_{10} comparative analysis areas depending on the alternative modeled. **Exhibit 36** and **Exhibit 37** show receptor locations and maximum receptor values for the I-70/I-25 and I-70/I-225 PM_{10} comparative areas for all alternatives analyzed.

As with results presented in the Final EIS, the design values presented in **Exhibit 36** simulate worst-case conditions because they represent the highest PM_{10} concentrations at the highest traffic volume locations in the corridor. Therefore, it can be assumed that the PM_{10} concentrations would be lower than these values at every possible receptor location throughout the corridor, including all schools, parks, open spaces, and other places.

Exhibit 36 Maximum Concentration Receptor Locations for PM_{10} at I-70/ I-25

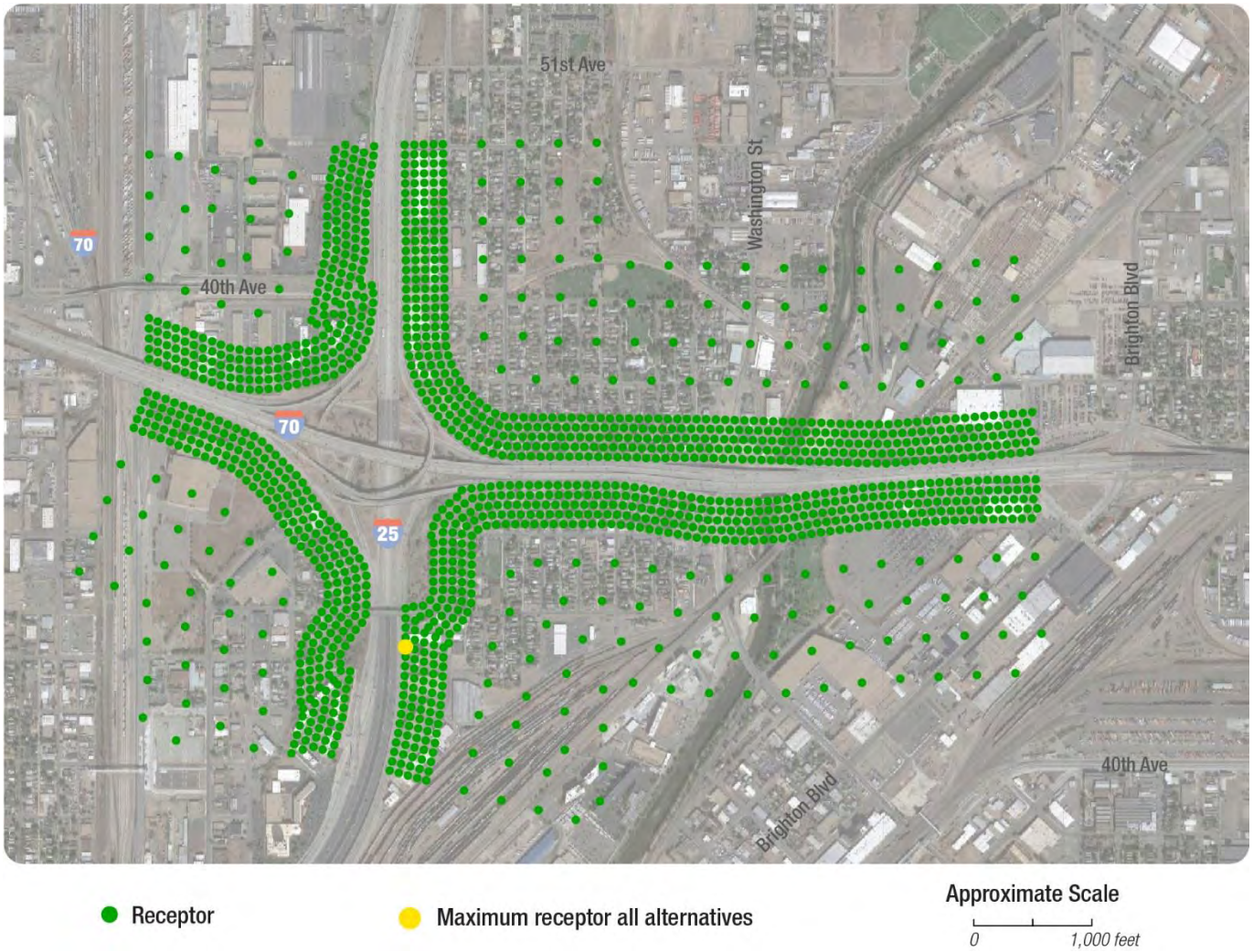
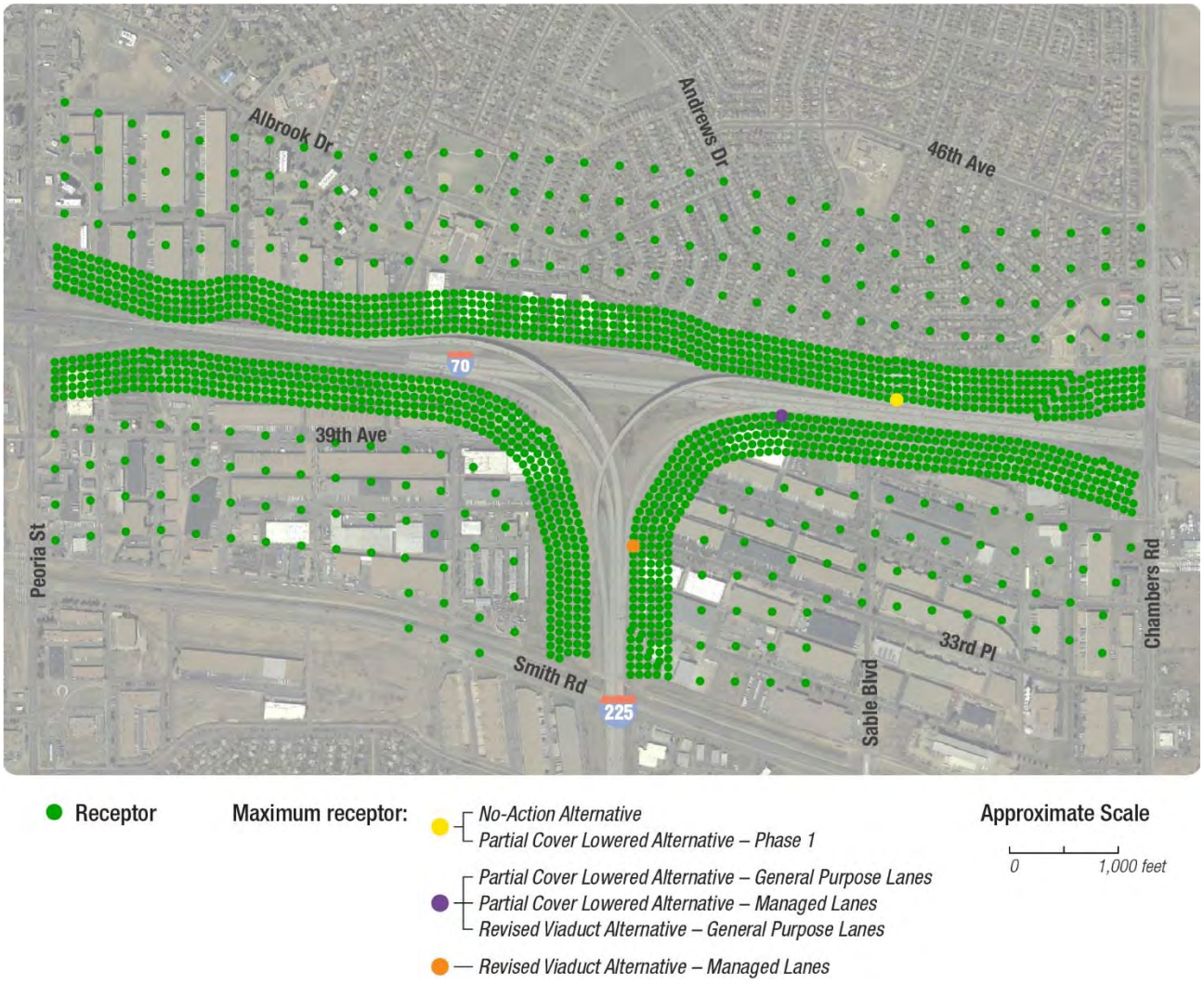


Exhibit 37 Maximum Concentration Receptor Locations for PM_{10} at I-70/ I-225



Air Quality Analysis Summary

The air quality analysis for PM_{10} and carbon monoxide have been updated since the publication of the Final EIS to reflect minor differences in the roadway configuration of the Preferred Alternative, and the corresponding minor traffic volume variations. The conclusions of this analysis have not changed:

- The Preferred Alternative (Partial Cover Lowered Alternative with Managed Lanes) has been shown to meet all of the EPA-required NAAQS.
- There is not a substantial difference between alternatives in the declining trends for MSAT emissions in the project study area. MSAT emissions decline by 88.6 percent in the project area if the project is built, and by 88.9 percent if the project is not built.

- Traffic volume and traffic speed are the primary drivers of project-level air quality impacts.
- Road dust emissions are the primary indicators of future particulate matter emissions.

Changes to the Final EIS Text

The discussions under Section 9.9 supersede information for the carbon monoxide and PM_{10} presented in subsection 5.10.6 of the Final EIS. All other discussions under *Section 5.10, Air Quality*, in the Final EIS remain unchanged.

Additional analysis has been performed as part of the Transportation Conformity process and is available in Section 6.1 of this document.

9.10 Noise

Updates to the Final EIS Analysis

Since the completion of the analysis for the Final EIS, CDOT's *Colorado Noise Analysis and Abatement Guidelines* were updated (November 2015). This update is in the form of a memo titled *CDOT Noise Analysis and Abatement Guidelines Update: Long-Term Noise Measurements*. This update does not change the noise analysis performed for the Final EIS.

However, the minor changes in the project design since publication of the Final EIS prompted a new noise analysis to be performed on the Partial Cover Lowered Alternative to identify any potential changes in the impacts and mitigations. The methodology for updating the noise analysis remains the same as the methodology used in the Final EIS. Only neighborhoods and alternatives that were affected by changes in the design were re-analyzed. The analysis results are available in detail in *Attachment C, Updates to Noise Technical Report*. All mitigation commitments from the Final EIS document remain the same.

The updated impacts and mitigation discussions are included in the following subsections by neighborhood.

Globeville

The Globeville Neighborhood is located north and south of I-70 and spans between I-25 and Washington Street. Of the 232 receptors evaluated in Globeville, 38 (14 north of I-70 and 24 south of I-70)—which is 18 modeled locations—would meet or exceed their respective NAC thresholds, although none would experience substantial increases (10 dBA or more above existing levels) in noise as shown in **Exhibit 38**. Noise levels under the General-Purpose Lanes Option would range from 60 dBA (A-weighted decibel level) to 70 dBA north of I-70, and increase by as much as 3 dBA over existing noise levels. Noise levels south of I-70 would range from 61 dBA to 68 dBA, and increase by 1 dBA to 4 dBA over the existing noise levels.

A mitigation analysis was done for the General-Purpose Lanes Option north of I-70 for the purpose of determining if higher noise walls would benefit the neighborhood, which can be found in *Attachment C, Updates to Noise Technical Report*. However, higher noise walls were found to be neither feasible nor reasonable. For the neighborhood south of I-70, higher noise walls were determined to be feasible but not reasonable. Therefore, existing noise walls will remain in place for the Globeville Neighborhood north and south of I-70.

For the Managed Lanes Option, noise levels north of I-70 would range from 60 dBA to 70 dBA, and would increase by up to 3 dBA higher than existing noise levels. South of I-70, noise levels range from 61 dBA to 68 dBA, and would increase by 1 dBA to 3 dBA over existing noise levels. Of the 232 receptors in Globeville, 32 (13 north of I-70 and 19 south of I-70, 15 modeled locations, see **Exhibit 39**) are anticipated to meet or exceed their respective NAC thresholds. None of the Globeville receptors experience a substantial (10 dBA or greater) increase over existing noise levels for the Managed Lanes Option.

The mitigation analysis for the Managed Lanes Option determined that higher noise walls are neither feasible nor reasonable for the neighborhood north and south of I-70 (available in *Attachment C, Updates to Noise Technical Report).* Therefore, existing noise walls will remain in place for the Globeville neighborhood.

Exhibit 38 Globeville Noise Impacts: General-Purpose Lanes Option

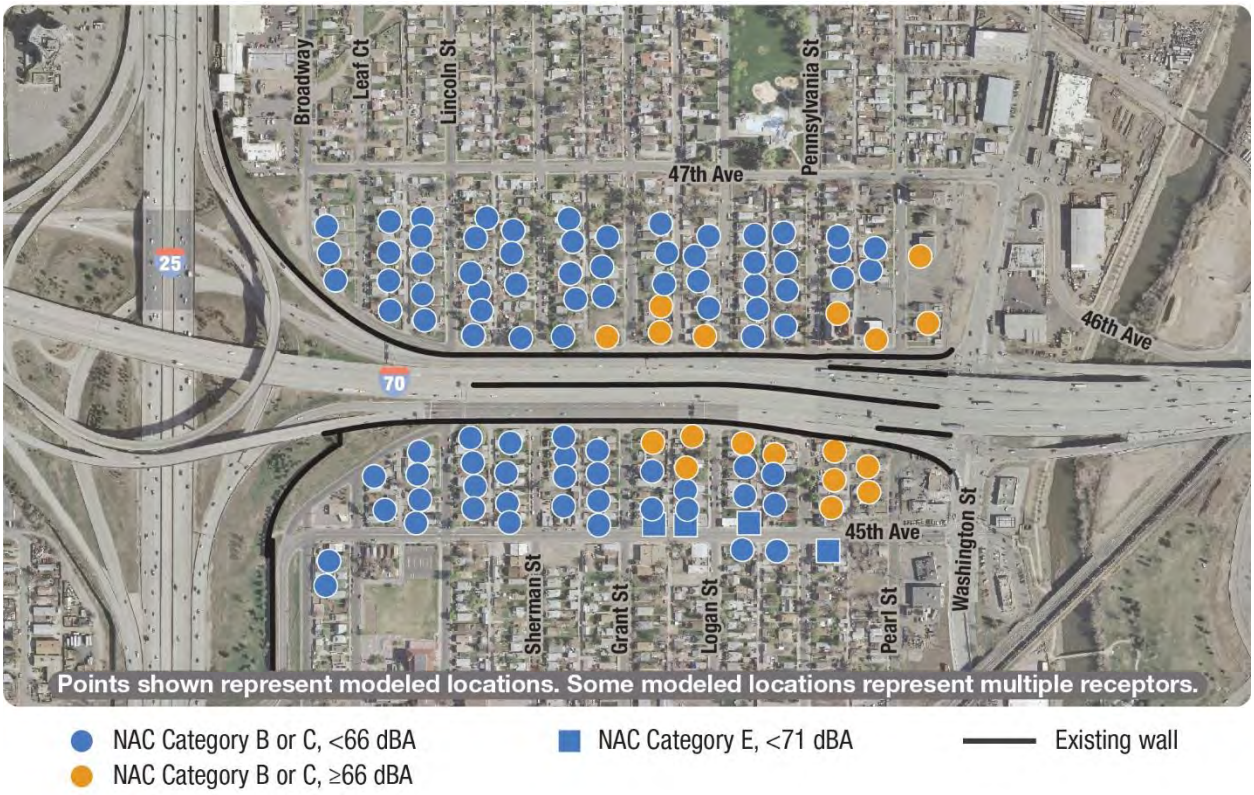
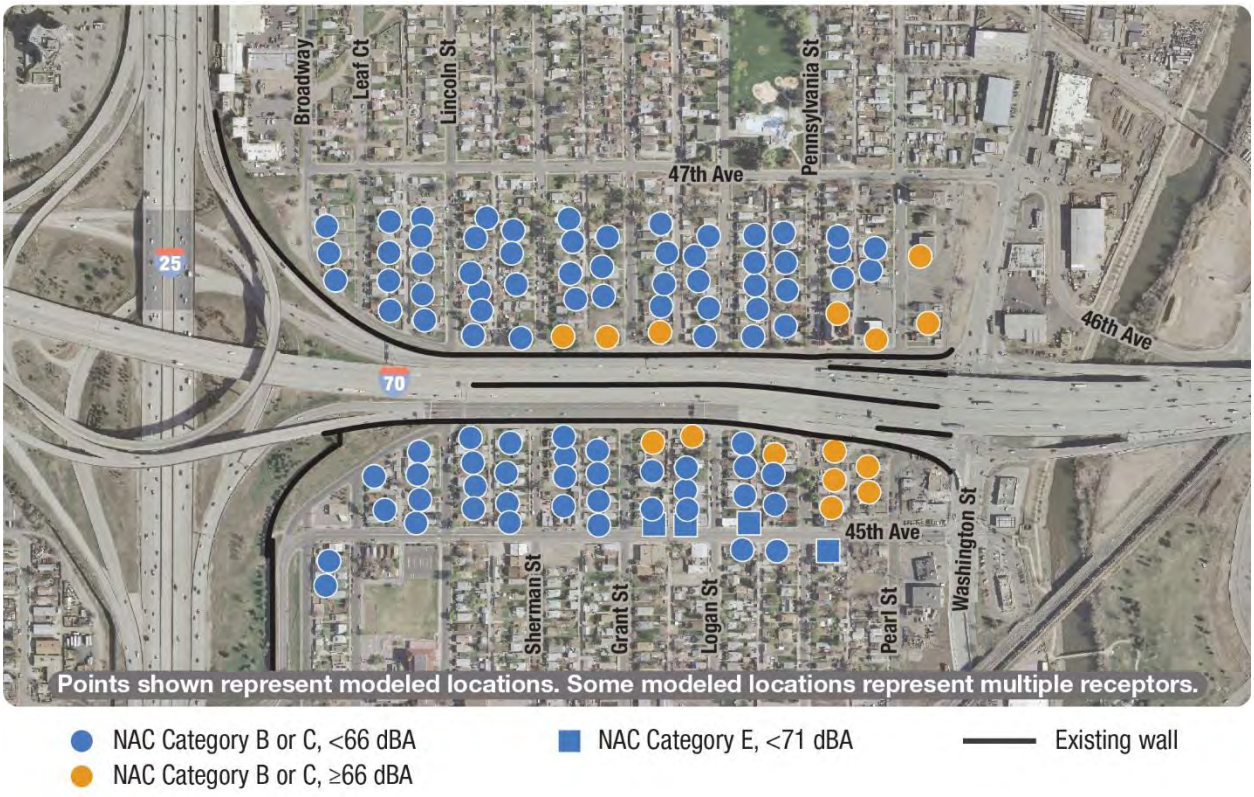


Exhibit 39 Globeville Noise Impacts: Managed Lanes Option



Elyria and Swansea

The Elyria and Swansea Neighborhood is located between Brighton Boulevard and Vasquez Boulevard. For the noise analysis, this neighborhood has been divided into sections: Elyria and Swansea. Elyria includes the western part of the neighborhood from Brighton Boulevard to York Street and Swansea includes the eastern part of the neighborhood from York Street to Steele Street/Vasquez Boulevard.

Of the 129 receptors in Elyria, 63 receptors (27 modeled locations) are anticipated to meet or exceed their respective NAC thresholds under the Partial Cover Lowered Alternative (see **Exhibit 40**). Of these 63 impacted receptors, 15 also would experience a substantial increase (10 dBA or more) in noise. The noise levels in Elyria would range from 60 dBA to 76 dBA, measuring from 3 dBA lower to 17 dBA greater than the existing noise levels.

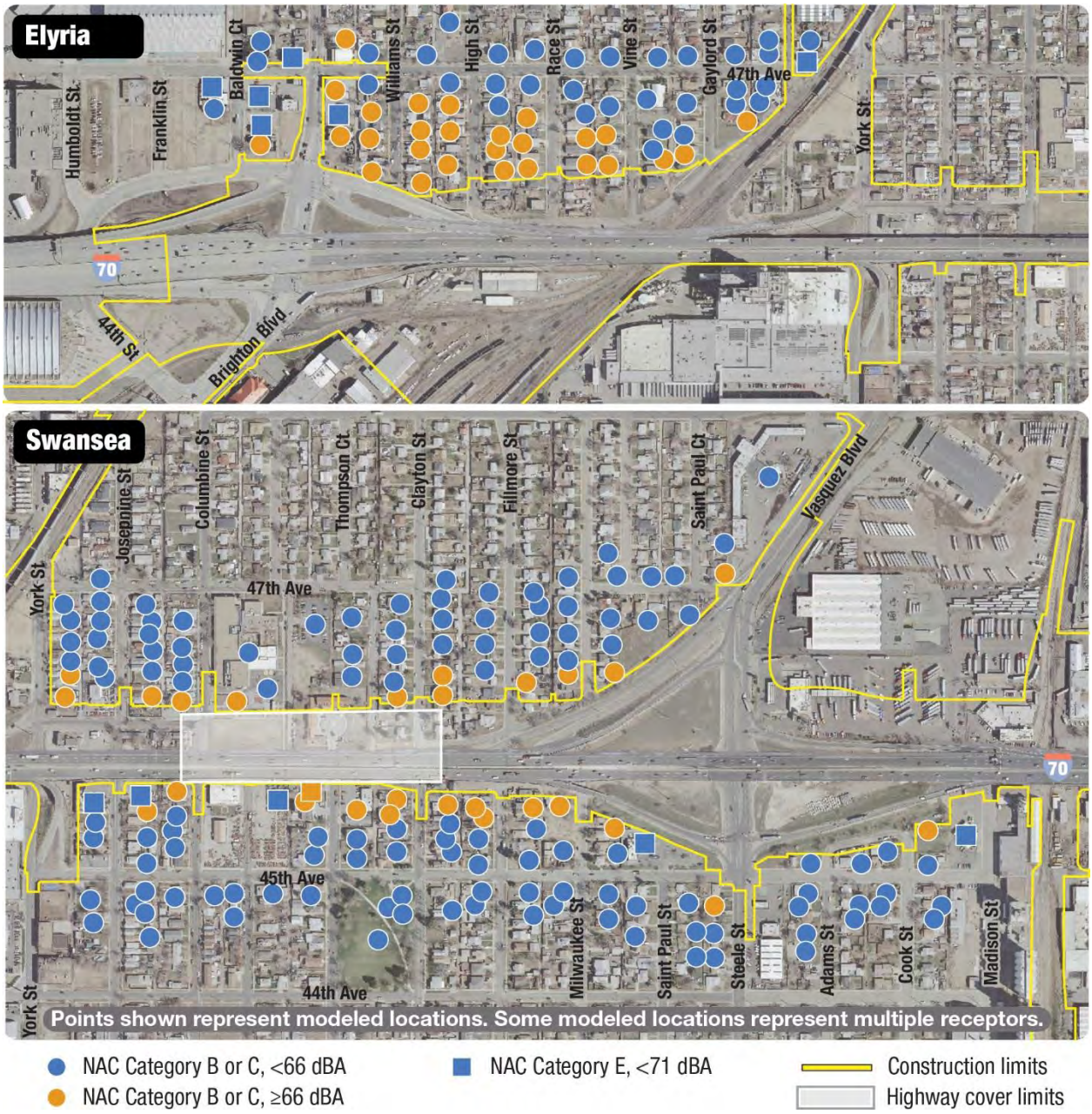
A mitigation analysis for Elyria (available in *Attachment C, Updates to Noise Technical Report)* determined that 12-foot to 20-foot noise walls were found to be both feasible and reasonable. A 16-foot wall height is recommended based on all analyzed feasible and reasonable potential noise wall heights and the average number of benefitted receptors.

