

# ENVIRONMENTAL ASSESSMENT FOR THE

## 6th Avenue Parkway Extension

City of Aurora, Colorado

### Lead Agencies

Federal Highway Administration

Colorado Department of Transportation



**COLORADO**  
Department of Transportation

**June 2016**

**ENVIRONMENTAL ASSESSMENT SIGNATURES**

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## STATUTE OF LIMITATIONS

The Federal Highway Administration may publish a notice in the Federal Register, pursuant to 23 United States Code (USC) § 139(l), when a final decision has been made. 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.

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More information on the project is available on the project webpage at: [www.auroragov.org/6thaveparkway](http://www.auroragov.org/6thaveparkway)

## PUBLIC COMMENT PERIOD

The public comment period for this document begins June 30, 2016 and ends July 30, 2016. Written comments on this document can be submitted at the public meeting, or by mail or email to the contacts listed above, or to the project email at [6thavepkwy@fhueng.com](mailto:6thavepkwy@fhueng.com)

## PUBLIC MEETING

A public meeting will be held at the Beck Recreation Center, 800 Telluride Street, Aurora, CO 80011 on Thursday, July 14, 2016 from 6:00 pm to 8:00 pm.

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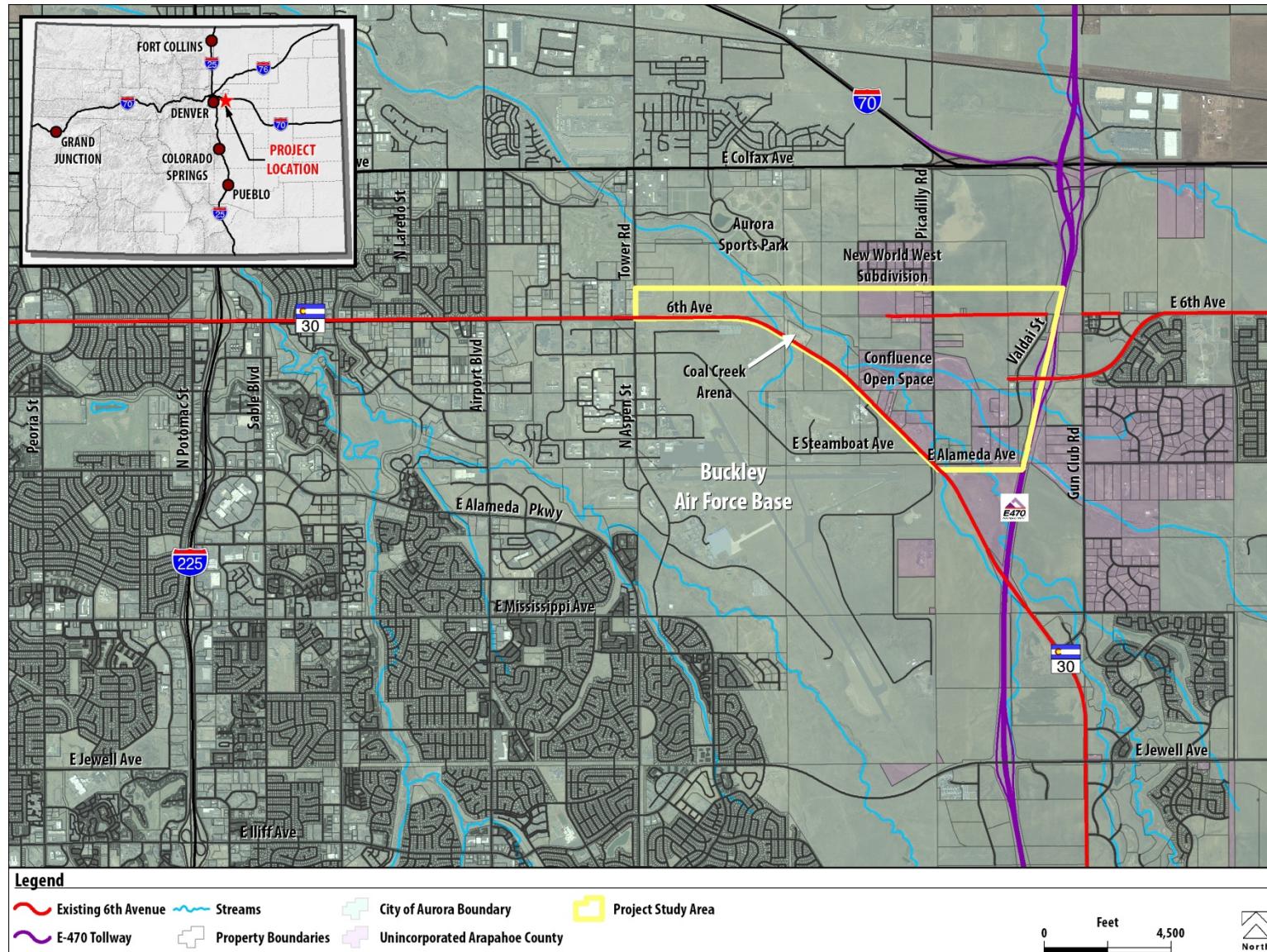
ACM	Asbestos Containing Material	I-70	Interstate 70
AFB	Air Force Base	LCP	Lead Containing Paint
APE	Area of Potential Effect	LOS	Level of Service
BMP	Best Management Practice	MSAT	Mobile Source Air Toxics
CDOT	Colorado Department of Transportation	NAC	Noise Abatement Criteria
CDPHE	Colorado Department of Public Health and Environment	NEPA	National Environmental Policy Act
CFR	Code of Federal Regulations	PMT	Project Management Team
CLOMR	Conditional Letter of Map Revision	PROS	City of Aurora Parks Recreation and Open Space
CPW	Colorado Parks and Wildlife	SB	Senate Bill
dBA	A-weighted decibels	SH 30	State Highway 30
DRCOG	Denver Regional Council of Governments	SHPO	State Historic Preservation Officer/History Colorado
E-470	E-470 Tollway	SWMP	Stormwater Management Plan
EA	Environmental Assessment	TWG	Technical Working Group
FACWet	Functional Assessment of Colorado Wetlands	UDFCD	Urban Drainage and Flood Control District
FEMA	Federal Emergency Management Agency	USACE	United States Army Corps of Engineers
FHU	Felsburg Holt & Ullevig	USC	United States Code
FHWA	Federal Highway Administration	USEPA	United States Environmental Protection Agency
GOCO	Great Outdoors Colorado	USFWS	United States Fish and Wildlife Service