In Swansea, of the 287 receptors, 50 receptors would meet or exceed their respective NAC thresholds under the Partial Cover Lowered Alternative (see **Exhibit 40**). None of the 50 impacted receptors would experience a substantial noise increase (10 dBA or more). The

noise levels for the Partial Cover Lowered Alternative range from 52 dBA to 74 dBA, measuring from 6 dBA lower to 8 dBA greater than existing noise levels.

A mitigation analysis for the Swansea Neighborhood north of I-70 determined that noise walls were found to be neither feasible nor reasonable (available in *Attachment C, Updates to Noise Technical Report).* For the neighborhood south of I-70, noise walls were determined to be feasible, but not reasonable. Therefore, no noise wall mitigation is recommended for the Swansea Neighborhood north or south of I-70.

Exhibit 40 Elyria and Swansea Noise Impacts: Partial Cover Lowered Alternative



Stapleton

The commercial area near Central Park Boulevard is known as Northfield Stapleton. None of the receptors in this area meet or exceed the NAC threshold under the General-Purpose Lanes Option or with the Managed Lanes Option (see **Exhibit 41).** The noise levels at the modeled receptors for the General-Purpose Lanes Option would range from 61 dBA to 69 dBA, which is 2 dBA to 6 dBA greater than existing noise levels. The noise levels for the Managed Lanes Option would range from 61 dBA to 68 dBA, which is 2 dBA to 5 dBA greater than existing noise levels. For both options, none of the six receptors meet or exceed their respective NAC thresholds or experience a substantial increase (10 dBA or more). For this reason, mitigation consideration was not required.

Exhibit 41 Stapleton Noise Impacts: Managed Lanes Option

Note: Exhibit shows construction limits for the Managed Lanes Option, modeled locations also reflect the General-Purpose Lanes Option.

Peoria Street

The Peoria Street area includes hotel receptors north of I-70 near Peoria Street. For the General-Purpose Lanes Option, noise levels would range from 62 dBA to 71 dBA, which is 1

dBA to 4 dBA greater than existing noise levels (see **Exhibit 42**). For the Managed Lanes Option, noise levels would range from 62 dBA to 70 dBA, which would equal existing noise levels or increase them by as much as 4 dBA (see **Exhibit 43**). Of the 100 receptors (14 modeled locations), one receptor would meet or exceed the NAC threshold in the General-Purpose Lanes Option, and no receptors would meet or exceed their NAC threshold in the Managed Lanes Option. In both options, none of the 100 receptors would experience a substantial increase (10 dBA or more) in noise levels.

For this reason, mitigation consideration was not required for the Managed Lanes Option. For the General-Purpose Lanes Option, eight-foot to 20-foot noise walls were analyzed and none of the options were found to be feasible or reasonable. Therefore, no noise wall mitigation is recommended for the Peoria Street impacts.

Exhibit 42 Peoria Street Area Noise Impacts: General-Purpose Lanes Option

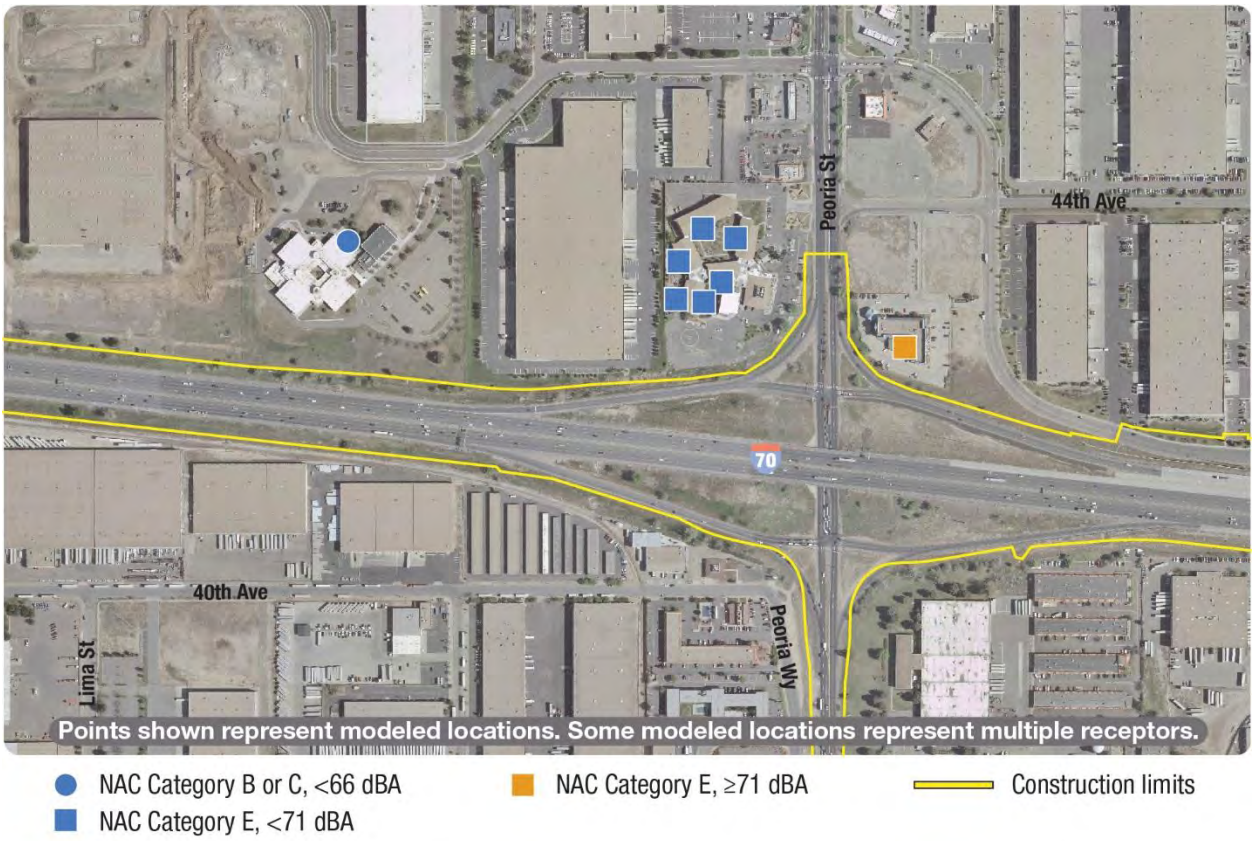
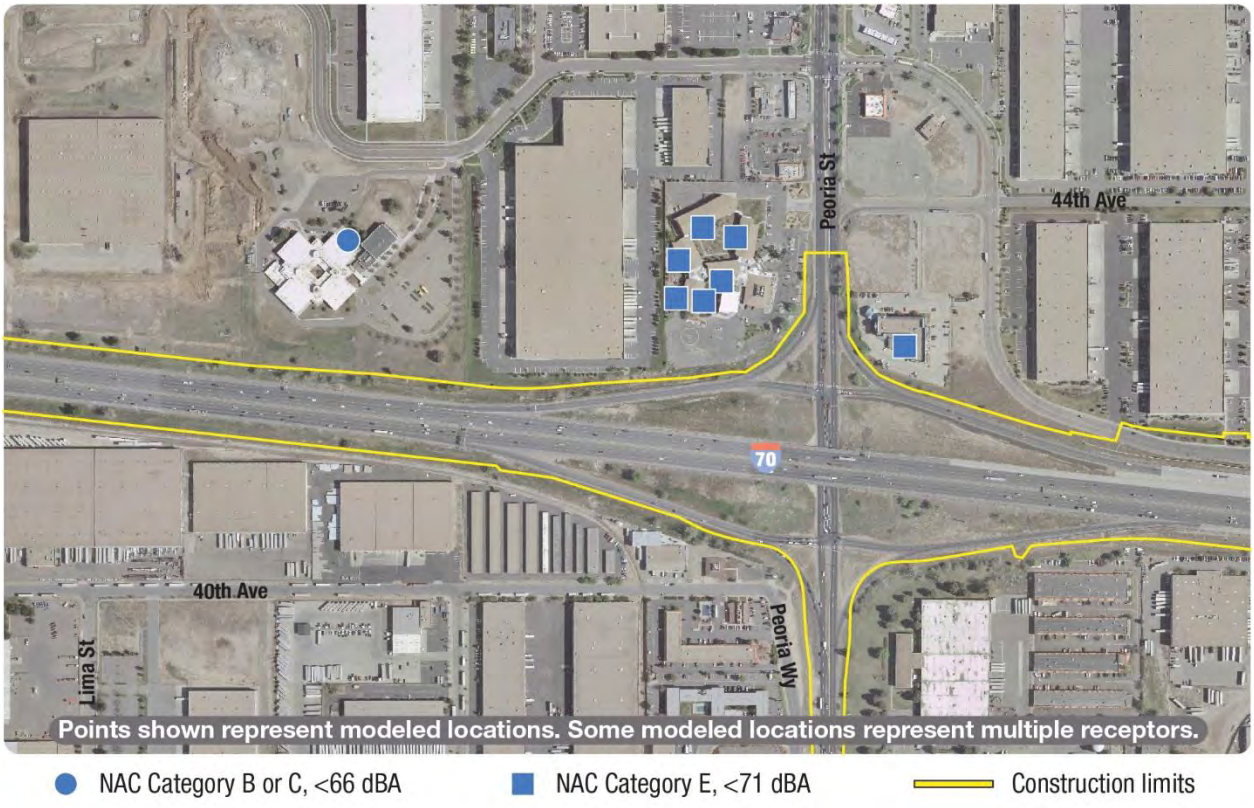


Exhibit 43 Peoria Street Area Noise Impacts: Managed Lanes Option



Montbello

Located northeast of the I-70/I-225 interchange and just west of Chambers Road is the Montbello Neighborhood. For the General-Purpose Lanes Option, 32 (12 modeled locations) of the 112 receptors would meet or exceed their NAC threshold, but none of the 32 impacted receptors would experience a substantial noise increase (10 dBA or more) as shown in **Exhibit 44**). Noise levels would range from 59 dBA to 69 dBA, which is 1 dBA to 5 dBA greater than existing noise levels. The mitigation analysis for the General-Purpose Lanes Option was performed for walls ranging from eight feet to 20 feet high and it was determined that walls 16 feet to 20 feet were feasible, but not reasonable (available in *Attachment C, Updates to Noise Technical Report).* Therefore, no noise wall mitigation is recommended.

Under the Managed Lanes Option, 32 (13 modeled locations) of the 112 receptors would meet or exceed their NAC threshold, and none of the 32 impacted receptors would experience a substantial noise increase (10 dBA or more) as shown in **Exhibit 45**). Noise levels would range from 59 dBA to 69 dBA, which is 1 dBA to 6 dBA greater than existing noise levels. The mitigation analysis for the Managed Lanes Option was performed and it was determined that walls 14 feet to 20 feet high were feasible but not reasonable (available in *Attachment C, Updates to Noise Technical Report).* Therefore, no noise wall mitigation is recommended.

Exhibit 44 Montbello Noise Impacts: General-Purpose Lanes Option

NAC Category B or C, <66 dBA
NAC Category B or C, ≥66 dBA
Existing wall
Construction limits

Exhibit 45 Montbello Noise Impacts: Managed Lanes Option

NAC Category B or C, <66 dBA
NAC Category B or C, ≥66 dBA
Existing wall
Construction limits

Aurora

This noise analysis includes a portion of Aurora which is the residential areas east of Chambers Road and South of I-70, For the General-Purpose Lanes Option, noise levels would range from 62 dBA to 70 dBA, which is 1 dBA lower to 2 dBA higher than existing conditions. Three of the seven receptors would meet or exceed their respective NAC thresholds, but none would experience a substantial noise increase (10 dBA or more) as shown in **Exhibit 46**). The mitigation analysis performed for the General-Purpose Lanes Option was done for eight-foot to 20-foot walls and it was determined that none of the options were feasible or reasonable (available in *Attachment C, Updates to Noise Technical Report).* Therefore, no noise wall mitigation is recommended.

For the Managed Lanes Option, noise levels would range from 61 dBA to 70 dBA, which is 2 dBA lower than existing conditions (see **Exhibit 47**). Three of the receptors would meet or exceed their respective NAC thresholds, but none would experience a substantial noise increase (10 dBA or more). The mitigation analysis performed for the Managed Lanes Option determined that walls ranging from 10 feet to 20 feet high were feasible but did not meet reasonability requirements (available in *Attachment C, Updates to Noise Technical Report).* Therefore, no noise wall mitigation is recommended.

Exhibit 46 Aurora Noise Impacts: General-Purpose Lanes Option

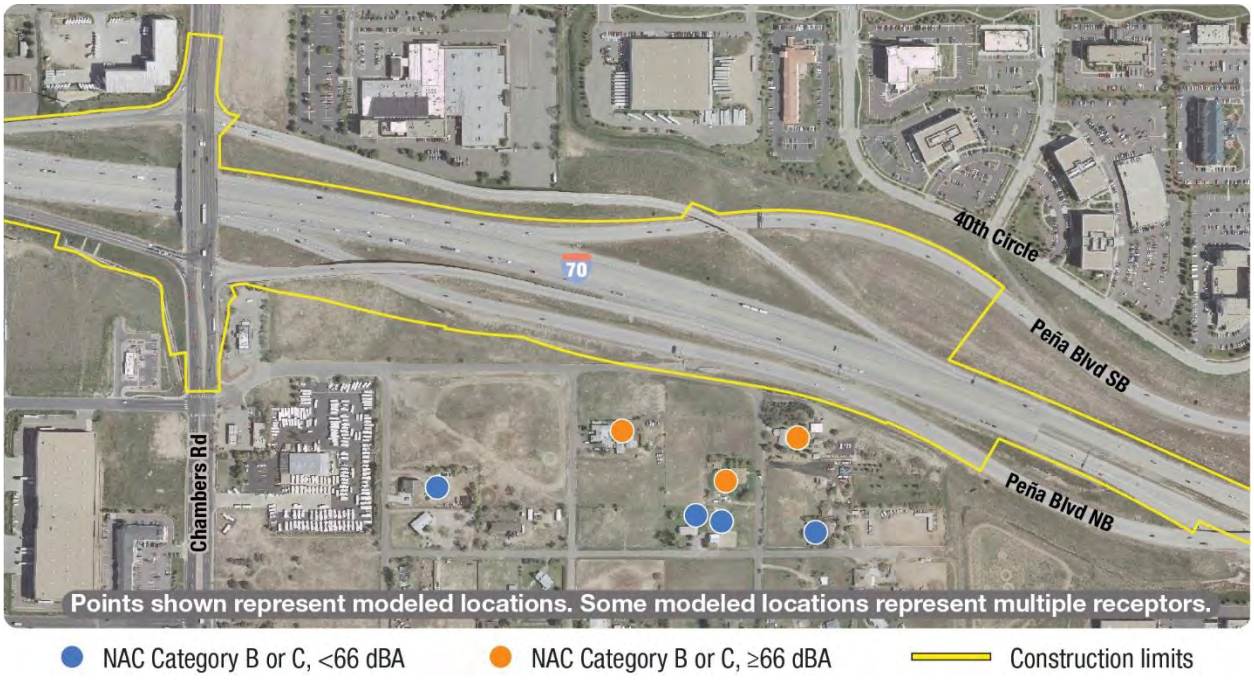
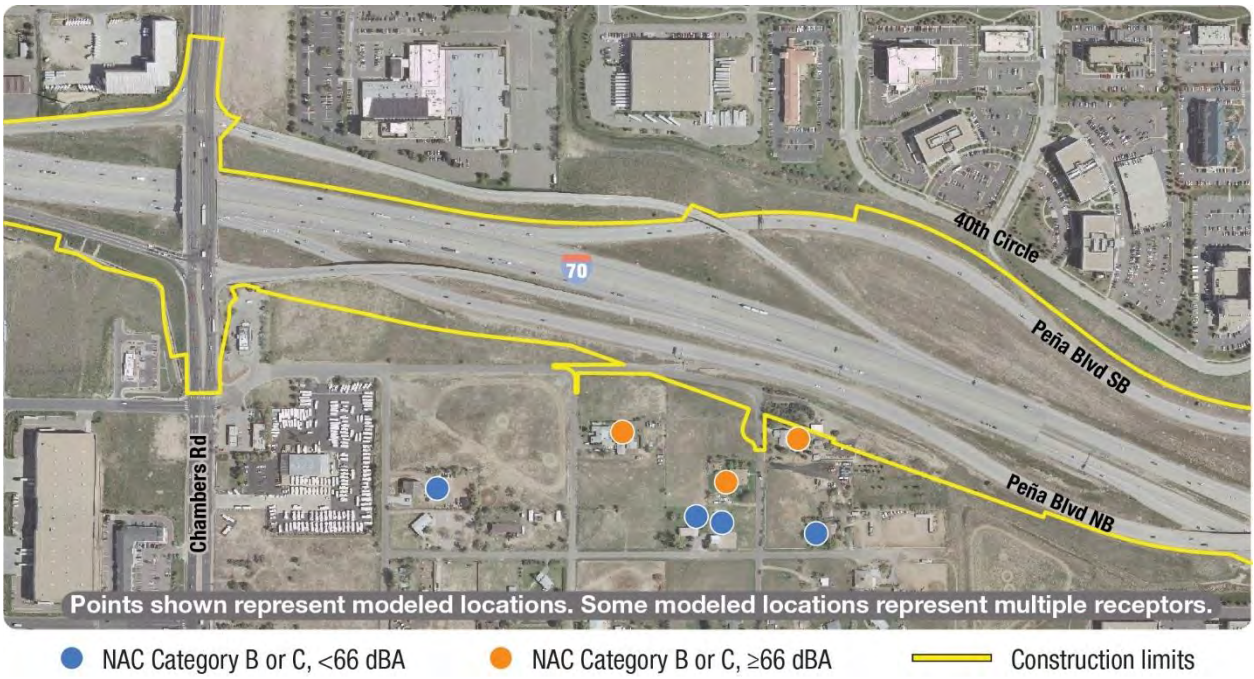


Exhibit 47 Aurora Noise Impacts: Managed Lanes Option



The noise analysis for each of the neighborhoods for the Partial Cover Lowered Alternative and each Operational Option is summarized in **Exhibit 48**. This table summarizes data presented in the previous sections.

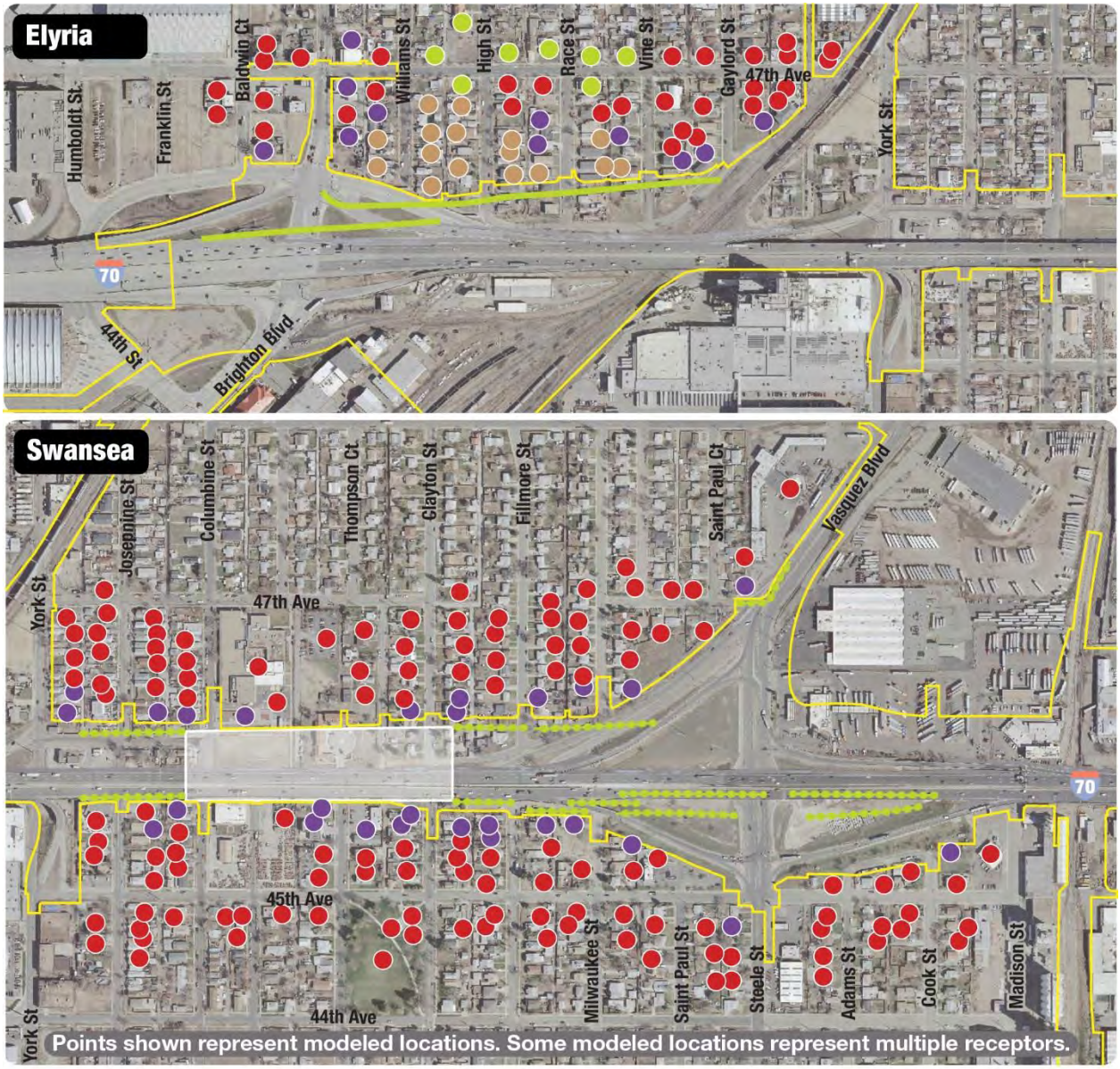
Exhibit 48 Summary of Updated Noise Analysis by Neighborhood for Partial Cover Lowered Alternative

Neighborhood	Location	Alternative/ Option	Number of Noise Receptors	Number of Noise Receptors that meet or Exceed NAC Threshold	Number of Noise Receptors with a Substantial Noise Increase (10 dBA or more)
Globeville	North of I-70	General-Purpose Lanes Option	130	~~13~~ 14	0
	South of I-70		102	~~11~~ 24	0
	Total		**232**	**~~24~~ 38**	**0**
	North of I-70	Managed Lanes Option	130	~~12~~ 13	0
	South of I-70		102	~~6~~ 19	0
	Total		**232**	**~~18~~ 32**	**0**
Elyria and Swansea	Elyria	Partial Cover Lowered Alternative	129	~~55~~ 63	~~11~~ 15
	Swansea North of I-70		123	21	0
	Swansea South of I-70		164	29	0
	Total		**416**	**~~105~~ 113**	**15**
Stapleton		General-Purpose Lanes Option	6	0	0
		Managed Lanes Option	6	0	0
Peoria		General-Purpose Lanes Option	100	1	0
		Managed Lanes Option	100	0	0
Montbello		General-Purpose Lanes Option	112	~~34~~ 32	0
		Managed Lanes Option	112	~~29~~ 32	0
Aurora		General-Purpose Lanes Option	7	3	0
		Managed Lanes Option	7	3	0

Mitigation

The mitigation measures for the noise impacts have not changed since the publication of the Final EIS. The mitigation analysis (available in *Attachment C, Updates to Noise Technical Report)* for Elyria determined that 12-foot to 20-foot walls were found to be both feasible and reasonable. A 16-foot wall height is recommended based on all analyzed feasible and reasonable potential noise wall heights and the average number of benefitted receptors (see **Exhibit 49**). The length of the wall would be approximately 2,300 feet. The wall would effectively decrease noise by 7 dBA or more for 27 receptors. The wall also would benefit an additional 51 receptors by decreasing noise by 5 dBA or more.