## INTRODUCTION

The City of Aurora, in consultation with the Federal Highway Administration (FHWA) and the Colorado Department of Transportation (CDOT), is proposing to construct the 6<sup>th</sup> Avenue Parkway extension along a new roadway alignment between State Highway (SH 30) and the 6<sup>th</sup> Avenue Parkway/E-470 Tollway (E-470) interchange. This Proposed Action is located in the northeastern portion of Aurora, Colorado and falls partially within Aurora and partially within unincorporated Arapahoe County. The Proposed Action would close an almost two-mile gap in the major arterial street system, and would include a crossing of Sand Creek and its associated floodplain. This project has been identified in previous planning studies dating back as early as 1986 and has been identified as a priority project by the Aurora City Council.

Within the study area (**Figure 1**), 6<sup>th</sup> Avenue currently exists as three disconnected segments. From the west, 6<sup>th</sup> Avenue (also known as SH 30) is a major arterial extending across the Denver Metro area, including Aurora. As it traverses the study area from the west, 6<sup>th</sup> Avenue currently intersects with Tower Road and then heads to the southeast as SH 30, crossing over E-470, and eventually intersecting with Gun Club Road. Another short rural segment of 6<sup>th</sup> Avenue is present in the central portion of the study area where it intersects and extends east and west from Picadilly Road, providing access to local residences. The eastern edge of the study area is bordered by the E-470 Toll Road and the E-470 interchange with 6<sup>th</sup> Avenue Parkway, which extends east from E-470, providing access to residential subdivisions to the east.

Figure 1 Location Map



The City of Aurora prepared previous planning studies dating back to 1986 that evaluated the extension of 6<sup>th</sup> Avenue. These plans are summarized in **Table 1**. Information from these studies was referred to as alternatives were developed and screened for this Environmental Assessment (EA).