Exhibit 49 Elyria and Swansea Noise Wall Locations



Changes to the Final EIS Text

The following discussions include clarifications on *Section 5.12, Noise,* of the Final EIS:

The discussions under Section 9.10 supersede information presented in subsections 5.12.4 through 5.12.8 of the Final EIS. All other analysis under *Section 5.12, Noise*, in the Final EIS remain unchanged.

Global change in Section 5.12 of the Final EIS:

The Final EIS text is updated to use "meet or exceed" the noise abatement criteria, as noise levels that meet the NAC also are considered to be impacts, not just those that are greater than the NAC.

9.11 Biological Resources

Updates to the Final EIS Analysis

Changes to the construction limits have led to minor changes in impacts to biological resources along the corridor. The revised construction limits extend farther south along the South Platte River to better reinforce the existing degraded bank. The riparian areas along the South Platte River were remapped to include the new areas, and impacts were calculated based on the revised construction limits.

All of the impacts to South Platte River riparian areas in Globeville Landing Park are expected to be short-term impacts since any trees removed during construction will be replaced per Denver's tree replacement policy.

In addition to the changes in impacts to the South Platte River, permanent impacts to biological resources since the Final EIS have increased for the Build Alternatives due to the construction limits expanding. The majority of the increase is east of Quebec Street, where the construction limits were pushed beyond the physically impacted area to the existing right-of-way boundary to represent a worst case for potential impacts. **Exhibit 50** illustrates the updated impacts to the biological resources and **Exhibit 51** shows the updated impacts to riparian areas for each alternative.

Exhibit 50 Impacts to Biological Resources

Alternative	Mule Deer Limited-Use Area (acres)	Mule Deer Resident Population Area (acres)	White-Tailed Deer Overall Range (acres)	Bald Eagle Winter Range (acres)	Total Impacts to Wildlife Habitat (acres)
No-Action Alternative	3.5	—	—	—	3.5
Build Alternatives, General-Purpose Lanes Option					
Revised Viaduct Alternative	3.5	~~110.9~~ 134.1	~~117.7~~ 273.7	~~21.8~~ 27.6	~~313.9~~ 438.9
Partial Cover Lowered Alternative	~~6.6~~ 12.1	~~110.9~~ 134.1	~~117.7~~ 273.7	~~21.8~~ 27.6	~~317.0~~ 447.5
Build Alternatives, Managed Lanes Option					
Revised Viaduct Alternative	3.5	~~117.0~~ 136.6	~~222.9~~ 355.4	~~21.8~~ 27.6	~~365.2~~ 523.1
Partial Cover Lowered Alternative	~~6.6~~ 12.1	~~117.0~~ 136.6	~~222.9~~ 355.4	~~21.8~~ 27.6	~~368.3~~ 531.7

Note: Impacts were calculated based on conceptual design and are subject to change, total impacts may not add due to rounding. Direct mule deer limited-use area habitat impacts are due to the construction of the drainage to the South Platte River. Total impact calculations do not account for overlapping wildlife areas.

Source: CPW 2014

Exhibit 51 Impacts to Riparian Areas

Alternative	Riparian Impacts (acres)	
	Permanent	Temporary
No-Action Alternative	~~0.014~~ 0.002	~~0.011~~ 0.012
Build Alternatives, General-Purpose Lanes Option		
Revised Viaduct Alternative	~~0.977~~ 1.439	~~0.222~~ 0.149
Partial Cover Lowered Alternative	~~1.025~~ 1.439	~~0.234~~ 0.895
Build Alternatives, Managed Lanes Option		
Revised Viaduct Alternative	~~1.249~~ 1.639	~~0.241~~ 0.166
Partial Cover Lowered Alternative	~~1.298~~ 1.639	~~0.253~~ 0.913

Note: Impacts were calculated based on conceptual design and are subject to change, total impacts may not add due to rounding

Changes to the Final EIS Text

The following discussions include clarifications on *Section 5.13, Biological Resources,* of the Final EIS:

Exhibit 50 and **Exhibit 51** replace Exhibits 5.13-7 and 5.13-8 in the Final EIS.

Updates to biological resources mitigation measures:

The following mitigation commitment has been added to the biological resources mitigation measures with regard to Bald and Golden Eagles:

- Eagle nest surveys will be conducted during the appropriate seasons prior to construction beginning near the winter range and known nest sites, then annually between January 1 and April 31 for the remainder of construction, in the event that a Bald and Golden Eagle Protection Act permit is needed.

Global change in Section 5.13 of the Final EIS:

The text discussion and exhibits regarding acreage of impacts are updated to reflect changes discussed in the subsection above.

9.12 Floodplains and Drainage/Hydrology

Updates to the Final EIS Analysis

As part of the updates to the project's design, an additional storm drain is proposed to the east of Colorado Boulevard along Smith Road for the Partial Cover Lowered Alternative. The purpose of this storm drain is to cut off flows in the existing drain and convey the flows to the north into the proposed detention pond designed in the southeast quadrant of the Colorado Boulevard and I-70 interchange. This storm drain crosses under the UPRR and RTD commuter rail tracks.

As stated in the comments received from Denver on the Final EIS, the Partial Cover Lowered Alternative's south offsite drainage outfall shown in the Final EIS would result in a conflict with the Denver GLO. Subsequently, the Partial Cover Lowered Alternative's offsite drainage system was redesigned to convey some of the offsite flows into the box culvert being built as part of Denver's Brighton Boulevard Project and the rest flows through a pipe that connects into the GLO to avoid disturbing Globeville Landing Park multiple times. The Partial Cover Lowered Alternative's offsite drainage is designed to capture and convey all of the anticipated offsite flows before they reach the lowered section of the highway to protect the lowered section from flooding. This conflict did not change the northern outfall that is designed for onsite flows, which will capture and convey flows from the highway itself and is added protection against flooding in the lowered portion. **Exhibit 52** shows the revised offsite drainage outfall for the Partial Cover Lowered Alternative.

Exhibit 52 Partial Cover Lowered Alternative—South Offsite Drainage Outfall

Changes to the Final EIS Text

The following discussions include clarifications on *Section 5.14, Floodplains and Drainage/ Hydrology*, of the Final EIS:

Page 5.14-2—text below is added before the last paragraph and now includes:

Executive Order 13960, "Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input" (Obama, 2015) provides several amendments to Executive Order 11988 to further improve the existing floodplain

management strategy in accordance with the Climate Action Plan. The Federal Flood Risk Management Standard acts as a flexible framework involving stakeholder input and assessments. New requirements include:

- Increase resilience against flooding and help preserve the natural values of floodplains
- Expand management from the current base flood level to a higher vertical elevation and corresponding horizontal floodplain to address current and future flood risk
- Be consistent with the Federal Flood Risk Management Standard

Page 5.14-3—first paragraph now reads:

Both Denver and Aurora have specific regulations and/or ordinances related to the proper management of floodplains. Denver's regulations are presented in the *Storm Drainage Design and Technical Criteria Manual* (Denver Wastewater Management, ~~2006~~ revised 2013) and a Floodplain Ordinance in the Revised Municipal Code. The general purpose of Denver's floodplain regulations includes:

Page 5.14-6—Second paragraph and Exhibit 5.14-3 now read:

Additional analysis of the Montclair Basin and Park Hill Basin provided detailed information about the surface overflows impacting I-70. Because of the complexity of the project, local interest in the potential ponding areas, the fact that multiple projects would be impacted by the ponding areas, and the need for additional analysis of existing conditions, a Multi-Agency Technical Team (MATT) was developed. This MATT included CDOT, Denver, RTD, Urban Drainage and Flood Control District (UDFCD), and the National Western Complex staff. Analysis of the existing ponding areas was developed through the MATT for use in this EIS and with future project planning by others. The I-70 Partial Cover Lowered Alternative Drainage Multi-Agency Technical Team Memo, dated August 1, 2014, provides peak discharges at I-70, which also are provided in **Exhibit 5.14-3**.

Exhibit 53, below replaces Exhibit 5.14-3 in the Final EIS (changes due to an error in the numbers originally reported).

Exhibit 53 Annual Chance Peak Discharge

Location	1-Percent Annual Chance Peak Discharge (cfs)
I-70 at Race Street	~~2,649~~2,852
I-70 at York Street	1,190
I-70 at Steele Street	~~1,120~~1,131
I-70 at Colorado Boulevard	~~1,995~~2,176

Page 5.14-7—Fourth paragraph now reads:

The drainage system included with the Partial Cover Lowered Alternative will capture and convey offsite flows between Brighton Boulevard and Dahlia Street that currently drain north under the existing I-70 viaduct. The capture and conveyance of this offsite flow ~~substantially~~ reduces the ponding areas and existing flooding north of I-70. This drainage system (see **Exhibit 5.14-5**) starts at the Market Lead Railroad low point approximately 1,220 feet to the west of Colorado Boulevard and is located within the 46th Avenue right of way on the south side of I-70. The storm drain continues to the west looping around the south of the Denver Coliseum within McFarland Drive, through the parking lot of the Coliseum, connecting into and discharging the offsite flow into an open channel within Globeville Landing Park, ultimately conveying the flow into the South Platte River. ~~and through Globeville Landing Park, ultimately discharging the offsite flow into the South Platte River.~~ Water also flows down Brighton Boulevard, through a box culvert, ultimately flowing in to the same open channel. It will not change the boundary of the existing floodplain.

Page 5.14-9—Exhibit 54 replaces Exhibit 5.14-5

Exhibit 54 Offsite Drainage for the Partial Cover Lowered Alternative South of I-70

Page 5.14-9—First paragraph now reads:

The Build Alternatives may impact the floodplain for Sand Creek, with bridge construction and new bridge structures crossing this waterway and the I-270 flyover ramp. Bridge piers are considered ~~as~~ a minimal floodplain encroachment; however, new bridge structures will be designed to have minimal effect on the existing regulatory base flood elevation and floodplain limits. The I-270 flyover ramp impacts the existing Sand Creek overflow channel. The Sand Creek overflow channel will have to be reconstructed and analyzed once the final design for the bridge pier is known. If the bridge pier does result in adverse effects to the Sand Creek flood zone, they will need to be addressed during final design.

Page 5.14-10—First paragraph now reads:

The No-Action Alternative and the Build Alternatives will not negatively impact the floodplain resources for the South Platte River and Sand Creek. The effects to human safety, health, and welfare will be minimized and the beneficial values of the floodplains will be preserved. Any encroachment into the Sand Creek or South Platte River floodplain or floodway will require compliance with the Federal Emergency Management Agency, National Flood Insurance Program, and Denver local floodplain permitting requirements.

Page 5.14-10—Third paragraph now reads:

The ~~potential~~ existing ponding areas between Brighton Boulevard and Dahlia Street will be substantially impacted by the Partial Cover Lowered Alternative. To mitigate the risk to human safety, an offsite drainage system is required to capture and convey the offsite surface runoff before reaching the lowered section of I-70 between Brighton Boulevard and Colorado Boulevard and to discharge the stormwater runoff to the South Platte River. This south offsite drainage system also will mitigate the existing ponding in this area. An additional offsite system is required to capture the offsite flows between Colorado Boulevard and Dahlia Street~~, reduce the discharges in a regional detention pond, and convey the flows north of I-70 to an existing storm drain system~~. The proposed drainage system captures the offsite flow at 46th Avenue to the south of I-70 and conveys the flow to a proposed detention pond. A proposed storm drain cuts off the flow conveyed in the existing 10-foot by 4-foot concrete box culvert located to the southeast of the intersection of Colorado Boulevard and the UPRR tracks. The proposed storm drain then conveys the flow to the north into the proposed detention ponds that reduce the peak flows to levels at or below existing flows and release them to the north of I-70 within the existing flow paths.

Updates to floodplains and drainage/hydrology mitigation measures:

Two mitigation commitments have been added since the publication of the Final EIS:

- Design the outfalls to the South Platte River to have no adverse impact to the floodplain
- Coordinate with adjacent projects to ensure there are no drainage or floodplain conflicts between the projects

Additionally, one of the mitigation commitments has been updated:

- Design the Sand Creek bridge structures to have no adverse impact to the Sand Creek floodplain; if no adverse impact is unfeasible, the structures will be designed to minimize adverse impacts to the floodplain to the maximum extent practicable

9.13 Wetlands and Other Waters of the U.S.

Updates to the Final EIS Analysis

Changes to the construction limits since the publication of the Final EIS have led to changes in impacts to wetlands and other waters of the U.S.

Since the I-70 East Project's offsite drainage had to be redesigned and now includes Denver's GLO, there are additional wetland impacts in Globeville Landing Park that weren't previously included as part of the I-70 East Project. A wetland and other waters of the U.S. delineation and impact analysis was conducted by Denver for the GLO. The delineation identified two new wetlands and one new other water of the U.S. within Globeville Landing Park, all of which are being added to the I-70 East wetlands analysis. Previously, these features were not included in the I-70 East analysis because they are located 50 feet outside of the original construction limits.

One additional jurisdictional water of the U.S. (OW276-01), which is located south of I-70 near Madison Street and East 44th Avenue, was identified during a field visit on February 4, 2016. More information about this resource is available in *Attachment C, Updates to Wetlands and Others Waters of the U.S. Technical Report Addendum*.

The updated impacts to jurisdictional and non-jurisdictional wetlands and other waters of the U.S. are captured in **Exhibit 55**. There are no changes to the identified mitigation measures as presented in the Final EIS.

Exhibit 55 Updated Impacted Wetlands by Alternative

Alternative/Option	Jurisdictional				Non-Jurisdictional			
	Wetlands (acres)		Other Waters of the U.S. (acres)		Wetlands (acres)		~~Open Waters (acres)~~	
	Perm	Temp	Perm	Temp	Perm*	Temp	~~Perm~~	~~Temp~~
No-Action Alternative	—	—	—	0.005	—	—	—	—
Revised Viaduct Alternative, General-Purpose Lanes Option	~~0.098~~ 0.086	~~0.009~~ 0.003	~~0.291~~ 0.223	~~0.043~~ 0.040	~~4.254~~ 5.618	~~0.233~~ 0.078	~~0.402~~ —	—
Revised Viaduct Alternative, Managed Lanes Option	~~0.104~~ 0.095	~~0.010~~ 0.003	~~0.310~~ 0.250	~~0.042~~ 0.042	~~4.338~~ 5.618	~~0.234~~ 0.078	~~0.402~~ —	—
Partial Cover Lowered Alternative, General-Purpose Lanes Option	~~0.098~~ 0.126	~~0.009~~ 0.003	~~0.350~~ 0.410	~~0.081~~ 0.570	~~4.254~~ 5.618	~~0.233~~ 0.078	~~0.402~~ —	—
Partial Cover Lowered Alternative, Managed Lanes Option	~~0.104~~ 0.135	~~0.010~~ 0.003	~~0.369~~ 0.437	~~0.080~~ 0.572	~~4.338~~ 5.618	~~0.234~~ 0.078	~~0.402~~ —	—

**Note: Permanent impacts to wetlands includes shading, which is discussed in further detail below.*

Exhibit 55 includes shading impacts to wetlands in the vicinity of Sand Creek. CDOT will mitigate for these impacts per their own guidance; however, shading impacts are not regulated by the USACE, and would not be considered a loss of waters of the U.S. during Section 404 permitting. Permitted impacts for discharge of dredged or fill impacts will be significantly less than those shown above and will remain within the Nationwide Permit 14 (Linear Transportation Projects) parameters. The permanent impacts for the project requiring a permit (not including shading impacts) are currently estimated at 0.236 acre (0.040 acre of permanent wetlands impacts, and 0.196 acre of permanent impacts to other waters of the U.S. for the Preferred Alternative).

Impacts associated with the addition of the GLO to the I-70 East Project total 0.04 acre of permanent impacts to wetlands, 0.16 acre of permanent impacts to other waters of the U.S., and 0.49 acre of temporary impacts to the South Platte River channel, as per the Preconstruction Notification letter to the USACE dated November 5, 2015. Impacts from the GLO are only associated with the Partial Cover Lowered Alternative.

Changes to the Final EIS Text

The following sections include clarifications to *Section 5.15, Wetlands and Other Waters of the U.S.*, of the Final EIS:

Exhibit 55 replaces Exhibit 5.15-3 of the Final EIS.

Global change in Section 5.15 of the Final EIS:

Five features classified as open waters have been removed from *Section 5.15, Wetlands and Other Waters of the U.S.,* of the Final EIS. Under Section 404 of the Clean Water Act (CWA), the term "open waters" includes features with flowing or standing water, such as streams, lakes, and ponds, to the extent that an ordinary high water mark can be determined. Based on this definition, these five features were removed since they are stormwater basins and do not meet the criteria for open waters. Therefore, the phrase "open waters" is removed from the section.

Page 5.15-10, Section 5.15.5—has been replaced and now reads:

Each alternative results in unavoidable impacts to wetlands and other waters of the U.S. However, a number of measures were implemented for each alternative to reduce the overall construction footprint of the roadway improvements and other associated facilities to avoid and minimize impacts to the maximum extent practicable.

All of the alternatives will require an onsite drainage system. Onsite flows from each of the alternatives will be directed north through a pipe to a detention basin near Riverside Cemetery. From there, the overtopping flows will be routed through a pipe west under Race Court on to the north edge of the National Western Complex property, finally discharging to the South Platte River. The location and design of the structure was determined using a number of factors. Locating the onsite drainage outfall south of Race Court lessens the

impacts to the Burlington Ditch/O'Brien Canal, which is classified both as a water of the U.S. and a Section 4(f) resource. In addition, moving the outfall further south would avoid impacts to the South Platte River Trail, which also is classified as a Section 4(f) resource.

An offsite drainage system is required for the Partial Cover Lowered Alternative. The offsite drainage system uses a portion of the GLO by directing stormwater in a new culvert Denver is installing under Brighton Boulevard. The remaining stormwater would be placed in a pipe under the Coliseum parking lot. This pipe connects into the headwall created by the GLO pipe entering the channel and flows I-70 offsite stormwater through the park in the channel and then to an outlet to the South Platte River. The limits for the drainage upgrades in Globeville Landing Park and the proposed south drainage system (GLO) stop at the South Platte River ordinary high water mark. This work results in temporary impacts to the channel, which will be returned to pre-existing contours after construction is completed.

The majority of the impacts to wetlands and other waters of the U.S. at Sand Creek result from shading due to the construction of new on- and off-ramps to Quebec Street. The existing I-70 bridge spanning Sand Creek will remain in place. The Build Alternatives propose widening the structure; however, no new piers for the main structure will need to be constructed. The new ramps for all Build Alternatives require piers near the Sand Creek channel. One pier for the north off-ramp will be constructed within a wetland, causing fill-related permanent impacts. This unavoidable impact is caused by design standards that need to be upheld to ensure roadway safety for motorists using the off-ramp.

I-70 has a number of roadway ditches and stormwater basins that exhibit wetland functions. These water-quality features along the corridor are non-jurisdictional wetlands. The remaining impacts to wetlands for the Build Alternatives will result from widening the roadway, which impacts the non-jurisdictional water-quality features.

9.14 Water Quality

Updates to the Final EIS Analysis

Advancements in the I-70 East Project's design and changes to the construction limits have led to changes in the impervious area calculations and therefore changes in water quality impacts. Additionally, analysis done for the Final EIS was identified to have miscalculations, and have been updated for this analysis. The updated impact summaries are presented in **Exhibit 56** and **Exhibit 57**. The main reasons for the changes are:

- The expanded construction limits increase the overall footprint of the project and therefore increase the existing impervious area. This has a reduced effect on the percentage increase in TSS since the impervious area of project alternatives is not much greater than existing, with some alternatives having less.
- The more advanced design delineates the green belts which are not considered an increase in impervious area and sometimes represent a decrease in impervious area

- The design now includes the impacts for the updated south offsite drainage system which is considered a pervious area and results in a decrease in impervious area.

Exhibit 56 South Platte River Water Quality Effect Summary

Alternative/Option	Water Quality Factor (pounds per mean storm event)						
	Percent impervious	Lead	Copper	Phosphorous	Zinc	TSS	Percentage TSS Increase
Existing Conditions	~~55%~~ 64.4%	~~2.20~~ 2.99	~~0.30~~ 0.40	~~2.20~~ 2.99	~~1.81~~ 2.46	~~781~~ 1,062	N/A
No-Action Alternative, North Option	~~58%~~ 62.6%	~~2.29~~ 2.92	~~0.31~~ 0.39	~~2.29~~ 2.92	~~1.88~~ 2.40	~~811~~ 1,038	~~4%~~ -2%
No-Action Alternative, South Option	~~51%~~ 59.9%	~~2.08~~ 2.82	~~0.28~~ 0.38	~~2.08~~ 2.82	~~1.71~~ 2.32	~~738~~ 1,001	~~0%~~ -6%
Revised Viaduct Alternative, North Option	~~67%~~ 75.7%	~~2.58~~ 3.42	~~0.35~~ 0.46	~~2.58~~ 3.42	~~2.12~~ 2.81	~~915~~ 1,214	~~17%~~ 14%
Revised Viaduct Alternative, South Option	~~60%~~ 65.8%	~~2.35~~ 3.04	~~0.32~~ 0.41	~~2.35~~ 3.04	~~1.94~~ 2.50	~~836~~ 1,080	~~7%~~ 2%
Partial Cover Lowered Alternative	~~63%~~ 68.9%	~~2.44~~ 3.16	~~0.33~~ 0.43	~~2.44~~ 3.16	~~2.01~~ 2.60	~~866~~ 1,123	~~11%~~ 6%

Exhibit 57 Sand Creek Water Quality Effect Summary

Alternative/Option	Water Quality Factor (pounds per mean storm event)						
	Percent impervious	Lead	Copper	Phosphorous	Zinc	TSS	Percentage TSS Increase
Existing Conditions	~~32%~~ 34.2%	~~5.31~~ 4.17	~~0.72~~ 0.56	~~5.31~~ 4.17	~~4.37~~ 3.43	~~1,886~~ 1,479	~~N/A~~
Build Alternatives, General-Purpose Lanes Option	~~37%~~ 47.7%	~~6.46~~ 5.32	~~0.87~~ 0.72	~~6.46~~ 5.32	~~5.31~~ 4.38	~~2,292~~ 1,888	~~22%~~ 28%
Build Alternatives, Managed Lanes Option	~~40%~~ 50.3%	~~7.26~~ 5.54	~~0.98~~ 0.75	~~7.26~~ 5.54	~~5.97~~ 4.56	~~2,576~~ 1,968	~~37%~~ 33%

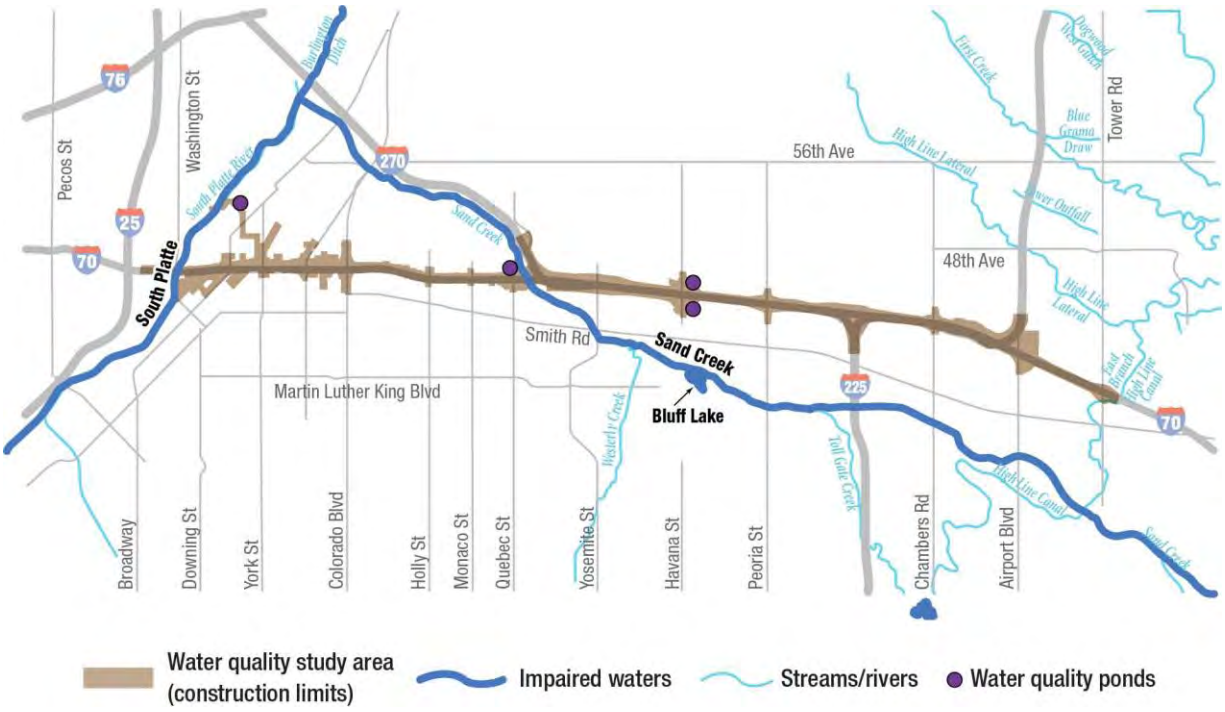
Exhibit 58 shows the updated percentage of impervious area over streams for each alternative. Although these numbers have changed, it does not require any additional mitigation from what was discussed in the Final EIS.

Exhibit 58 Water Quality Factor Summary

Alternative/Option	Water Quality Factor			
	Percent Increase in Impervious Surface	Daily Traffic Volume (vehicles per day)	Number of Stream Crossings	New Impervious Surface Over Streams (acres)
South Platte River				
Existing Conditions	N/A	143,800	1	0
No-Action Alternative, North Option	~~0~~ -2%	191,700	1	0
No-Action Alternative, South Option	~~22~~ 8%	191,700	1	0
Revised Viaduct Alternative, North Option	~~9~~ 14%	214,600	1	0
Revised Viaduct Alternative, South Option	~~14~~ 3%	214,600	1	0
Partial Cover Lowered Alternative	~~14~~ 8%	214,600	1	0
Sand Creek				
Existing Conditions	N/A	132,300	1	0
No-Action Alternative	N/A	174,300	1	0
Build Alternatives, General-Purpose Lanes Option	~~13~~ 39%	229,100	1	~~1.08~~ 2.59
Build Alternatives, Managed Lanes Option	~~25~~ 47%	174,500	1	~~3.15~~ 3.55

The potential locations of water quality ponds have been updated since the Final EIS and are shown in **Exhibit 59**.

Exhibit 59 Preliminary Water Quality Pond Locations



Changes to the Final EIS Text

The following sections include clarifications to *Section 5.16, Water Quality*, of the Final EIS:

Exhibit 56, Exhibit 57, Exhibit 58, and Exhibit 59 replace Exhibit 5.16-5, Exhibit 5.16-6, Exhibit 5.16-7, and Exhibit 5.16-8 in the Final EIS.

Global change in Section 5.16 of the Final EIS:

The text discussion and exhibits are updated to reflect changes discussed above.

Updates to the water quality mitigation measures:

The following mitigation commitments have been revised:

- ~~Apply sand/salt mixtures (30 percent/70 percent, respectively) at rates of 105 pounds to 115 pounds per lane mile, which is roughly one third of the maximum allowable amount of 300 pounds per lane mile.~~ ~~Use~~ Reduce the application rate of sand and salt mixtures from historic rates by compliance with Colorado Department of Public Health and Environment, Air Quality Control Commission's Regulation 16.
- Apply liquid de-icer products, ~~such as magnesium chloride and Caliber (a mixture of magnesium chloride, cornstarch, alcohol, and tree sap; apply these~~ at the lowest

application rate that will remain effective by adherence to CDOT's Standard Operating Guide for Winter Maintenance and Operations.

- Utilize only de-icing and anti-icing products ~~at~~ that are on the Pacific Northwest Snow Fighters Approved Product List. Use product application rates ~~of 10 pounds~~ that conform to ~~80 pounds per lane mile~~ the manufacturer's recommendations and air and water quality regulations. ~~Use Ice Slicer, another solid mixture; this product is a sand/salt mixture with anti-corrosive additives and is applied at a rate of 100 pounds to 150 pounds per lane mile; this product is preferred over regular sand/salt mixtures because it produces less fugitive dust.~~

9.15 Hazardous Materials

Updates to the Final EIS Analysis

An environmental records search was conducted in February 2016 using the same search criteria summarized in the Final EIS (see *Attachment C, Updates to Hazardous Materials Technical Report Addendum,* for details).

Fewer leaking underground storage tank (LUST) sites were identified within the study area. However, three additional solid waste landfills (SWLs); four additional Voluntary Clean-up and Redevelopment Act (VCRA) sites; one additional Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), No Further Remedial Action Planned (NFRAP) site; and five additional Resource Conservation and Recovery Act (RCRA) sites were identified within the study area. **Exhibit 60** summarizes the updated number of sites now identified within the study area.

Exhibit 60 Updated Number of Hazardous Material Sites

Hazardous Material Database	Number of Sites
Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)	~~0~~ 2
CERCLIS, No Further Remedial Action Planned	~~3~~ 4
National Priority List	1
Resource Conservation and Recovery Act (RCRA) Generator Facilities	~~8~~ 5
RCRA Non-Generator Facilities	~~1~~ 8
RCRA Non-CORRACTs Treatment, Storage, and Disposal	1
Solid Waste Landfill	4 7
Voluntary Clean-Up Plan/Voluntary Clean-Up and Redevelopment Program	~~1~~ 5
Underground Storage Tank	~~28~~ 18
Leaking Underground Storage Tank	~~26~~ 18

Source: Attachment C, Updates to Hazardous Materials Technical Report Addendum

Because of the modifications to the design, there is a larger area of ground disturbance for each of the alternatives. The Revised Viaduct Alternative will not increase the number of hazardous material sites impacted; however, the Partial Cover Lowered Alternative would increase the number of impacted sites.

Exhibit 61 summarizes the number of potential hazardous material sites and area of ground disturbance impacted by each project alternative.

Exhibit 61 Hazardous Material Sites by Alternative

Alternative/Option	Number of Known Hazardous Material Sites	Area of Ground Disturbance (acres)
No-Action Alternative	~~7~~ 6	~~44~~ 46
General-Purpose Lanes		
Revised Viaduct Alternative, North Option	25	~~575~~ 715
Revised Viaduct Alternative, South Option	~~24~~ 20	~~575~~ 714
Partial Cover Lowered Alternative	~~28~~ 34	~~620~~ 835
Managed Lanes Option (Option to Build Alternatives)		
Revised Viaduct Alternative, North Option	~~25~~ 26	~~658~~ 836
Revised Viaduct Alternative, South Option	~~24~~ 21	~~658~~ 835
Partial Cover Lowered Alternative	~~28~~ 35	~~703~~ 938

The findings are similar to the Final EIS; however, fewer LUST sites would potentially be impacted by each of the alternatives and the number of VCRA and SWL sites potentially impacted would increase for the Revised Viaduct Alternative and Partial Cover Lowered Alternative. The VCRA sites are associated with the former Stapleton Airport. According to the database report, a No-Action Determination has been issued for the sites; however, volatile organic compounds were identified in groundwater at one of the sites.

The mitigation measures for encountering hazardous materials sites remain the same as stated in the Final EIS. For information on mitigation measures and additional information regarding specific facilities of concern likely to be encountered by the alternatives and impacts to these facilities, refer to the Final EIS. *Attachment C, Updates to Hazardous Materials Technical Report Addendum* in this document provides more detail on the updated sites and impacts.

Changes to the Final EIS Text

The following discussions include clarifications on *Section 5.18, Hazardous Materials,* of the Final EIS:

Exhibit 55 and Exhibit 60 replace Exhibits 5.18-2 and 5.18-11 in the Final EIS.

Updates to hazardous materials mitigation measures:

The following mitigation commitment has been added:

- Coordinate with and obtain approval from EPA and CDPHE-APCD as necessary when construction occurs in the Vasquez Boulevard/I-70 Superfund site.

9.16 Utilities

Updates to the Final EIS Analysis

There are no updates or changes to the discussion of existing conditions for utilities since the publication of the Final EIS. Impacts to utilities have been slightly modified and are included below.

Changes to the Final EIS Text

The following discussions include clarifications on *Section 5.19, Utilities,* of the Final EIS:

Page 5.9-18, Partial Cover Lowered Alternative discussion—first bullet under communications/fiber optics has been modified and now reads:

- Multiple ~~Two~~ ducts running north-south along Brighton Boulevard will need to be relocated for the reconstruction of Brighton Boulevard

Page 5.9-19, Partial Cover Lowered Alternative discussion—first bullet under Natural gas, petroleum, and jet fuel has been modified and now reads:

- 20-inch gas pipe running north-south along Brighton Boulevard will need to be relocated to make room for the east Brighton Boulevard bridge abutment and ~~onsite outfall system~~ drainage improvements

9.17 Human Health

Updates to the Final EIS Analysis

There are no updates or changes to the human health impacts and results since the publication of the Final EIS.

Changes to the Final EIS Text

All text discussions from the previous subsections of this chapter are updated and reflected in *Section 5.20, Human Health Conditions* of the Final EIS.

9.18 Cumulative Impacts

Updates to the Final EIS Analysis

There are no updates or changes to the cumulative impacts and results since the publication of the Final EIS.

Changes to the Final EIS Text

All text discussions from the previous subsections of this chapter are updated and reflected in *Chapter 6*, *Cumulative Impacts* of the Final EIS.

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Chapter 10 Section 4(f) Evaluation Updates

Section 4(f) of the Department of Transportation Act, 49 USC §303 and 23 USC §138, mandates protection of historic resources and publicly owned parks, recreation areas, wildlife and waterfowl refuges from potentially adverse impacts of federal transportation projects. A complete Section 4(f) evaluation is included in *Chapter 7, Section 4(f) Evaluation*, of the Final EIS. This chapter is intended to capture the updates and changes to the evaluation in the Final EIS.

Although Section 11502 of the Fixing America's Surface Transportation Act (FAST Act), effective December 2015, modifies 23 USC §138 to no longer consider improvements to—or the maintenance, rehabilitation, or operation of—railroad or rail transit lines or elements thereof that are in use or were historically used for the transportation of goods or passengers as a use of a historic site, this Section 4(f) evaluation retains the discussion of the use of the rail lines in the Final EIS and updates them when necessary.

10.1 Updates to the Final EIS Section 4(f) Evaluation

This section includes the identification of additional Section 4(f) properties and how these additional properties and design modifications require updates to the analysis completed for the Final EIS.

The Section 4(f) evaluation updates include information about the Denver GLO Project. Initially, the GLO was not included the Section 4(f) evaluation because the I-70 East Project included a separate, independent drainage system. Subsequently, however, it was determined that the design of the GLO conflicts with some of the drainage facilities for the Partial Cover Lowered Alternative as described in the Final EIS, rendering the Partial Cover Lowered Alternative design not prudent. After careful consideration, FHWA and CDOT have chosen to incorporate the GLO facilities into the drainage system for the Partial Cover Lowered Alternative.

Updates to Section 4(f) Properties Located within the Project Area

As discussed in Section 9.6, Historic Preservation, of this document, additional properties have been surveyed and determined to be eligible for listing on the NRHP since publication of the Final EIS. Of the 22 newly identified historic resources, three resources (5DV12437, 5DV12304, and 5DV12320) have a *de minimis* impact determination and are described later in this chapter.

The Delgany Street Public Sanitary Sewer (5DV4725) was included and discussed in the Final EIS (under 5DV4725.5, a different segment and location for the resource); however, it was not subject to use previously. Due to the design modifications, the impacts and use determination for this resource has been updated since the publication of the Final EIS.

The use is limited to the segment demarcated as 5DV4725.6. Descriptions of impacts from each alternative and 4(f) determinations are included in this chapter.

Similarly, the South Platte River Greenway Trail was discussed in the Final EIS, but was not subject to a use. Design modifications also create a temporary occupancy of the trail within Globeville Landing Park. This is a different segment than the portion north of I-70 included in the Final EIS. Coordination with the official with jurisdiction has resulted in their concurrence with the finding of temporary occupancy (included in *Attachment B, Updates to Agency Consultation Addendum*).

The Chicago, Burlington and Quincy Railroad/Burlington Northern & Santa Fe Railroad (5DV6247.3) was included and discussed in the Final EIS; however, it was not subject to use previously. Due to the design modifications, the impacts and use determination for this resource under all alternatives have been updated since the publication of the Final EIS.

Design modifications near the Ralston Purina Plant/Nestlé Purina PetCare Company resulted in changes to impacts for the Partial Cover Lowered Alternative, updating the use since the publication of the Final EIS.

A list of Section 4(f) properties discussed in this chapter, along with the newly identified historic resources, is included in **Exhibit 62**.

Exhibit 62 Updates to Section 4(f) Properties and Uses

Historic Resource Property Name and Address	New property since Final EIS	Change in impact or use since Final EIS	Section 4(f) Use described in this chapter	Resource discussion page number
Market Street Railroad/ Chicago Burlington & Quincy Railroad Segment (5AM1298.2)	No	Impact change for Partial Cover Lowered Alternative No change in use	Use: Partial Cover Lowered Alternative	207
Union Pacific Beltline Railroad Segment (Denver Rock Island Railroad) (5AM2083.1)	No	Impact change for Partial Cover Lowered Alternative No change in use	*De minimis*: Partial Cover Lowered Alternative	208
Delgany Street Public Sanitary Sewer (5DV4725)	No	Impact and use change for Partial Cover Lowered Alternative	Use: Partial Cover Lowered Alternative	192
Denver and Kansas Pacific/Union Pacific Railroad (5DV6248)	No	Impact change for all alternatives No change in use	*De minimis*: No-Action and Revised Viaduct Alternatives Use: Partial Cover Lowered Alternative	210
Rocky Mountain Arsenal Railroad Segment (5DV7048.2)	No	Impact change for Revised Viaduct and Partial Cover Lowered Alternatives No change in use	Use: Partial Cover Lowered Alternative	217
Chicago, Burlington and Quincy Railroad/Burlington Northern & Santa Fe Railroad (5DV6247)	No	N/A	*De minimis*: All alternatives	196

Exhibit 62 Updates to Section 4(f) Properties and Uses

Historic Resource Property Name and Address	New property since Final EIS	Change in impact or use since Final EIS	Section 4(f) Use described in this chapter	Resource discussion page number
Union Pacific Railroad Railyard (5DV.6248.3, 5DV.6248.5, 5DV.6248.10)	Yes	N/A	No use, not further described or discussed	N/A
Burlington Northern Railroad Overpass (5DV.7057)	Yes	N/A	No use, not further described or discussed	N/A
Concrete Railroad Bridge (5DV.7058)	Yes	N/A	No use, not further described or discussed	N/A
Ralston Purina Plant/Nestlé Purina PetCare Company, 2151 East 45th Avenue (5DV9245)	No	Impact and use change for Partial Cover Lowered Alternative	*De minimis:* Partial Cover Lowered Alternative	198
National Western Historic District (5DV10050)	No	Impact change for Partial Cover Lowered Alternative No change in use	*De minimis:* Partial Cover Lowered Alternative	219
38th Street Underpass (5DV.7110)	Yes	N/A	No use, not further described or discussed	N/A
Banker's Warehouse Co. (5DV11720)	No	Impact change for Partial Cover Lowered Alternative No change in use	*De minimis:* Partial Cover Lowered Alternative	220
NWT Rail Spur (5DV12437.1)	Yes	N/A	*De minimis:* Partial Cover Lowered Alternative	196
RLW Sand Company, 4390 Madison Street (5DV12304)	Yes	N/A	*De minimis:* Partial Cover Lowered Alternative	200
High Tech Early College/STRIVE Prep, 11200 East 45th Avenue (5DV12320)	Yes	N/A	*De minimis:* Partial Cover Lowered Alternative	202
National Western Security and Employment Building, 4695 Franklin Street (5DV12317)	Yes	N/A	No use, not further described or discussed	N/A
Stallcop Residence, 2000 East 47th Avenue (5DV12302)	Yes	N/A	No use, not further described or discussed	N/A
Lechuga-Rosales Residence, 4684 Race Street (5DV12303)	Yes	N/A	No use, not further described or discussed	N/A
4683 Vine Street LLC Property, 4683 Vine Street (5DV12305)	Yes	N/A	No use, not further described or discussed	N/A
Guzman Residence, 4681 Race Street (5DV12306)	Yes	N/A	No use, not further described or discussed	N/A
Yapp-Sluneko Residence, 4695 Milwaukee Street (5DV12308)	Yes	N/A	No use, not further described or discussed	N/A
Sanchez Residence, 4700 Fillmore Street (5DV12309)	Yes	N/A	No use, not further described or discussed	N/A
Snyder Residence, 4680 Fillmore Street (5DV12310)	Yes	N/A	No use, not further described or discussed	N/A
Arrieta Residence, 4691 Vine Street (5DV12311)	Yes	N/A	No use, not further described or discussed	N/A

Exhibit 62 Updates to Section 4(f) Properties and Uses

Historic Resource Property Name and Address	New property since Final EIS	Change in impact or use since Final EIS	Section 4(f) Use described in this chapter	Resource discussion page number
Chavez Residence, 4690 Fillmore Street (5DV12312)	Yes	N/A	No use, not further described or discussed	N/A
Urbina Residence, 4685 Milwaukee Street (5DV12313)	Yes	N/A	No use, not further described or discussed	N/A
National Western Security and Employment Building, 4695 Franklin Street (5DV12317)	Yes	N/A	No use, not further described or discussed	N/A
Stallcop Residence, 2000 East 47th Avenue (5DV12302)	Yes	N/A	No use, not further described or discussed	N/A
Parks and Recreational Resources	**New property since Final EIS**	**Change in impact or use since Final EIS**	**Section 4(f) Use described in this chapter**	**Resource discussion page number**
Globeville Landing Park	No	Impact change for Partial Cover Lowered Alternative No change in use	Use: Partial Cover Lowered Alternative	222
South Platte River Greenway Trail	Yes	N/A	Temporary occupancy	223

Section 4(f) Properties Subject to a Use from the Proposed Project

The following subsections provides a brief description of each newly identified historic property subject to a use, and why there is a use for the alternatives and options under consideration. The Chicago, Burlington and Quincy Railroad/Burlington Northern & Santa Fe Railroad also is described, along with why there is a use for the alternatives and options under consideration. The impacts to the Ralston Purina Plant/Nestlé Purina PetCare Company are also included for the Partial Cover Lowered Alternative. The resources described here are in addition to those detailed in Section 7.8 of the Final EIS.