**Table 1 Previous Planning Studies Incorporated into Alternative Development**

Study	Date	Finding
<i>Comprehensive Plan, City of Aurora (City of Aurora)</i>	1986	An extension of 6 <sup>th</sup> Avenue east of existing 6 <sup>th</sup> Avenue is depicted in the plan as an expressway.
<i>Preliminary Alignment Study for East 6<sup>th</sup> Avenue from State Highway (SH) 30 to 3000 feet East of Gun Club Road (Nolte and Associates, Inc)</i>	April 1996, Revised March 1997	Four initial alignments were identified and evaluated in the study. Each of them connected to SH 30 and extended east to E-470. Several alternatives continued improvements east from E-470 to Gun Club Road eventually reconnecting with 6 <sup>th</sup> Avenue east of E-470. One alternative and one modified alternative were favored for further evaluation. However, at the time of conclusion of this study, the location of the E-470/6 <sup>th</sup> Avenue interchange had not yet been determined.
<i>Conceptual Phase II Alignment Study (Nolte and Associates, Inc)</i>	December 1997, Revised July 1998	This study identified one preferred alignment for 6 <sup>th</sup> Avenue that extended directly west from the 6 <sup>th</sup> Avenue/E-470 interchange, south of the Confluence Open Space, eventually connecting with SH 30. This alignment assumed that the 6 <sup>th</sup> Avenue/E-470 interchange would be located directly east of the existing 6 <sup>th</sup> Avenue. A preliminary alignment was selected after it was determined that the 6 <sup>th</sup> Avenue/E-470 interchange was to be located one-half mile south of the existing 6 <sup>th</sup> Avenue alignment making the initial preferred alignments not feasible. This interchange was situated at this location due to spacing requirements between interchanges set by FHWA and CDOT.

Aurora has worked in coordination with FHWA, CDOT, and Denver Regional Council of Governments (DRCOG) to advance the 6<sup>th</sup> Avenue Parkway extension through the planning process toward ultimate project design and construction. The 6<sup>th</sup> Avenue Parkway extension project is included in the current *DRCOG 2040 Fiscally Constrained Regional Transportation Plan*, adopted February 18, 2015 (DRCOG, 2015a). Through this regional transportation planning process, the project is included in the DRCOG Carbon Monoxide and Particulate Matter Air Quality Conformity Determination and the Denver Southern Subarea 8-hour Ozone Conformity Determination (DRCOG, 2015b).

## WHAT IS THE PURPOSE OF THE PROJECT?

The purpose of this project is to enhance east-west mobility by implementing a transportation solution that will close a critical gap between SH 30 and E-470 in the regional transportation network of northeastern Aurora.

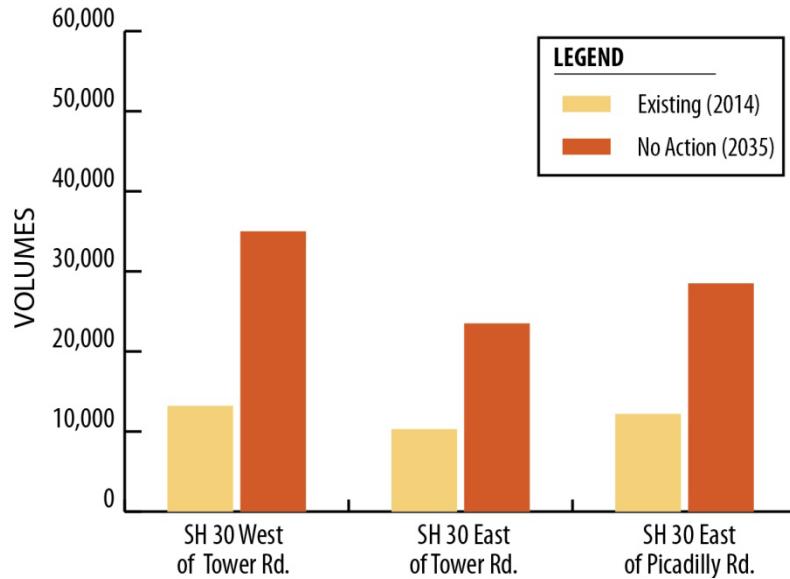
## WHAT ARE THE NEEDS FOR THE PROJECT?