Delgany Street Public Sanitary Sewer (5DV.4725.6)

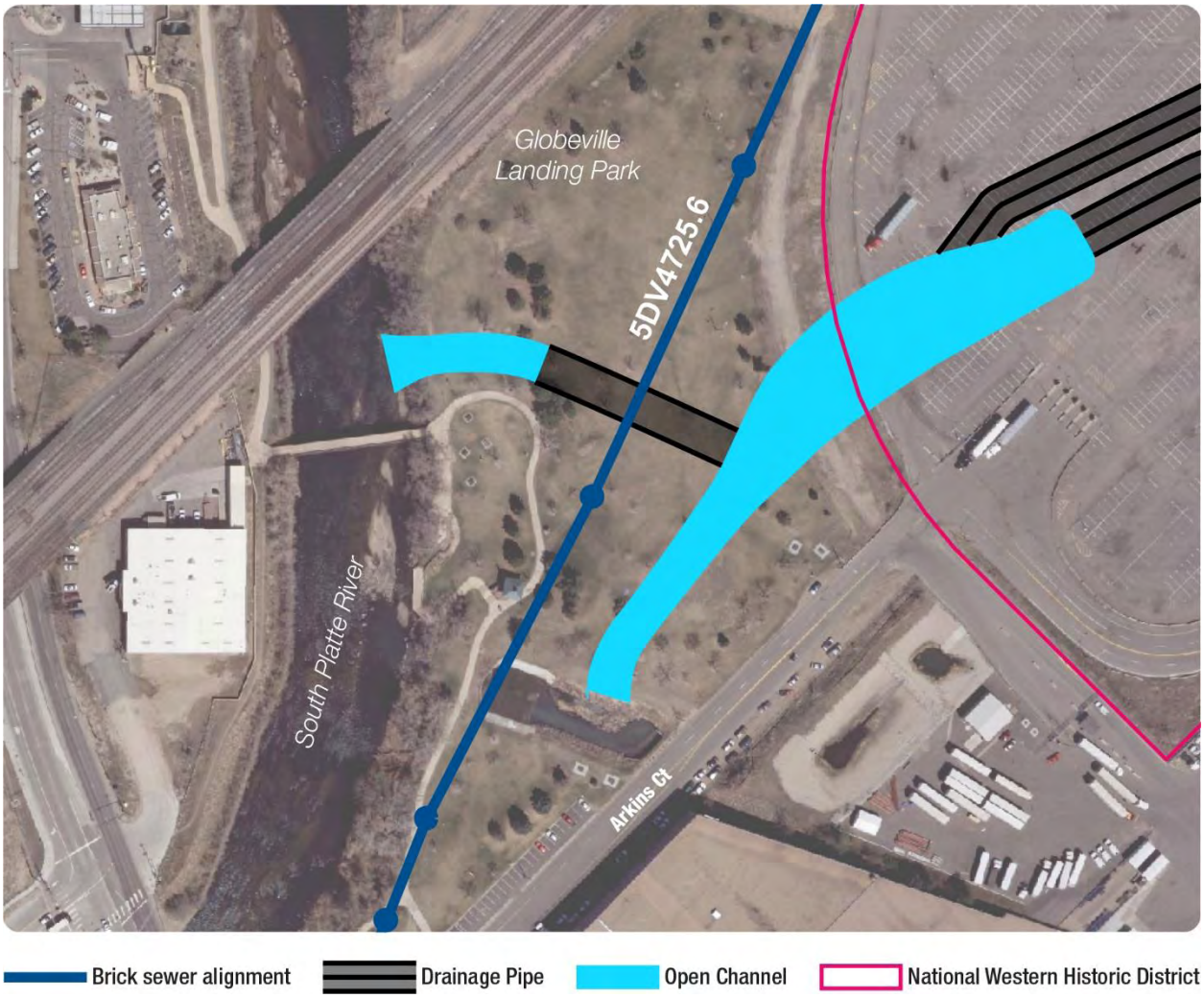
This segment of the Delgany Street Public Sanitary Sewer system is located underground and is aligned southwest-northeast on the east side of the South Platte River within Globeville Landing Park. The sewer is located just south of I-70 and runs southwest parallel to the South Platte River and beneath Globeville Landing Park. The segment of the system includes the brick Delgany Common Interceptor sewer. The sewer is buried below Globeville Landing Park, and therefore the condition of the segment could not be assessed. The *Historic Context– Denver's Brick Sewers, City and County of Denver* by Gail Keeley (2012) demonstrates that segment 5DV4725.6 is part of a combined storm and sanitary sewer system and that the majority of the segment maintains its original 1895 materials and design. The sewer was constructed of three courses of brick and mortar with an inner diameter of 77 inches. Denver replaced approximately 200 feet of the northern extent of the

Delgany Common Interceptor sewer within 5DV4725.6 with concrete in 1937 (Keeley, 2012).

Partial Cover Lowered Alternative

The Partial Covered Lowered Alternative would result in permanent changes to the sewer design and materials in a 75-foot-wide section of the segment, as shown in **Exhibit 63**. This alternative will result in an Adverse Effect under Section 106 and a direct use to segment 5DV4725.6 and the entirety of 5DV4725.

Exhibit 63 Delgany Street Public Sanitary Sewer—Partial Cover Lowered Alternative



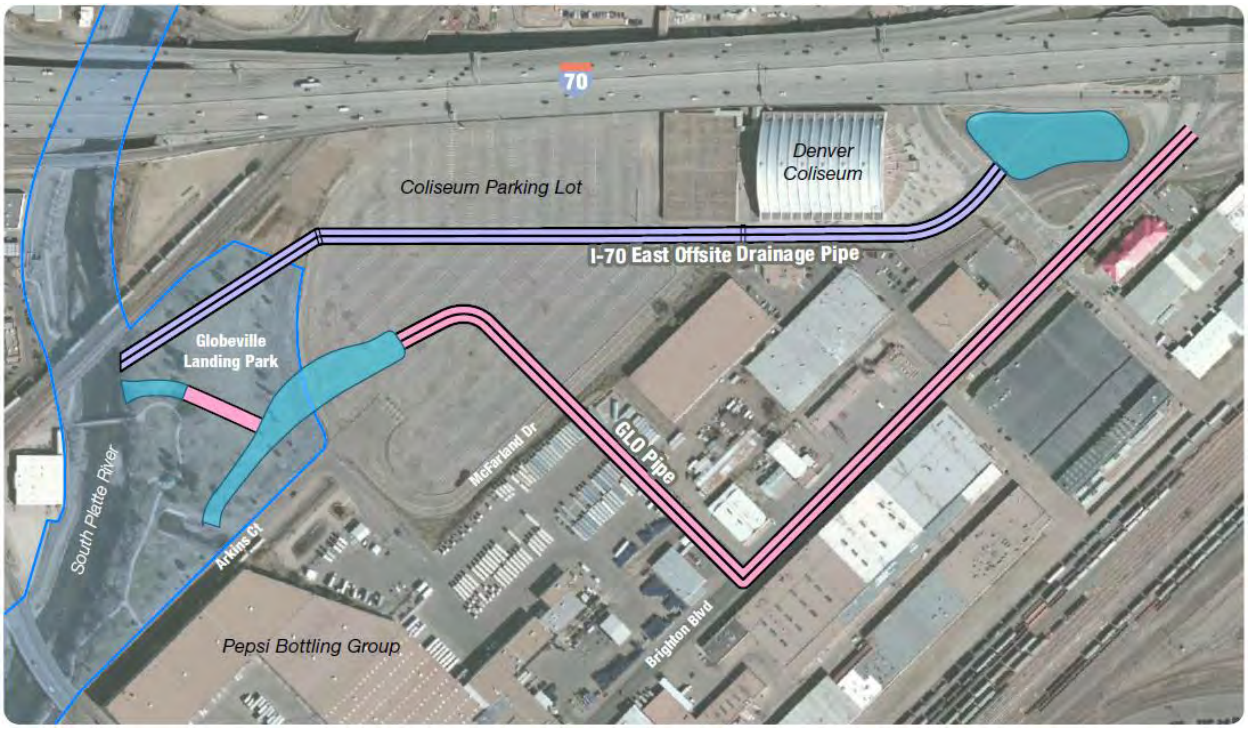
Avoidance alternatives

The No-Action and Revised Viaduct Alternatives avoid use of this property. Although the alternatives avoid this resource, they use other Section 4(f) resources. Other alternatives

that avoid this property were eliminated because they were not considered feasible and prudent, and are summarized in Section 7.9 of the Final EIS.

There are no prudent alternatives to the use of the sewer for the Partial Cover Lowered Alternative for two reasons. First, the sewer runs from I-70 to the southwest, paralleling the South Platte River. Therefore there are no alternative horizontal alignments that avoid the sewer. Second, elevation constraints above and below the sewer do not allow for a vertical shift that would avoid the sewer. The original design for the offsite system for I-70 East analyzed in the Final EIS (see **Exhibit 64**) passed over the top of the sewer.

Exhibit 64 Drainage in the Final EIS—Partial Cover Lowered Alternative



However, the GLO is designed to drain the majority of the Montclair Basin in Denver, and must accommodate much greater flow from a wider area of the city. Therefore, the profile of the pipe must be at a lower elevation than the Final EIS design, not allowing it to pass over the sewer. Jacking and boring the GLO system under the sewer is not prudent because of the cost and unique problems associated with this activity. At this location, the GLO system consists of three 11-foot by four-foot culverts with the top being within a foot or two under the bottom of the 77 inch brick sewer. The sewer is an old brick sewer that would need to be supported in such a way to prevent damage during the jacking and boring procedure, which is very expensive. In addition, it would be very difficult to protect the aging brick pipe from damage during the procedure, and would not guarantee a lack of adverse effect. To pass the outfall over the sewer a pumping system could be required, but the use of a pump system to pump the flows over the sewer is not prudent because of the extraordinary cost associated with a pump system and its maintenance to handle the volume of water necessary during

peak events. Additionally, the system would need back-up power, pumps and pump basins to guard against system failure during storm events. For these reasons, a shift in profile is not prudent due to unacceptable operational conditions.

Measures to minimize harm

Overall minimization efforts were implemented in the design of each alternative and associated option to minimize impacts to adjacent properties, which in turn also minimizes the use of a number of Section 4(f) properties.

The USACE (who is permitting for Denver's GLO Project under the Clean Water Act) and Denver have entered into a Memorandum of Agreement with SHPO, which includes:

- Level II documentation of Delgany Common Interceptor Sewer (5DV4725.6) as outlined in "Historic Resource Documentation Standards for Level I, II, and III Documentation" (OAHP Publication #1595) prior to any construction.
- Interpretive signage for the Delgany Common Interceptor Sewer will be displayed in Globeville Landing Park. One interpretive sign shall be installed over the approximate location of the buried sewer along a sidewalk within Globeville Landing Park.
- A qualified archaeologist will be on site to monitor and document the exposure and removal of the brick-lined sewer (5DV4725.6). The archaeological monitor will photo document the exposed sections of sewer.

Adverse effects to historic brick-lined sewers within the City and County of Denver are mitigated under Stipulation 2 of the *Programmatic Agreement among the Federal Highway Administration, the Colorado State Historic Preservation Officer, and the Colorado Department of Transportation regarding Brick-Lined Sewers in the City and County of Denver (2013)* [Brick Sewer PA]. This Agreement is referenced in the I-70 East Corridor PA Stipulation III (3). Application of the Brick Sewer PA satisfies mitigation of this adverse effect so CDOT and FHWA are not signatories to the USACE Memorandum of Agreement.

Chicago, Burlington & Quincy Railroad/Burlington Northern & Santa Fe Railroad (5DV6247)

This resource was included and discussed in the Final EIS; however, it was not subject to use previously.

The railroad line was originally built in 1882 as the Burlington and Colorado Railroad, a subsidiary of the Chicago, Burlington & Quincy Railroad. In 1908, Chicago, Burlington & Quincy Railroad absorbed Burlington and Colorado, along with several other subsidiaries. In 1970, Chicago, Burlington & Quincy Railroad merged with the Great Northern and Northern Pacific Railroads and others to form the Burlington Northern, which became the BNSF Railway in 1995.

Chicago, Burlington & Quincy Railroad/Burlington Northern & Santa Fe Railroad

Constructed:	1882
Eligibility:	Criterion A
Type:	Railroad
Used by:	All Alternatives (*de minimis*)

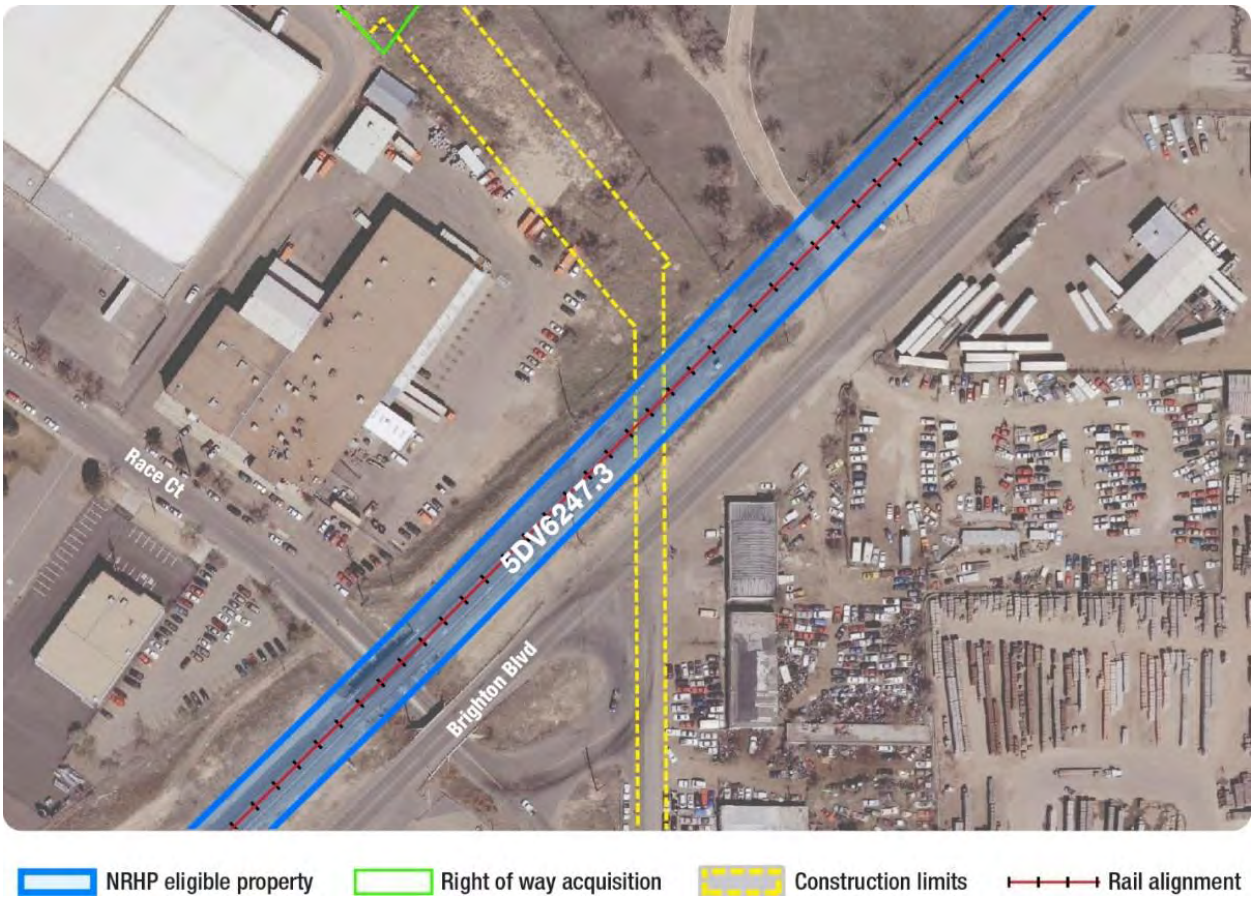
The Burlington and Colorado Railroad/Chicago, Burlington & Quincy Railroad within the APE (5DV6247) consists of three segments, designated by the decimals 1, 2 and 3. 5DV6247.1 is located along I-70 and 5DV6247.2 is located on the north and west of Globeville Landing Park. Neither segment has any direct impact. 5DV6247.3 consists of a four-track segment of standard-gauge railroad passing underneath I-70 leading to the north Denver rail yards. The southernmost boundary starts at East 44th Avenue and the South Platte River. The rail line continues diagonally at a northeast direction through the present day National Western Historic District, along Brighton Boulevard past Race Court, to the east of Riverside Cemetery, and crosses York Street at approximately East 54th Avenue. It continues northeast, crossing the existing Rock Island Railroad tracks south of East 56th Avenue and southwest of the SunCor oil refinery.

All Alternatives

The Final EIS indicated no use of this resource under Section 4(f) regulations by any of the alternatives. Design modifications now indicate a need for a permanent easement of 4,188 square feet with all alternatives to place a stormwater drainage pipe underneath the tracks of segment 5DV6247.3 (see **Exhibit 65**). The pipe would be bored deep beneath the tracks, so the tracks, ties, and ballast itself would not be modified to place the pipe.

The proposed easement would not diminish the features that qualify the resource for inclusion on the NRHP. Since SHPO concurred in a finding of No Adverse Effect, FHWA makes a *de minimis* impact determination for this resource in accordance with Section 4(f). The impact determination includes all possible planning to minimize harm.

Exhibit 65 Chicago, Burlington and Quincy Railroad/Burlington Northern Santa Fe Railroad—All Alternatives



Ralston Purina Plant/Nestlé Purina PetCare Company (5DV9245)

This resource was included and discussed in the Final EIS; however, the impacts and use determination for this resource from the Partial Cover Lowered Alternative have changed since the publication of the Final EIS.

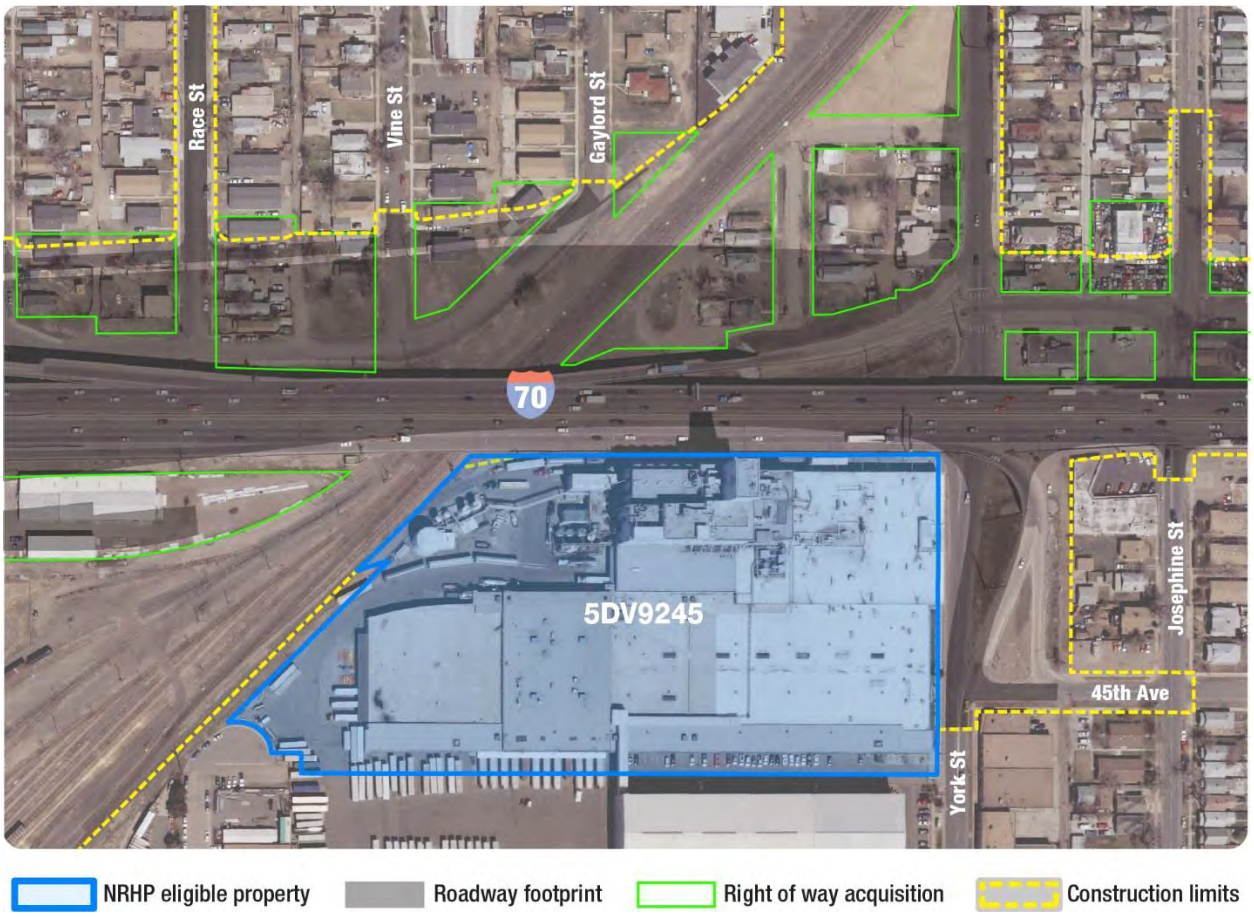
Partial Cover Lowered Alternative

Nestlé Purina PetCare Company

Constructed:	1928
Eligibility:	Criterion A
Type:	Office, warehouse, manufacturing facility, and grain silos
Used by:	No-Action Alternative, South Option (use) and Revised Viaduct Alternative, South Option (use), Partial Cover Lowered Alternative (*de minimis*)

The Final EIS indicated this property would not be used by the Partial Cover Lowered Alternative. Because of the design modifications, there is a need for acquisition or permanent easement of 735 square feet from the very northwest corner of the property to accommodate the construction of the drainage system. This acquisition is necessary for the drainage pipe to cross around the proposed south abutment of the Union Pacific Railroad Bridge. In addition, a temporary easement measuring 890 square feet is required to construct and operate a temporary railroad shoofly track that would travel east of the existing Union Pacific Railroad right of way (see **Exhibit 66**). The temporary and permanent easements from the property would impact 0.3 percent of the resource in an area that is currently vacant. The area that would be impacted does not hold any of the historic features important to the significance of the property. The proposed easements would not diminish the features that qualify the resource for inclusion on the NRHP. The temporary construction easement could be considered a temporary occupancy. However, as indicated in the 2012 FHWA Section 4(f) Policy Paper, a *de minimis* impact determination may be made for a temporary occupancy of Section 4(f) property. Since SHPO concurred in a finding of No Adverse Effect, FHWA makes a *de minimis* impact determination for this resource in accordance with Section 4(f). The impact determination includes all possible planning to minimize harm.

Exhibit 66 Nestlé Purina PetCare Company—Partial Cover Lowered Alternative



RLW Sand Company (5DV12304)

This mid-20th century concrete grain elevator and the associated office building are eligible under Criterion A because of the role they played in the Farmer's Union Marketing Association, an offshoot of the Rocky Mountain Farmer's Union. In addition, the grain elevator represents the confluence of industry and agriculture, which dominated the economy in this area of north Denver and—along with the nearby stock show and former stockyards—represents an urban agricultural presence.

RLW Sand Company

Constructed:	1950s
Eligibility:	Criterion A
Type:	Concrete grain elevator and associated office building
Used by:	Partial Cover Lowered Alternative (*de minimis*)

Partial Cover Lowered Alternative

Currently, this resource is situated 600 feet south of the existing viaduct. The Partial Cover Lowered Alternative would shift the highway mostly to the north; the southern limits of the highway would be located 650 feet from the resource. To construct the lowered section, the Market Street Railroad/Chicago, Burlington & Quincy Railroad (5AM1298.2) would be modified in this area. To complete the work on the tracks, a temporary easement measuring 7,600 square feet is required from this property (see **Exhibit 67**).

Additionally, there would be indirect effects to this resource due to visual and setting changes in the area because of the changes to the highway. Though the demolition of the existing viaduct and placement of the highway below grade represent a change in the resource setting, the construction of this alternative would not diminish the ability of the resource to convey its historic significance. In addition, the acquisition of a temporary easement on the property would not permanently impact the features of the building or its association with the railroad, and the resource would maintain sufficient integrity to convey its significance. Since SHPO concurred in a finding of No Adverse Effect to the resource, FHWA makes a *de minimis* impact determination for the resource in accordance with Section 4(f). The impact determination includes all possible planning to minimize harm.

Exhibit 67 RLW Sand Company—Partial Cover Lowered Alternative

High Tech Early College/STRIVE Prep (5DV12320)

This building is significant under Criterion C as representative of the work of a master. Edward Dart, a prominent and much-renowned architect from Chicago, designed the building, which originally was the corporate headquarters for Samsonite. Although more well known for his religious and residential designs, Dart completed a few corporate commissions during his career, the Samsonite headquarters building being one of them. This building is a rare example of his work found in Colorado, and according to an assistant who worked on the project, was awarded multiple design awards. The building is currently home to the High Tech Early College and STRIVE Preparatory Schools.

High Tech Early College/ STRIVE Prep

Constructed:	1968
Eligibility:	Criterion C
Type:	Samsonite Corporate Headquarters
Used by:	Build Alternatives (*de minimis*)

Build Alternatives

Both Build Alternatives will require a permanent easement of 13,739 square feet (0.03 acre) from the southern end of the resource boundary (see **Exhibit 68**). The acquisition, which accounts for 2.4 percent of the current property size, would impact a grassy area and not affect any of the buildings or parking lot areas within the property. This is not considered to be an adverse effect because it would not affect any of the features that qualify it for significance under Criterion C.

Additionally, there will be indirect effects in the form of noise, visual, and historic setting changes to this resource, but the alternatives would not affect the features that qualify the resource for inclusion in the NRHP and the resource would maintain sufficient integrity to convey its significance. Since SHPO concurred in a finding of No Adverse Effect, FHWA makes a *de minimis* impact determination for this resource in accordance with Section 4(f). The impact determination includes all possible planning to minimize harm.

Exhibit 68 High Tech Early College/STRIVE Prep—Build Alternatives

NWT Rail Spur (5DV12437)

The segment lies just north of the extensive rail network in the Denver Union Stockyards, and was constructed to link the Denver Union Stockyards and the Northwestern Terminal (NWT) rail line, which eventually became the Denver and Salt Lake Railway.

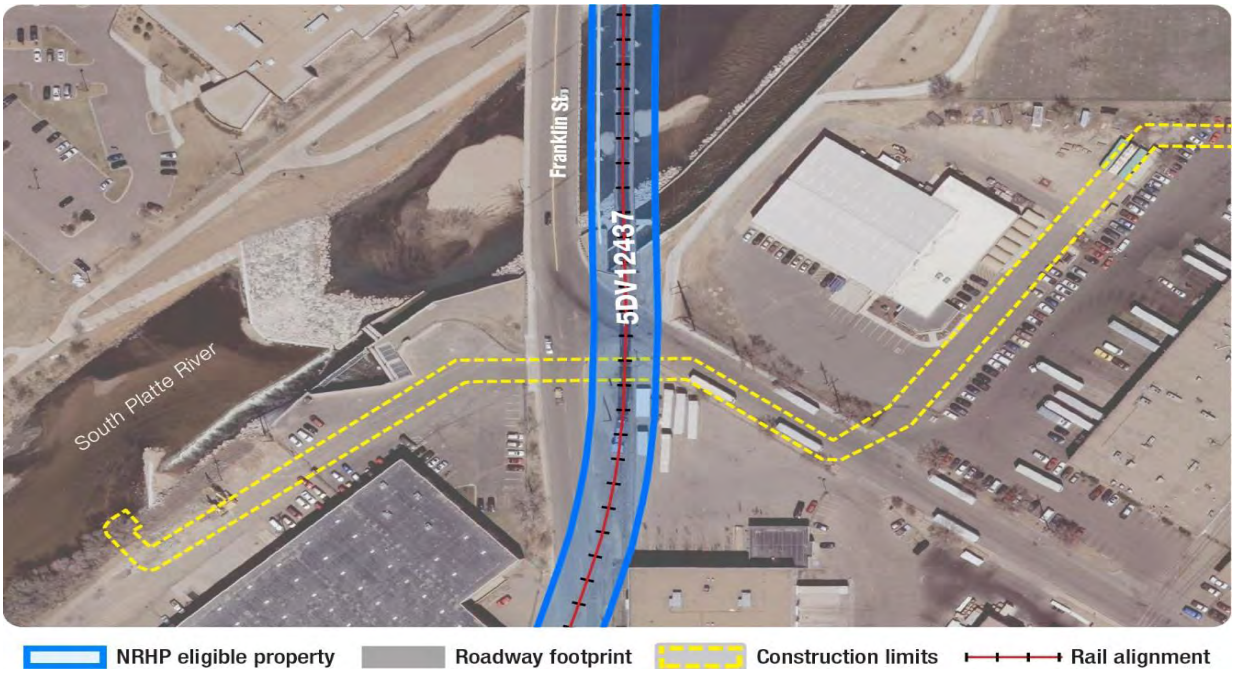
NWT Rail Spur

Constructed:	1913
Eligibility:	Segment is not eligible, larger resource unevaluated but assumed eligible under Criterion A
Type:	Railroad
Used by:	All Alternatives (*de minimis*)

All Alternatives

All alternatives would require a permanent easement measuring 575 square feet for this resource to place a stormwater drainage pipe (north onsite drainage) underneath the tracks (see **Exhibit 69)**. The pipe would be bored deep beneath the tracks and none of the features of the railroad would be modified to place the pipe; therefore, the work would not modify any of the character-defining features of the railroad or its ability to convey its significance. Since SHPO concurred in a finding of No Adverse Effect to the larger linear resource, FHWA makes a *de minimis* impact determination for the larger linear resource in accordance with Section 4(f). The impact determination includes all possible planning to minimize harm.

Exhibit 69 NWT Rail Spur—All Alternatives



Section 4(f) Summary of Uses and Least Overall Harm Discussion

Because there are no feasible and prudent alternatives that avoid the use of all Section 4(f) resources, an analysis must be performed to determine which alternative causes the least overall harm. FHWA may approve only the alternative that causes the least overall harm. This analysis was performed as part of the Final EIS and concluded that the Partial Cover Lowered Alternative is the least overall harm alternative. Although there are changes to some impacts and some new impacts created by the updated design, all but one of the additional impact determinations for Section 4(f) properties are *de minimis,* with Section 106 concurrence from SHPO on a finding of No Adverse Effect. By definition, *de minimis* impact determinations are negligible and do not require further minimization of harm or avoidance analysis. In several cases, the newly identified impacts are the same across all alternatives.

Five of the seven factors in the least overall harm analysis (23 CFR §§774.3(c)(1)(i)-(vii)) are unaffected by the changed or newly identified resources discussed previously in Section 10.1. The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection has not changed. The relative significance of each Section 4(f) property remains the same as described in the Final EIS. The design alterations do not alter the degree to which each alternative meets the purpose and need for the I-70 East Project. The magnitude of any adverse impacts to resources not protected by Section 4(f) remains the same, and there are no substantial differences in cost among the alternatives (see **Exhibit 82**).

One of the two criteria that warrants new discussion is the ability to mitigate impacts. The Partial Covered Lowered Alternative's revised drainage system provides significant mitigation for the use of Globeville Landing Park (see Section 10.2 below for updates to the text regarding the use of this park). The use is created by two open channels within the park, totaling 1.14 acres. The GLO Project provides a number of features for the park that provide greater public benefit. Once the GLO is constructed, the entire park would be rehabilitated, removing all existing park facilities and replacing them with enhanced park amenities that have been identified through public outreach efforts conducted by Denver. The GLO Project will add significant recreational space to the area, and provide for a more appealing setting than currently exists. There is also a new use of the Delgany Street Public Sanitary Sewer. Direct impacts to the sewer are completely resolved through actions specified in a Memorandum of Agreement between SHPO, USACE, and Denver. It includes Level II documentation and signage within the park. Impacts to brick-lined sewers are common enough in Denver that CDOT and SHPO have a PA that stipulates CDOTs mitigation without additional consultation, also resolving adverse effects. For these reasons, the Partial Lowered Covered Alternative provides the greatest opportunity to mitigate impacts, and remains the least overall harm alternative.

The second criteria that warrants new discussion is the view of officials with jurisdiction. All Section 106 consultation for impacts to historic Section 4(f) properties is complete and SHPO has concurred on all FHWA and CDOT determinations of eligibility and finding of

effect. Regarding the use of Globeville Landing Park, it is important to consider that Denver is the proponent of the GLO Project, including the Parks and Recreation Department. Not only have they concurred with FHWA and CDOT determinations pursuant to Section 4(f), but they are an active proponent and supporter of the GLO Project. Moreover, consultation with the National Park Service indicates that they consider the GLO Project to be park improvements. Therefore the Partial Covered Lowered Alternative has even greater support from officials with jurisdiction than it did as described in the Final EIS.

The considerations under the FAST Act, Section 11502, do not affect the least overall harm analysis for railroad and transit resources within the corridor because the I-70 East environmental process was initiated prior to the FAST Act taking effect in December 2015. Finally, there is no change to the differences in costs among the alternatives. For these reasons, the more detailed analysis presented in the Final EIS remains valid, and the FHWA has determined the Partial Cover Lowered Alternative to be the least overall harm alternative.

FHWA has determined that there is no feasible and prudent avoidance alternative and the Preferred Alternative includes all possible planning to minimize harm to the Section 4(f) properties resulting from such use. With the approval of this ROD, FHWA (based on consultation with the officials with jurisdiction and the public) finds that the selected Preferred Alternative remains the alternative with the least overall harm to the Section 4(f) properties.

10.2 Changes to the Final EIS Text of the Section 4(f) Evaluation

This section discusses the updates to the Section 4(f) analysis that require text changes to *Chapter 7, Section 4(f) Evaluation* of the Final EIS. The strikethrough text represents deletion of a word or a phrase from the Final EIS text while the underlined text shows the new text.

Page 7-15—Does the proposed project use any Section 4(f) properties? Last paragraph now reads

Since the Supplemental Draft EIS, additional design changes have modified the project area and changed impact determinations. Specifically, the drainage outfall north of I-70 has been moved south. This modification entirely avoids use of the South Platte River Greenway Trail and the Burlington Ditch. ~~The project has no use of these resources~~. <u>The South Platte River Greenway Trail would have a temporary occupancy south of I-70, within Globeville Landing Park</u>. Modifying the outfall does create a *de minimis* impact within the National Western Historic District.

Page 7-19—Use description for Partial Cover Lowered Alternative and Exhibit 7-6 now read:

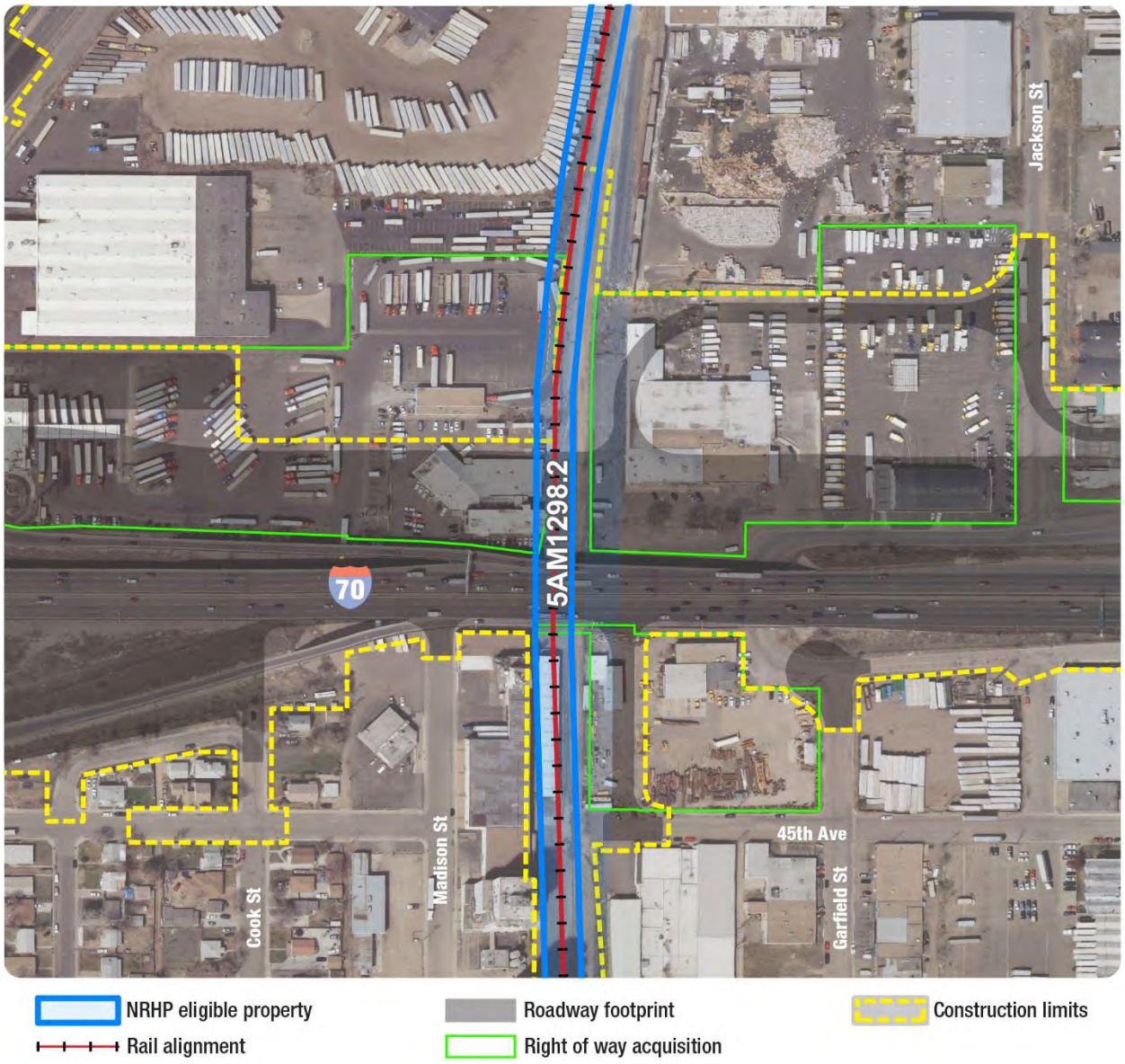
Market Street Railroad/Chicago, Burlington & Quincy Railroad Segment (5AM1298.2)

Partial Cover Lowered Alternative

The Partial Cover Lowered Alternative reconstructs I-70 below ground level. As a result, approximately ~~1,300~~ 2,000 feet of the existing tracks will be relocated onto two new bridges over I-70 (see **Exhibit 70**). The alternative eliminates the easternmost railroad track at its intersection with I-70, rather than placing it on the new bridges. However, the track will be maintained approximately 500 feet to the south of I-70 for the BNSF Railroad to continue its use for train storage.

This alternative requires both the permanent and temporary relocation of the railroad tracks to facilitate new bridge construction. The reconstruction and relocation of the tracks under this alternative will constitute an Adverse Effect under Section 106, and a direct use of the railroad by the Partial Cover Lowered Alternative.

Exhibit 70 Market Street Railroad/Chicago, Burlington & Quincy Railroad Segment—Partial Cover Lowered Alternative



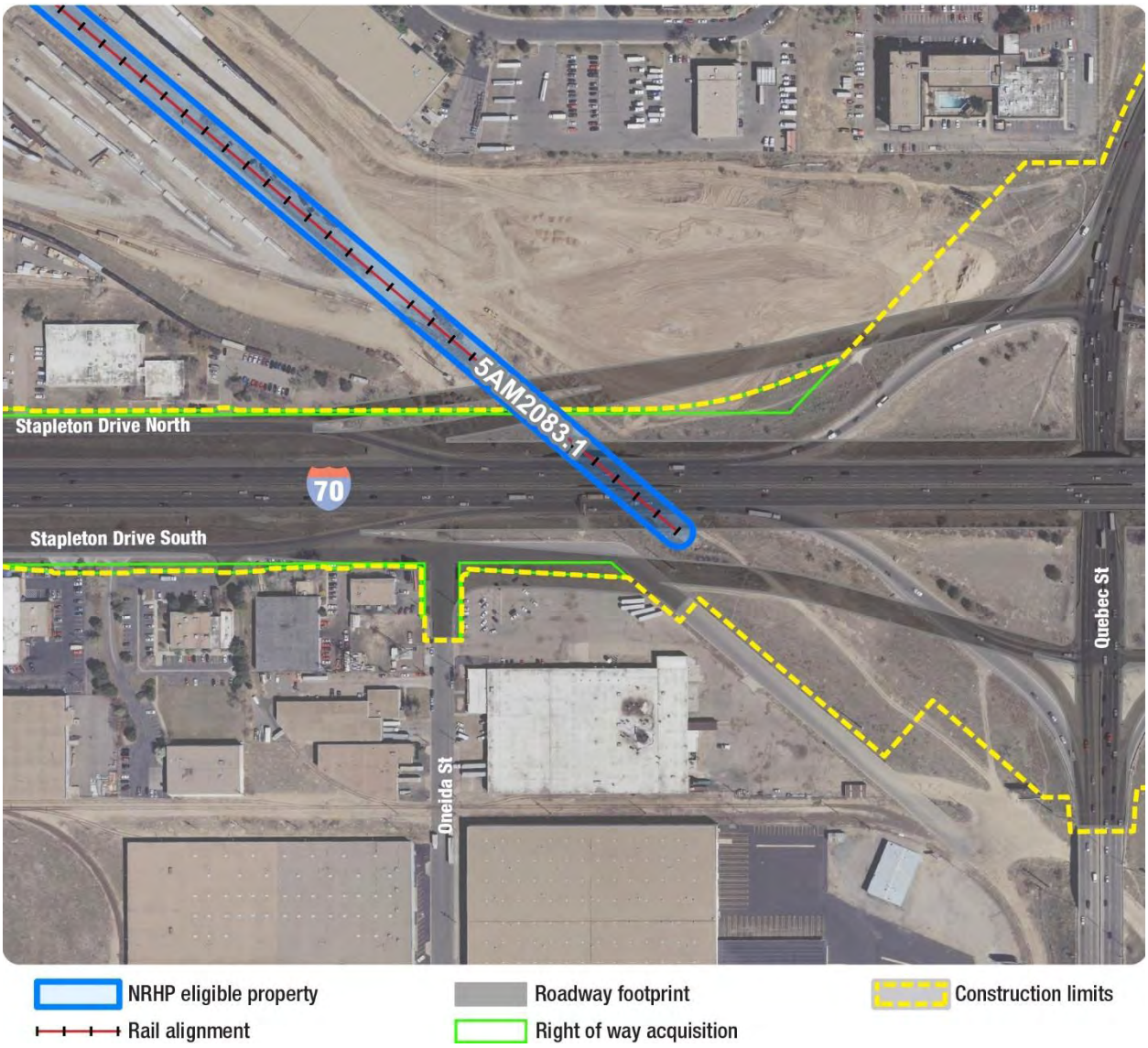
Page 7-23—Use description for Build Alternatives and Exhibit 7-7 now read:

Union Pacific Beltline Railroad Segment (Denver Rock Island Railroad, 5AM2083.1)

Build Alternatives

The Build Alternatives will construct a new I-70 bridge and westbound Quebec Street ramp bridge over the existing track. To facilitate overhead bridge construction, the project will require a construction easement on approximately ~~311 feet~~ 16,093 square feet of the railroad (see **Exhibit 71**).

Exhibit 71 Union Pacific Beltline Railroad Segment—Build Alternatives



Because the Build Alternatives will not diminish the integrity of the property's contributing characteristics, Section 106 consultation has determined the Build Alternatives will have No Adverse Effect to the railroad segment. Minimization efforts, as described in Section 7.10, result in a reduction in the overall footprint of the alternative. The railroad also will maintain its functionality throughout construction, as well as following project completion. There is no physical impact to the resource. The temporary construction easement could be considered a temporary occupancy. However, as indicated in the 2012 FHWA Section 4(f) Policy Paper, a *de minimis* impact determination may be made for a temporary occupancy of Section 4(f) property. Since SHPO concurred in a finding of No Adverse Effect, FHWA makes a *de minimis* impact determination for this resource in accordance with Section 4(f). The impact determination includes all possible planning to minimize harm.

Page 7-25—Resource description, use description, and exhibits now read:

Denver and Kansas Pacific/Union Pacific Railroad (5DV6248)

Within the project corridor, this railroad segment is located just west of the Nestlé Purina Petcare Company facility. The railroad passes underneath the I-70 viaduct via the UPRR bridge, which goes over 46th Avenue, and travels into the north Denver rail yards.

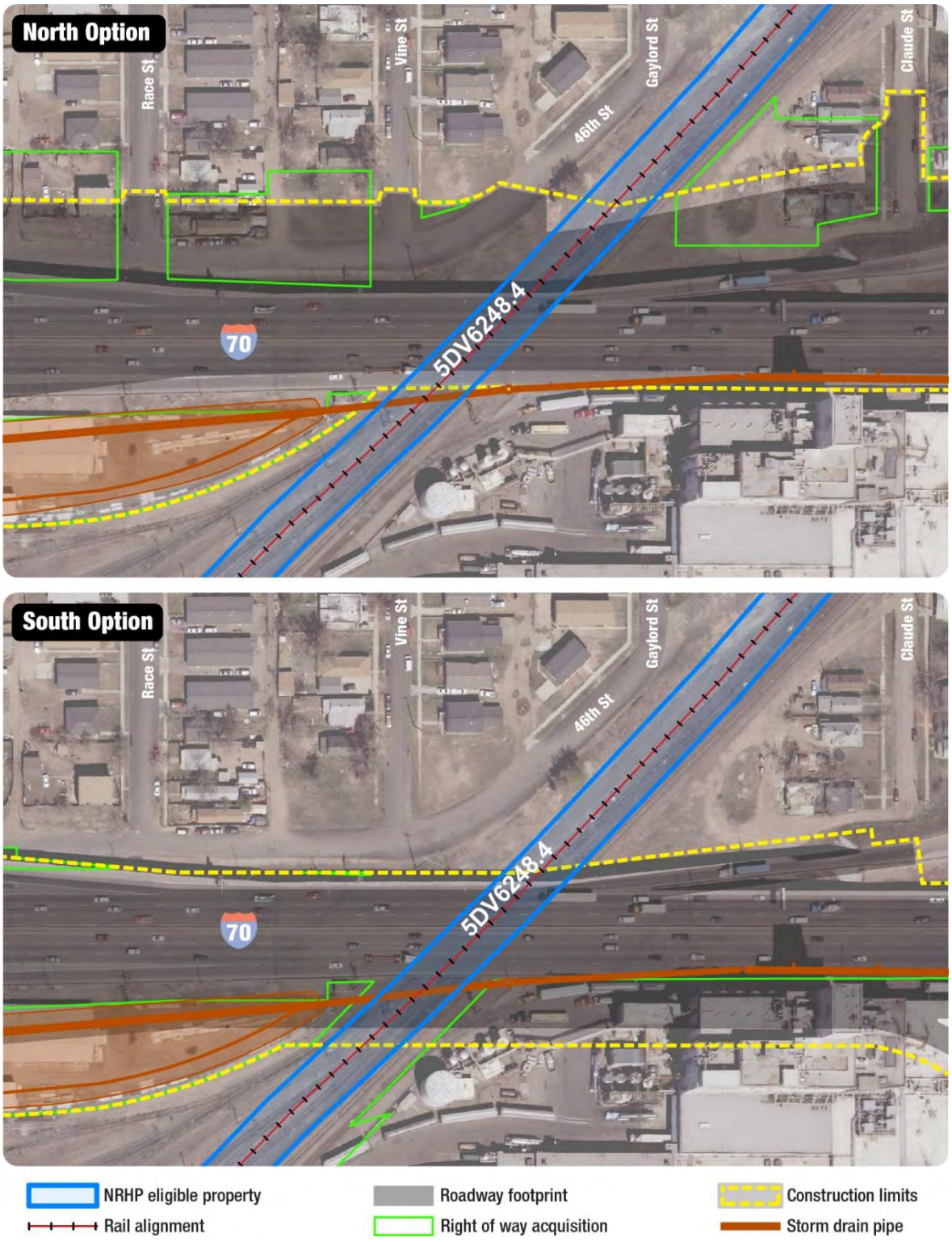
There are two segments of this railroad within the APE, indicated by decimals after the site number. The 5DV6248.4 segment is located just west of the Nestlé Purina Petcare Company facility. The railroad passes underneath the I-70 viaduct via the UPRR bridge, which goes over 46th Avenue, and travels into the north Denver rail yards. The last segment, 5DV6248.10, is a spur line off of the mainline, from a point just south of 46th Avenue and Race Street, to storage buildings located on Brighton Boulevard. It lacks significance and does not support the eligibility of the railroad.