The project is needed to address the following transportation deficiencies:

### LACK OF CONNECTIVITY AND AN EFFICIENT TRANSPORTATION LINK IN THE AURORA ARTERIAL SYSTEM

**Figure 1** illustrates the existing 6<sup>th</sup> Avenue roadway segments and the lack of connectivity, leaving a notable east-west gap in the arterial street system south of Interstate (I-70) and north of Jewell Avenue. While areas within and adjacent to the study area have grown, the roadway system has remained rural in nature with SH 30 remaining 2 lanes without sidewalks. Many Aurora and Arapahoe County residents east of E-470 need to drive out of direction heading north or south of 6<sup>th</sup> Parkway to reach their destinations west of E-470, since there is no direct, efficient connection in this area of the City. Currently, residents east of E-470 heading west must travel south along Gun Club Road to SH 30 and then back north to reach their destination or travel north along Gun Club Road to I-70 and then head west to the next available roadway to meet back with SH 30 depending on their destination.

The previously undeveloped region of northeastern Aurora and unincorporated Arapahoe County has experienced commercial and residential development over the past several years. This growth is expected to continue increasing the travel demand on the regional roadways in the area. Much of the new development has consisted of residential development including schools on the east side of E-470 with many of these residents commuting to offices and businesses west of E-470. Robust traffic growth in the study area is expected over the next 20 plus years further impacting the already inefficient transportation system as shown in **Figure 2**. By 2035, it is anticipated that the increased traffic would cause many of the intersections in the study area to operate at a Level of Service (LOS) F (failing) during peak hours.

**Figure 2 No Action Alternative Daily Traffic Volumes**

#### EXCESSIVE TRAVEL TIME AND VEHICLE MILES TRAVELED FOR MOTORISTS AND EMERGENCY VEHICLES

As described above, motorists within the corridor currently experience excessive travel time and miles traveled to reach their daily destinations.

During storm events, existing roadway infrastructure within the study area is unreliable due to flooding. Existing roadways are not constructed to meet the latest Federal Emergency Management Agency (FEMA) guidelines. Lack of passage of these roadways during a majority of storm events impacts travel for residents, businesses, and emergency vehicles due to flooding.

Aurora is home to Buckley Air Force Base (AFB) whose main gate access is located immediately west of the study area off of 6<sup>th</sup> Avenue/SH 30. The United States Air Force investment in Buckley AFB has created a significant regional employment center in the study area that is continuing to grow in statewide and regional importance. However, transportation improvements have not kept pace with Buckley AFB's growth and significance in the study area, as well as the region. Buckley AFB's *2012 Visioning Plan* noted the need for improved external installation connections to surrounding communities and solutions to reduce traffic jams at the 6<sup>th</sup> Avenue front gate. A portion of traffic travelling to and from Buckley AFB travels along 6<sup>th</sup> Avenue to the north entrance and currently experiences daily out of direction travel and excessive travel time due to inefficiencies in the roadway network near the main gate where

stacking of vehicles often occurs during peak hours. Buckley AFB currently has their truck entrance on the south side of their property and plans to move it to SH 30 within the study area, which will increase truck activity on already congested roads.

Emergency responders for the study area are located west of E-470, leaving them with no direct route to communities, including schools, located east of E-470. Emergency responders must use a circuitous route to respond to emergency calls for those located off of Picadilly Road and east of E-470. Given the excessive travel time, emergency responders encounter several minutes additional time to respond to calls along Picadilly Road and east of E-470.

#### **INSUFFICIENT INFRASTRUCTURE TO SUPPORT EXISTING AND FUTURE MULTIMODAL CONNECTIVITY**

Multimodal facilities within the study area are limited due to the rural nature of the area and roadway network. Existing roadways do not have sidewalks, or other multimodal amenities. As planned growth and development continues to the east, there will be a need to provide multimodal facilities in this region of Aurora. The existing 14-mile Sand Creek Regional trail extends from the South Platte River Greenway to the Coal Creek Arena. The Triple Creek Trail, a planned trail corridor by the City, would ultimately extend the existing trail network to the Aurora Reservoir. Within the study area, there are currently not connections to the existing and planned trail from the east. There is also a need for transit service in the study area and further to the east which would require roadways that accommodate buses to connect riders with destinations.