No-Action Alternative

For both No-Action Alternative options, the existing UPRR bridge over 46th Avenue will remain in place. Reconstruction of the viaduct above the UPRR bridge will require a ~~construction~~ permanent easement ~~to make overhead viaduct construction easier. The easement will encompass roughly 210 feet of railroad, as reflected by the construction limits in Exhibit 7-8.~~ of approximately 300 linear feet along the UPRR right of way, which is approximately 31,100 square feet, for roadway work and any associated drainage elements, as presented in **Exhibit 72**. These improvements would only impact 5DV6248.4.

~~Because the easement and construction will not diminish the integrity of the property's contributing characteristics, the Section 106 determination is No Adverse Effect to the railroad. Minimization efforts, as described in Section 7.10, result in a reduction in the overall footprint of the alternative. The railroad also will maintain its functionality throughout construction, as well as following project completion. There is no physical impact to the resource. The temporary construction easement could be considered a temporary occupancy. However, as indicated on page 8 of the 2012 FHWA Section 4(f) Policy Paper, a *de minimis* impact determination may be made for a temporary occupancy of Section 4(f) property.~~ The proposed work, however, would not change or modify the current appearance of the railroad grade or any of the character-defining features, including the alignment or elevation. Although the integrity of the setting may be impacted, the integrity of design and association would remain and the proposed work would not impact the ability of the railroad to convey significance under Criterion A. Since SHPO concurred in a finding of No Adverse Effect, FHWA makes a *de minimis* impact determination for this resource in accordance with Section 4(f). The impact determination includes all possible planning to minimize harm.

Exhibit 72 Denver and Kansas Pacific/Union Pacific Railroad Segment—No-Action Alternative



Revised Viaduct Alternative

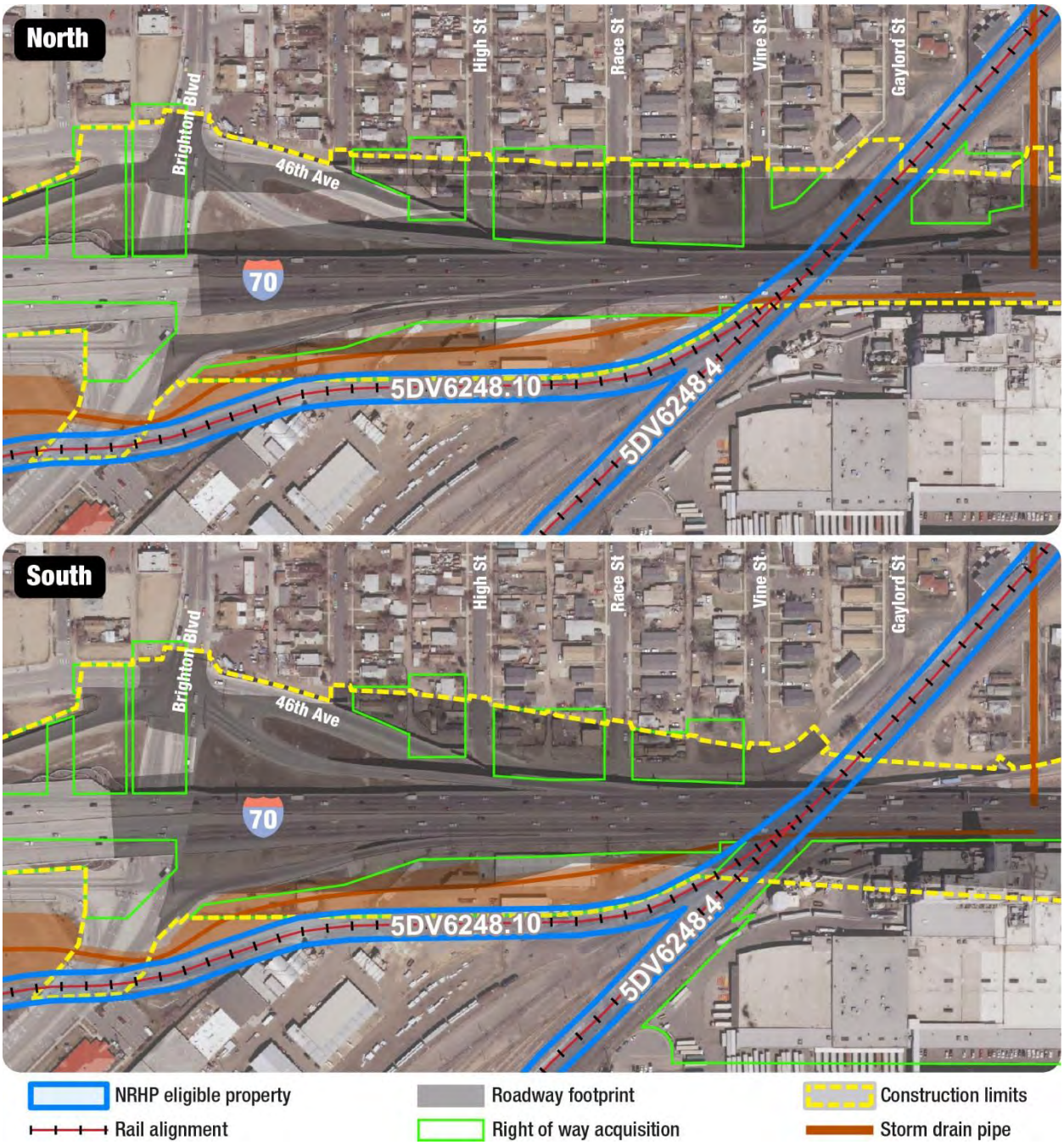
~~As with the No Action Alternative, the Revised Viaduct Alternative will require a construction easement over a portion of the railroad in the I-70 area to make overhead viaduct construction easier. Exhibit 7-9 displays the easement needed for the North Option (reflected as the construction limits), which encompasses 300 feet of the railroad. The exhibit also displays the construction easement of 300 feet of the railroad needed for the South Option.~~

The Revised Viaduct Alternative would require a permanent easement of 400 linear feet along the UPRR right of way, totaling roughly 40,800 square feet. In addition to the viaduct construction, a 72-inch storm drainpipe will be bored beneath the tracks at Claude Court, which will not result in any disturbance to track or ballast ~~have no track bed impacts. The bore locations will be outside historic right of way.~~ At this time, it is anticipated that no easements would be required within the historic right of way to facilitate construction or maintenance of the storm drainpipe and the bore location. **Exhibit 73** displays the easement needed for both the North and South Options (reflected as the construction limits), which encompasses 400 linear feet of the railroad. These improvements would impact 5DV6248.4. In addition, easements measuring approximately 1,552 square feet would be obtained from segment 5DV6248.10 to install new track panels at the crossing with Brighton Boulevard.

None of the improvements proposed under this alternative would diminish any of the character-defining features of the resource or impact its integrity of design, materials, workmanship, or association. The proposed work would impact a very small amount of a much larger linear resource, and the Union Pacific Railroad would retain its ability to convey its significance under Criterion A.

~~Since the affects to the resource will not diminish the integrity of the property's contributing characteristics, they result in a finding of No Adverse Effect to the railroad. Minimization efforts, as described in Section 7.10, result in a reduction in the overall footprint of the alternative. The railroad also will maintain its functionality throughout construction, as well as following project completion. There is no physical impact to the resource. The temporary construction easement could be considered a temporary occupancy. However, as indicated on page 8 of the 2012 FHWA Section 4(f) Policy Paper, a *de minimis* impact determination may be made for a temporary occupancy of Section 4(f) property.~~ Since SHPO concurred in a finding of No Adverse Effect, FHWA makes a *de minimis* impact determination for this resource in accordance with Section 4(f). The impact determination includes all possible planning to minimize harm.

Exhibit 73 Denver and Kansas Pacific/Union Pacific Railroad Segment—Revised Viaduct Alternative



Partial Cover Lowered Alternative

The Partial Cover Lowered Alternative will remove the existing viaduct and reconstruct I-70 below ground level ~~in this location~~ between Brighton Boulevard and Colorado Boulevard. Because of this, the existing bridge will be replaced with a multi-span bridge that will carry the railroad over the reconstructed I-70 and eastbound and westbound lanes of 46th Avenue. Temporary track relocation will be required for the new bridge construction. The work would impact 12,500 linear feet of tracks within the track yard located south of I-70, at segment 5DV6248.4, as shown in **Exhibit 74**. In addition, easements measuring approximately 1,552 square feet would be obtained from segment 5DV6248.10 to install new track panels at the crossing with Brighton Boulevard (**Exhibit 74**). A 480-square-foot permanent easement would be necessary from segment 5DV6248.5, east of Colorado Boulevard and north of Smith Road, for stormwater drainage infrastructure, as shown in **Exhibit 75**.

Improvements would be made to the intersection of East 47th Avenue, York Street, and the Union Pacific Railroad tracks. These improvements would result in the installation of crossing panels, warning devices with gates, pedestrian crossings, and an interconnection between the warning devices and the signals that would be placed at the East 47th Avenue intersection. In addition, approximately 130 feet of siding track immediately adjacent to the main line and located within a non-historic parcel north of the intersection of York Street and East 47th Avenue would be realigned. In addition, temporary easements totaling approximately 13.05 acres would be acquired from the railroad to construct temporary track relocation and construct new roadways, bridges, and drain elements (**Exhibit 74**).

The removal of the existing bridge, which currently carries the railroad over 46th Avenue, and the temporary relocation of the tracks necessary to complete the construction of the Partial Cover Lowered Alternative would change the current appearance of the railroad will constitute an Adverse Effect under Section 106, and a direct use for the Partial Cover Lowered Alternative. ~~As shown on Exhibit 7-10, this alternative will impact approximately 550 feet of the railroad.~~

In addition to the impacts described above, the GLO would cut a segment of 5DV6248.10 to place the pipe below it, and then replace it. SHPO concurred with No Adverse Effect. These impacts are minimal and do not change the overall determination of a use described above.

~~As with the Revised Viaduct Alternative, a storm drain will be bored beneath the railroad at Claude Court, which will have no track bed impacts. Also, a storm drain will either be bored under the railroad just west of the Nestlé Purina Petcare Company facility or will be constructed in phases to correspond with the track relocations. Bore locations are expected to be outside of historic right of way. No temporary or permanent easements are expected to be required for construction or maintenance of the storm drain pipe. As a result, the storm drain pipe is not expected to impact the railroad.~~

Exhibit 74 Denver and Kansas Pacific/Union Pacific Railroad Segment — Partial Cover Lowered Alternative

Exhibit 75 Denver and Kansas Pacific/Union Pacific Railroad Segment — Partial Cover Lowered Alternative

Page 7-31—Use description for Build Alternatives and Exhibit 7-11 now read:

Rocky Mountain Arsenal Railroad Segment (5DV7048.2)

Build Alternatives

The Build Alternatives will relocate a track spur and construct a new I-70 bridge and Havana Street ramp bridges over the relocated track spur. The relocation of the track will result in the direct use of ~~1,230~~ 2,100 feet of the railroad (see **Exhibit 76**). Construction of the new bridge will require line realignment and grade lowering to meet the clearance specifications of the new bridge and the railroad will be relocated approximately 180 feet west of its current location. The alteration of this segment of the historic railroad line will modify the historic grade. The relocation of the track, as well as lowering of the grade, will result in an Adverse Effect under Section 106 and a direct use of the resource by both the Revised Viaduct Alternative and the Partial Cover Lowered Alternative.

Exhibit 76 Rocky Mountain Arsenal Railroad Segment—Build Alternatives

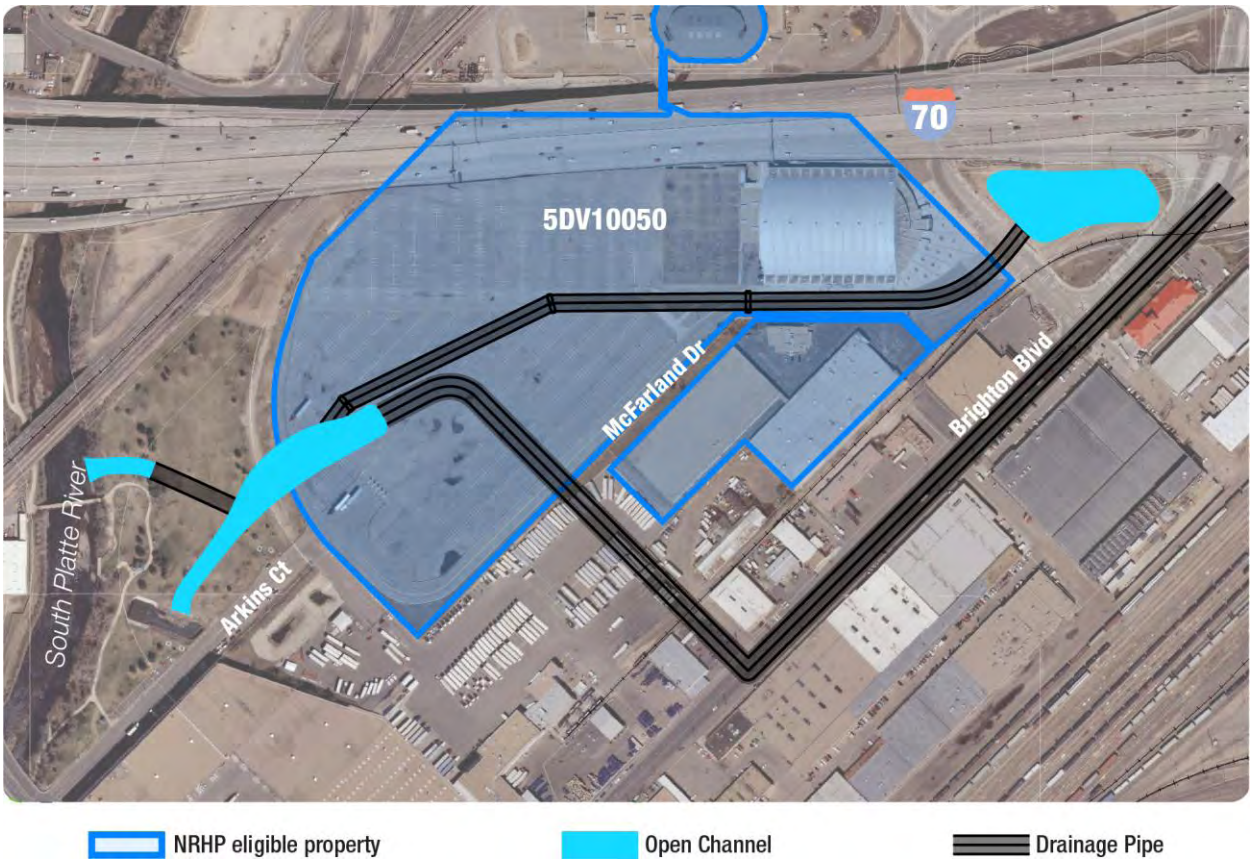
Page 7-79—Use description for the Partial Cover Lowered Alternative and Exhibit 7-39 now read:

National Western Historic District (5DV10050 includes 5DV3815, 5DV9162 [5DV9282], 5DV10059, 5DV10060 [5DV9163], 5DV10081, 5DV10082, and 5DV10447)

Partial Cover Lowered Alternative

In addition to the pipe described above, a stormwater outfall pipe would be installed within the district, south of I-70, which would be built south of the Denver Coliseum underneath the parking lot between the Coliseum and the South Platte River. The outfall system would result in the placement of a new stormwater pipe underneath the pavement, which is not original and has been re-paved as needed throughout the years. This would not change or modify the current appearance of the historic district or its contributing buildings. Temporary or permanent easements may be required, but there would be no ~~right of way~~ property acquisition of any portion of the historic district associated with the Partial Cover Lowered Alternative. The district would still retain its association with the commercial, economic, and social history of Colorado, and the diverse building styles and types would remain unaltered (**Exhibit 77**). Therefore, FHWA concluded that the Partial Cover Lowered Alternative would result in a determination of No Adverse Effect under Section 106, and a *de minimis* impact determination under Section 4(f). The impact determination includes all possible planning to minimize harm.

Exhibit 77 National Western Historic District—Partial Cover Lowered Alternative



Page 7-81—Use description for the Partial Cover Lowered Alternative and Exhibit 7-39 now read:

Banker's Warehouse Co (5DV11720)

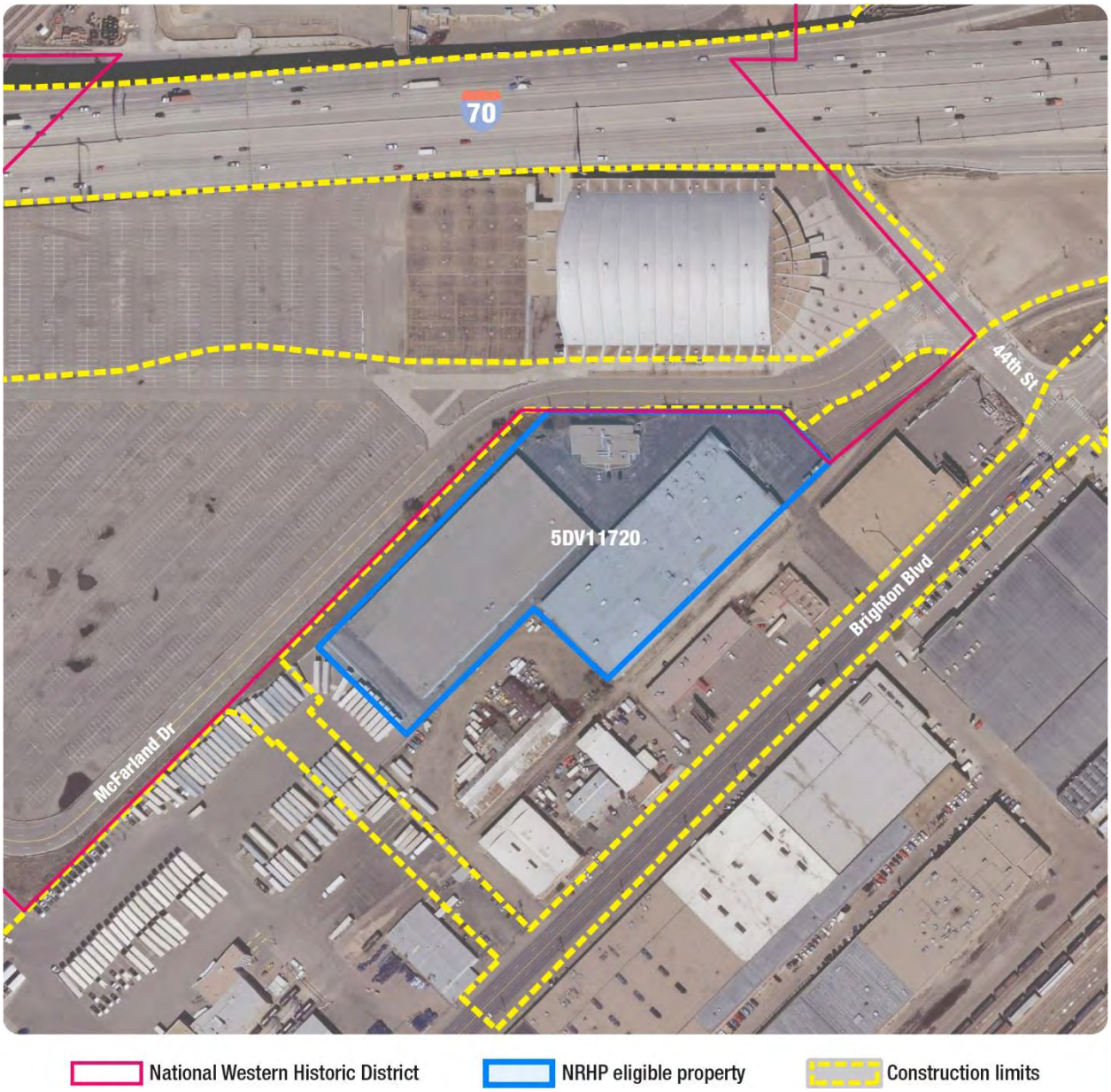
Partial Cover Lowered Alternative

This resource is located 987 feet from the existing viaduct. The highway west of Brighton Boulevard would remain in place and improvements associated with the Partial Cover Lowered Alternative structure would start east of Brighton Boulevard. There would be an acquisition of approximately ~~1,515~~ 1,524 square feet from the northwest corner of the resource to construct a retaining wall and box culvert (see **Exhibit 78**). The area where the acquisition will occur does not contain any historically significant features, is covered in overgrown grass, and sits on a lower topography than the buildings. The building closest to where the acquisition will occur, Building 3, is situated high atop a bluff and the wall and box culvert would not be visible from the building.

Because the improvements proposed under the Partial Cover Lowered Alternative would not impact any of the character-defining features of the property or diminish the integrity of the property's contributing characteristics, Section 106 consultation has determined that this alternative would result in a finding of No Adverse Effect. Therefore, FHWA makes a

de minimis impact determination ~~(**Exhibit 7-39**)~~. The impact determination includes all possible planning to minimize harm.

Exhibit 78 Banker's Warehouse—Partial Cover Lowered Alternative



Page 7-83—Use description for the Partial Cover Lowered Alternative, avoidance alternatives, and measures to minimize harm and Exhibit 7-41 are replaced with the following text and now read:

Globeville Landing Park

Partial Cover Lowered Alternative

The I-70 East Project's offsite drainage system includes construction of a storm drainage system south of I-70 that would capture water that flows toward the highway and then would convey it to the South Platte River to protect the lowered highway from flooding. This system includes a pipe that connects to the GLO. The GLO includes a redesign of Globeville Landing Park and the South Platte River Greenway Trail connection combined with a new stormwater open channel connecting to the South Platte River. Globeville Landing Park was always intended to function both as a park and as a site to manage stormwater entering the South Platte River.

Globeville Landing Park

Ownership:	City and County of Denver (Denver Parks and Recreation)
Open to public:	Yes
Amenities:	Plaza, picnic tables, South Platte River Trail, disc-golf course
Description:	Nine-acre park located adjacent to South Platte River and UPRR
Used by:	Partial Cover Lowered Alternative (use)

Globeville Landing Park encompasses 7.29 acres of park area. Two areas of the park—one location is 0.70 acre in size and the other is 0.44 acre in size (totaling 1.14 acres)—would be impacted by the construction of the GLO. Parkland acreage not affected by the GLO includes 6.15 acres (see **Exhibit 79**). The Partial Cover Lowered Alternative would not permanently impact any lands in addition to the 1.14 acres that the GLO will impact.

GLO improvements would rehabilitate the entire park, removing all existing park facilities and replacing them with park amenities that have been identified through public outreach efforts conducted by Denver.

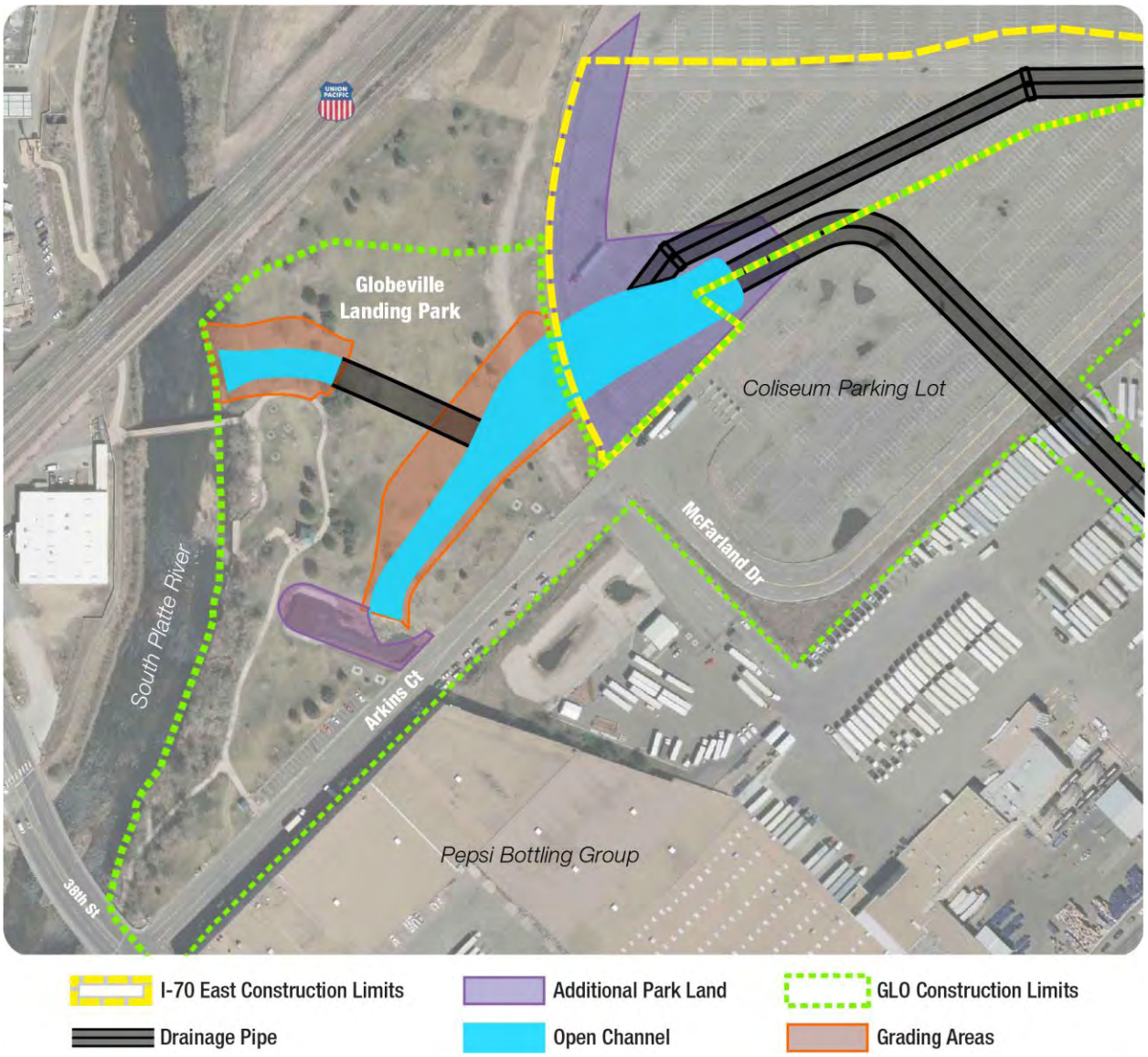
The 0.44-acre area is located in the northwest section of the park and slopes toward the South Platte River. One basket for the disc golf course is located in this area and the rest of the area is open field with a maintained lawn with limited recreational value because of moderately steep topography.

The 0.70-acre area, located on the east side of the park, is relatively flat. It has one basket for the disc golf course and two picnic tables in this area.

The construction of the GLO would result in the replacement of two picnic tables and portions of the disc golf course as part of the rehabilitation of the park that includes replacement and construction of these and other amenities. The enhancements to the park will result in temporary closure of the South Platte River Greenway Trail connection within the park, which will be reconstructed and reopened when the rehabilitation is complete. The proposed project will result in temporary disturbances to Globeville Landing Park and the South Platte River Greenway Trail connection due to construction of the enhancements to the park. However, the park and the trail connection will be improved and reopened for public use after construction is complete. A trail detour will be in place during construction with adequate signage.

Therefore, these activities will meet the requirements of the Department of Transportation Act of 1966 Section 4(f) enhancement exception in 23 CFR 774. l 3(g).

Exhibit 79 Globeville Landing Park—Partial Cover Lowered Alternative, Denver GLO Project



The I-70 East Project's redesigned drainage system requires some additional grading within one of the open channels; however, it does not have additional permanent impacts to the Globeville Landing Park aside from the 1.14 acres of impact discussed previously.

Avoidance alternatives

The No-Action and Revised Viaduct Alternatives avoid use of this property. Although the alternatives avoid this resource, they use other Section 4(f) resources. Other alternatives that avoid this property were eliminated because they were not considered feasible and prudent, and are summarized in Section 7.9.

Routing the storm drain pipe to the north of Globeville Landing Park through the UPRR right of way was considered as an avoidance alternative. Due to the invert elevation and presence of two historic brick sanitary sewer lines, the storm drain pipe will need to be buried approximately 40 feet below ground level at the UPRR crossing. This depth will not allow for the pipe to outfall to the river, and so is not prudent.

Moreover, the pipe cannot connect to existing storm drains or ponds, because the existing storm drains do not have capacity to convey large flows required to protect the lowered section of I-70. To upsize the existing drainage facilities which currently include a pond and a concrete drop structure in Globeville Landing Park to convey the large flows needed to protect I-70 East would approximately double the size of the existing pond and drop structure causing a large impact to the park, therefore upsizing the existing drainage facilities is not a feasible and prudent avoidance alternative ~~was not pursued~~.

Measures to minimize harm

Overall minimization efforts were implemented in the design of each alternative and associated option to minimize impacts to adjacent properties, which in turn also minimizes the use of a number of Section 4(f) properties.

~~To minimize the use of the park, an alignment north of the South Platte River Greenway Trail and bridge over the South Platte River was selected for the storm drainage system through the park. This alignment also avoids placement of storm manhole lids within the park, which will permanently use the park. Most of this alignment option is a temporary disturbance to the park, and the permanent easement will be available for recreational use following construction, with the exception of constructing a 0.3-acre spillway. To offset this impact, the 0.3 acre of the park permanently converted to a transportation use will be replaced in-kind with land of at least current fair market value and of reasonable equivalent usefulness and location.~~

Temporary impacts to Globeville Landing Park due to the GLO and enhancements to the park will be minimized by providing adequate notice and signing to the park users prior to construction. Temporary impacts associated with the regrading within one of the open channels by CDOT will be minimized by providing adequate notice and signing to the park users prior to construction. Following construction, areas of temporary disturbance to the park will be enhanced or returned to pre-construction conditions.

Exhibit 7-6 now reads:

Exhibit 80 Summary of Section 4(f) Property Uses and Changes

Historic Resource Property Name and Address	No-Action Alternative		Revised Viaduct Alternative		Partial Cover Lowered Alternative (Preferred Alternative)
	North Option	South Option	North Option	South Option	
Market Street Railroad/ Chicago Burlington & Quincy Railroad Segment (5AM1298.2)	*De minimis.* Temporary easement on 210 square feet of railroad.		*De minimis.* Reconstruct tracks; temporary easement on 295 square feet (North Option) to 335 square feet (South Option) of railroad.		Use. Relocate 2,000 ~~1,300~~ linear feet of track onto two new bridges; eliminate easternmost track.
Union Pacific Beltline Railroad Segment (Denver Rock Island Railroad) (5AM2083.1)	No use.	No use.	*De minimis.* Temporary easement on 16,093 ~~311~~ square feet of railroad.		
Delgany Street Public Sanitary Sewer (5DV4725)	No Use				Use. Impact 75-foot wide section of sewer.
Denver and Kansas Pacific/Union Pacific Railroad (5DV6248)	*De minimis.* Temporary easement on 31,100 ~~210~~ square feet.		*De minimis.* Temporary easement on 40,800 ~~300~~ square feet.		Use. Temp relocation of~~; easement on 550 feet of railroad~~ 12,500 linear feet, and approximately 2,000 square feet of permanent easements. Impacts to other segments are negligible.
Rocky Mountain Arsenal Railroad Segment (5DV7048.2)	No use.	No use.	Use. Relocate 2,100 ~~1,230~~ linear feet of spur track and change historic grade.		
York Street/East 40th Ave. Brick Sanitary Sewer (5DV11283)	No use.	No use.	No use.	No use.	Use.
Colonial Manor Tourist Court 2615 East 46th Avenue (5DV7130)	Use. Full acquisition.	No use.	Use. Full acquisition.	No use.	Use. Full acquisition.
Univar 4300 Holly Street (5DV9231)	No use.	No use.	*De minimis.* 0.03 acre of right-of-way acquisition.		
Safeway Distribution Center Historic District (5DV9232)	No use.	No use.	*De minimis.* Acquire 2.1 acres of the district.	*De minimis.* Acquire 2.5 acres of the district.	*De minimis.* Acquire 2.1 acres of the district.
Ralston Purina Plant/Nestlé Purina PetCare Company 2151 East 45th Avenue (5DV9245)	No use.	Use. Full acquisition.	No use.	Use. Full acquisition.	~~No Use.~~ *De minimis.* 735 square feet acquisition, additional 890 square feet of permanent easement.
Sanchez Business 2381 East 46th Avenue (5DV9655)	Use. Full acquisition.	No use.	Use. Full acquisition.	No use.	Use. Full acquisition.
Stop-N-Shop Food Store 4600 York Street (5DV9801)	Use. Full acquisition.	No use.	Use. Full acquisition.	No use.	Use. Full acquisition.
Brown and Alarid Residence 4637 Claude Court (5DV9667)	No use.	No use.	No Use.	No use.	Use. Full acquisition.
Toth/Kelly Residence 4639 Claude Court (5DV9668)	No use.	No use.	No use.	No use.	Use. Full acquisition.

Exhibit 80 Summary of Section 4(f) Property Uses and Changes

Historic Resource Property Name and Address	No-Action Alternative		Revised Viaduct Alternative		Partial Cover Lowered Alternative (Preferred Alternative)
	North Option	South Option	North Option	South Option	
Rodriquez Residence 4539 Clayton Street (5DV9678)	No use.	No use.	No use.	Use. Full acquisition.	No use.
4541 Clayton LLC Residence 4541 Clayton Street (5DV9679)	No use.	No use.	No use.	Use. Full acquisition.	No use.
Rudy/Bernal Residence 4618 High Street (5DV9735)	Use. Full acquisition.	No use.	Use. Full acquisition.		Use. Full acquisition.
Garcia Residence 4617–4625 Race Street (5DV9780)	Use. Full acquisition.	No use.	Use. Full acquisition.		Use. Full acquisition.
Kenworthy/Wyckoff Residence 4529 Josephine Street (5DV9745)	No use.	No use.	No use.	Use. Full acquisition.	No use.
Portales Residence 4608 Josephine Street (5DV9746)	Use. Full acquisition.	No use.	Use. Full acquisition.	No use.	Use. Full acquisition.
Alfred R. Wessel Historic District (5DV10126)	Use. Fully acquire two contributing properties.	No use.	Use. Fully acquire seven contributing properties.	Use. Acquire 0.032 acre from two contributing properties.	Use. Fully acquire nine contributing properties.
National Western Historic District (5DV10050)	*De minimis.* Permanent easement over stormwater pipe within district.				*De minimis.* Two permanent easements over stormwater pipes within district.
Banker's Warehouse Co. (5DV11720)	No use.	No use.	No use.	No use.	*De minimis.* Acquisition of approximately 1,524 ~~1,515~~ square feet to construct a retaining wall and box culvert.
Chicago, Burlington and Quincy Railroad/Burlington Northern & Santa Fe Railroad (5DV6247)	*De minimis* 4,188 square feet of permanent easement for segment 5DV6247.3				
NWT Rail Spur (5DV12437.1)	*De minimis* 575 square feet of permanent easement.				
RLW Sand Company 4390 Madison Street (5DV12304)	No use.	No use.	No use.	No use.	*De minimis.* 7,600 square feet of temporary easement.
High Tech Early College/STRIVE Prep 11200 East 45th Avenue (5DV12320)	No use.	No use.	*De minimis.* 13,730 square feet acquisition.		
Parks and Recreational Resources	**No-Action Alternative**		**Revised Viaduct Alternative**		**Partial Cover Lowered Alternative (Preferred Alternative)**
	North Option	**South Option**	**North Option**	**South Option**	
Swansea Elementary School Playground	Use. Acquire 0.39 acre of school property.	No use.	Use. Acquire 0.76 acre of school property.	No use.	Use. Acquire 0.95 acre of school property.

Exhibit 80 Summary of Section 4(f) Property Uses and Changes

Historic Resource Property Name and Address	No-Action Alternative		Revised Viaduct Alternative		Partial Cover Lowered Alternative (Preferred Alternative)
	North Option	South Option	North Option	South Option	
Globeville Landing Park	No use.	No use.	No use.	No use.	Use. South offsite drainage from the GLO uses 1.14 acres for open channel. The rest of the park would be completely expanded with all new amentities. ~~Storm drainage system temporarily disturbs and places permanent easement on 0.5 acre of the park; of this, 0.3 acre will be permanently impacted for spillway construction.~~
South Platte River Greenway Trail	No use	No use	No use	No use	Temporary occupancy of trail connection within Globeville Landing Park during construction.

Exhibit 7-49 now reads:

Exhibit 81 Section 4(f) Historic Resources Uses

Category	No-Action Alternative		Revised Viaduct Alternative		Partial Cover Lowered Alternative
	North Option	South Option	North Option	South Option	
Total Section 4(f) Uses[1]	12 ~~10~~	6 ~~4~~	17 ~~14~~	17 ~~14~~	24 ~~18~~
De minimis impact determination	5 ~~3~~	5 ~~3~~	9 ~~6~~	9 ~~6~~	10 ~~5~~
Historic resources used (greater than *de minimis)*	7	1	8	8	14
Historic resources used (greater than *de minimis)* due to acquisition/demolition[2]	7	1	7	6	9
Alfred R. Wessel Historic District contributing property acquisitions	2 full acquisitions	—	7 full acquisitions	2 partial acquisitions	9 full acquisitions

Note: Historic districts are presented as one Section 4(f) resource; individual contributing properties to historic districts are not included in this total

1 Total Section 4(f) Uses includes de minimis impact determinations

2 Uses generally consist of full acquisition and demolition of historic structures, except in the instance of linear resources. This total also includes the Alfred R. Wessel Historic District as one resource.

Exhibit 7-51 now reads:

Exhibit 82 Summary of Least Overall Harm Analysis

Factor	Revised Viaduct Alternative		Partial Cover Lowered Alternative	Managed Lanes Option	Factor Summary
	North Option	South Option			
1: Ability to mitigate adverse impacts to Section 4(f) properties	• No discernible difference between alternatives for historic resources and Globeville Landing Park mitigation • Redesigns school playground and increases size, but may not mitigate for impacts due to potential for school relocation	• No discernible difference between alternatives for historic resources and Globeville Landing Park mitigation • No mitigation required for school playground	• No discernible difference between alternatives for historic resources ~~and Globeville Landing Park mitigation~~ • Redesigns school playground, increasing its size, and adds as much as four acres of open space on a highway cover • Rehabilitates Globeville Landing Park with all new amenities, and an increase in recreational park space	No additional impacts or mitigation required with this option	• Differentiation between alternatives is with regard to the Swansea Elementary School Public Playground, Delgany Street Public Sanitary Sewer and Globeville Landing Park • Partial Cover Lowered Alternative best mitigates adverse effects because, while it does use the public playground as opposed to the Revised Viaduct Alternative, South Option, it ultimately improves the playground by increasing the size of the playground and adding open space for recreational use • No difference between General-Purpose and Managed Lanes Options
2: Relative severity of remaining harm after mitigation	• Severity of remaining harm will be the same among project alternatives for historic resources and Globeville Landing Park • Severity of harm after mitigation will be high if the school requires relocation	• Severity of remaining harm will be the same among project alternatives for historic resources and Globeville Landing Park • No encroachment on the school property; therefore, no harm	• Severity of remaining harm will be the same among project alternatives for historic resources and Globeville Landing Park • Severity of harm after mitigation will be low at the public playground	No additional impacts to Section 4(f) properties or mitigation required with this option	Severity of remaining harm after mitigation is the least with the Revised Viaduct Alternative, South Option, due to its avoidance of Swansea Elementary School Public Playground and Globeville Landing Park

Exhibit 82 Summary of Least Overall Harm Analysis

Factor	Revised Viaduct Alternative		Partial Cover Lowered Alternative	Managed Lanes Option	Factor Summary
	North Option	South Option			
3: Relative significance of each Section 4(f) property	Contributing elements to the historic district are considered less significant, relative to other Section 4(f) properties that are eligible as individual resources	Contributing elements to the historic district are considered less significant, relative to other Section 4(f) properties that are eligible as individual resources	Contributing elements to the historic district are considered less significant, relative to other Section 4(f) properties that are eligible as individual resources	Contributing elements to the historic district are considered less significant, relative to other Section 4(f) properties that are eligible as individual resources	Contributing elements to the historic district are considered less significant, relative to other Section 4(f) properties that are eligible as individual resources
4: Views of officials with jurisdiction	• Denver Public Schools does not support this option due to its proximity to the school • No other officials with jurisdiction have expressed a view for or against this option	No preference for or against the option has been made by officials with jurisdiction.	• Denver and Denver Public Schools have stated a preference for the Partial Cover Lowered Alternative. • City and County of Denver are the proponent of the GLO Project, and Parks is supportive of the GLO Project. • No other officials with jurisdiction have expressed a view for or against this alternative and associated option	No preference for or against the option has been made by officials with jurisdiction	Those officials with jurisdiction, who have stated a preference, prefer the Partial Cover Lowered Alternative. No officials with jurisdiction have stated a preference between General-Purpose and Managed Lanes
5: Ability to meet purpose and need	Future peak travel periods and percentage of congestion similar for all build options	Future peak travel periods and percentage of congestion similar for all build options	• Future peak travel periods and percentage of congestion similar for all build options • This option provides additional pedestrian safety and shorter crossings of 46th Avenue	Further improves future peak travel periods and percentage of congestion when added to other build options	The Partial Cover Lowered Alternative with Managed Lanes Option is the least harm because it best meets the purpose and need through reducing peak travel periods and percentage of congestion

Exhibit 82 Summary of Least Overall Harm Analysis

Factor	Revised Viaduct Alternative		Partial Cover Lowered Alternative	Managed Lanes Option	Factor Summary
	North Option	South Option			
6: Magnitude of impacts on non-Section 4(f) resources	**Relocations and Land Use Acquisition**: ~~53~~ 52 business and residential relocations, 40.6 acres **Noise**: Impacts 562 receivers **Visual and Aesthetics**: Poor balance of unity, intactness, and vividness; improves aesthetics by replacing existing viaduct, but increases visible mass over existing conditions **Social Impacts**: Least impact to neighborhood character (due to fewer ROW acquisitions and relocations); increases impacts to neighborhood cohesion by increasing viaduct footprint **Environmental Justice**: Disproportionate high and adverse impacts to low-income or minority population, but mitigation measures will offset these impacts	**Relocations and Land Use Acquisition**: ~~71~~ 70 business and residential relocations, 41.9 acres **Noise**: Impacts 511 receivers **Visual and Aesthetics**: Poor balance of unity, intactness, and vividness; improves aesthetics by replacing existing viaduct, but increases visible mass over existing conditions **Social Impacts**: Moderate impact to neighborhood character (due to ROW acquisition and relocations); increases impacts to neighborhood cohesion by increasing viaduct footprint **Environmental Justice**: Disproportionate high and adverse impacts to low-income or minority population, but mitigation measures will offset these impacts	**Relocations and Land Use Acquisition**: ~~74~~ 73 business and residential relocations, 66.6 acres (81.3 with managed lanes) **Noise**: Impacts ~~178~~ 187 receivers **Visual and Aesthetics**: High balance of unity, intactness, and vividness; best improves aesthetics by removing existing viaduct and minimizing visual obstruction through a below-ground highway; improves overall aesthetics through ~~four-acre~~ public ~~park/open~~ space land use on cover **Social Impacts**: Greatest impact to neighborhood character (due to ROW acquisition and relocations), but greatest improvement on neighborhood cohesion through removal of viaduct **Environmental Justice**: Disproportionate high and adverse impacts to low-income or minority population, but mitigation measures will offset these impacts	**Land Use Acquisition**: Minor increase in land acquisition (14.7 acres) No substantial increase in impacts to non-Section 4(f) resources with this option	Overall magnitude of non-Section 4(f) resource impacts generally is lowest under the Partial Cover Lowered Alternative Magnitude of impacts between the General-Purpose and Managed Lanes Options is negligible
7: Substantial cost differences	$1,330 million ($1,450 million with managed lanes)	$1,450 million ($1,570 million with managed lanes	$1,580 million ($1,700 million for managed lanes)	Additional $100-130 million	There is no substantial cost difference between the project alternatives

10.3 Central 70 Section 4(f) Evaluation

The Central 70 Project uses are the same as the Partial Cover Lowered Alternative uses, as discussed in the Final EIS and in this chapter, with two exceptions: under the Central 70 Project, there will be no use of the Rocky Mountain Arsenal railroad and High Tech Early College/STRIVE Prep with the Central 70 Project.

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