#### **INADEQUATE TRANSPORTATION INFRASTRUCTURE TO RESPOND TO PLANNED DEVELOPMENT**

DRCOG estimates show an existing population of about 35,000 within approximately 3 miles of the study area people and estimated employment of 8,250 jobs. DRCOG forecasts for 2035 indicate population nearly doubling and employment more than doubling in this area. The E-470 corridor is planned for development and new neighborhoods and is an area expected to experience this growth. Areas within and surrounding the study area are where much of Aurora's new development is in the near future; however, these areas are on the fringe of urban development and remain rural in nature. The E-470 corridor and Buckley AFB have been identified by Aurora as one of their nine strategic areas critical to Aurora's economy and identity (City of Aurora, 2010). According to the plan, these areas are planned to be intensive, mixed-use developments at the E-470 interchanges. Anticipated developments within the study area include:

- Residential growth east of E-470 with the establishment of several neighborhoods in this region already that need a more direct method of reaching areas to the west for work, shopping, and other services.
- Horizon Uptown is a major development planned within and adjacent to the northeastern portion of the study area. This development is planned to be a 500 plus acre development with up to 4 million square feet of office and flex space, 1.3 million square feet of retail space for more than 11,000 employees and is planned to include almost 4,000 homes for more than 8,000 residents.

- The Colorado Christian Fellowship development, located within the study area on the west side of Picadilly Road and just south of 6<sup>th</sup> Avenue, is a planned 45-acre multipurpose campus and town center. It is expected to include indoor and outdoor worship areas, along with facilities for education, recreation, entertainment, and retail.

The existing transportation infrastructure is inadequate for the planned development for the area.

## WHAT ALTERNATIVES WERE EVALUATED?

Six initial alternatives were developed and screened through three screening levels (Level 1a, Level 1b, and Level 2) to identify the Proposed Action (**Figure 3**). The alternatives screening is summarized below and provided in full detail in **Appendix A1 Alternatives Technical Report**. Design details of the Proposed Action are presented in **Appendix A2 Conceptual Design Plans**.

Six alternatives were analyzed during the Level 1a screening. Level 1a focused primarily on fatal flaw analysis, which included the ability of an alternative to meet the purpose and need. To determine if an alternative met the project's purpose and need, screening criteria were developed with the Project Management Team (PMT) and Technical Working Group (TWG) and expanded on the requirements an alternative must have to meet the needs of the project. These screening criteria included qualitatively answering critical questions related to the project's ability to provide the following:

- Would the alignment provide an efficient transportation link in the Aurora arterial system?
- Would the alignment reduce travel time and vehicle miles traveled for motorists and emergency vehicles?
- Would the alignment enhance and support existing and future multimodal connectivity?
- Would the alignment provide transportation infrastructure needed to support planned development?

Based on the Level 1a screening results, the same six alternatives from Level 1a and the No Action Alternative were carried into Level 1b screening (**Figure 3**). Level 1b screening was a qualitative screening and focused primarily on transportation operations, impacts to adjacent facilities, local access and circulation, property impacts, floodway/floodplain impacts, impacts to the parks, recreation, and open space properties within the project area, and noise impacts. The criteria used for Level 1b screening were fully vetted through the project PMT, and TWG, and public through a public meeting and included:

- Improve transportation operations and mobility
- Avoid and minimize adverse impacts to adjacent roadway facilities
- Enhance local access and circulation
- Provide transportation infrastructure that does not preclude planned development

- Minimize maintenance and operational requirements for drainageway crossings
- Avoid and minimize residential, commercial, and other property impacts
- Avoid and minimize impacts to floodways and floodplains
- Avoid and minimize environmental impacts

Level 1b screening resulted in four alternatives being retained for further consideration in Level 2 screening, as well as the No Action Alternative as depicted in **Figure 4**.

Level 2 screening was a quantitative and qualitative screening process that involved conceptual level design to further refine and develop alternatives with input from PMT and TWG over several meetings. Criteria developed and used for evaluating Level 2 alternatives were vetted thoroughly with the PMT and TWG and included public input received at the public meetings. Level 2 screening criteria were divided into three overarching categories with several sub categories:

- Traffic Operations and Engineering Considerations
  - Improve transportation operations and mobility
  - Avoid or minimize adverse impacts to adjacent roadway facilities
  - Balance regional travel and local access
  - Provide transportation infrastructure to respond to planned development
  - Consider feasibility and constructability of improvements
- Property Impacts
  - Avoid or minimize residential and non-residential property impacts
- Environmental Considerations
  - Avoid or minimize impacts to floodways and floodplains
  - Avoid or minimize other environmental impacts

Minimizing impacts was the primary goal in reaching a Proposed Action while balancing impacts between the built and natural environment. Based on the results of the Level 2 screening, the Proposed Action was identified to be carried forward for further analysis in the EA, along with the No Action Alternative.

Figure 3 Level 1A and 1B Alternatives

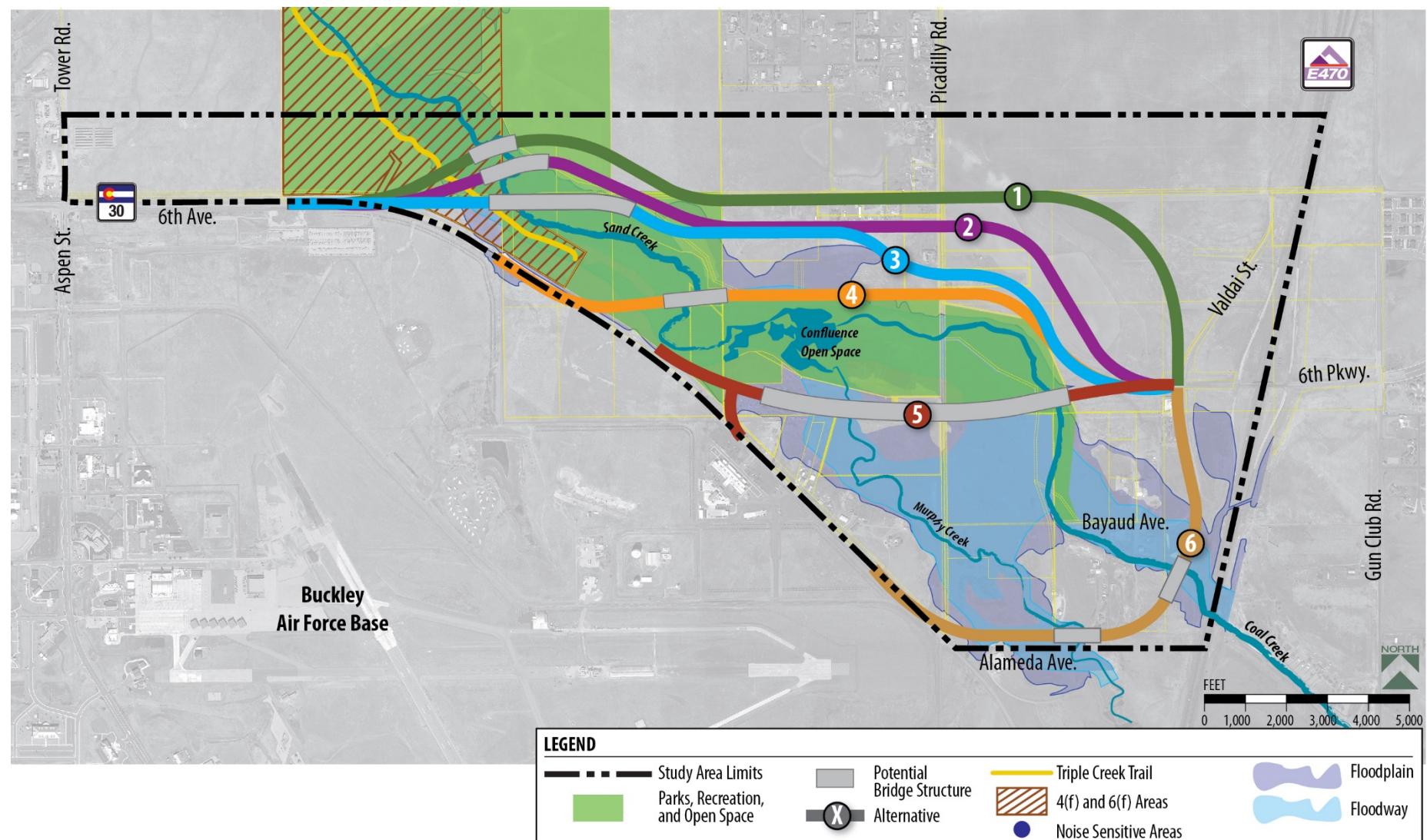
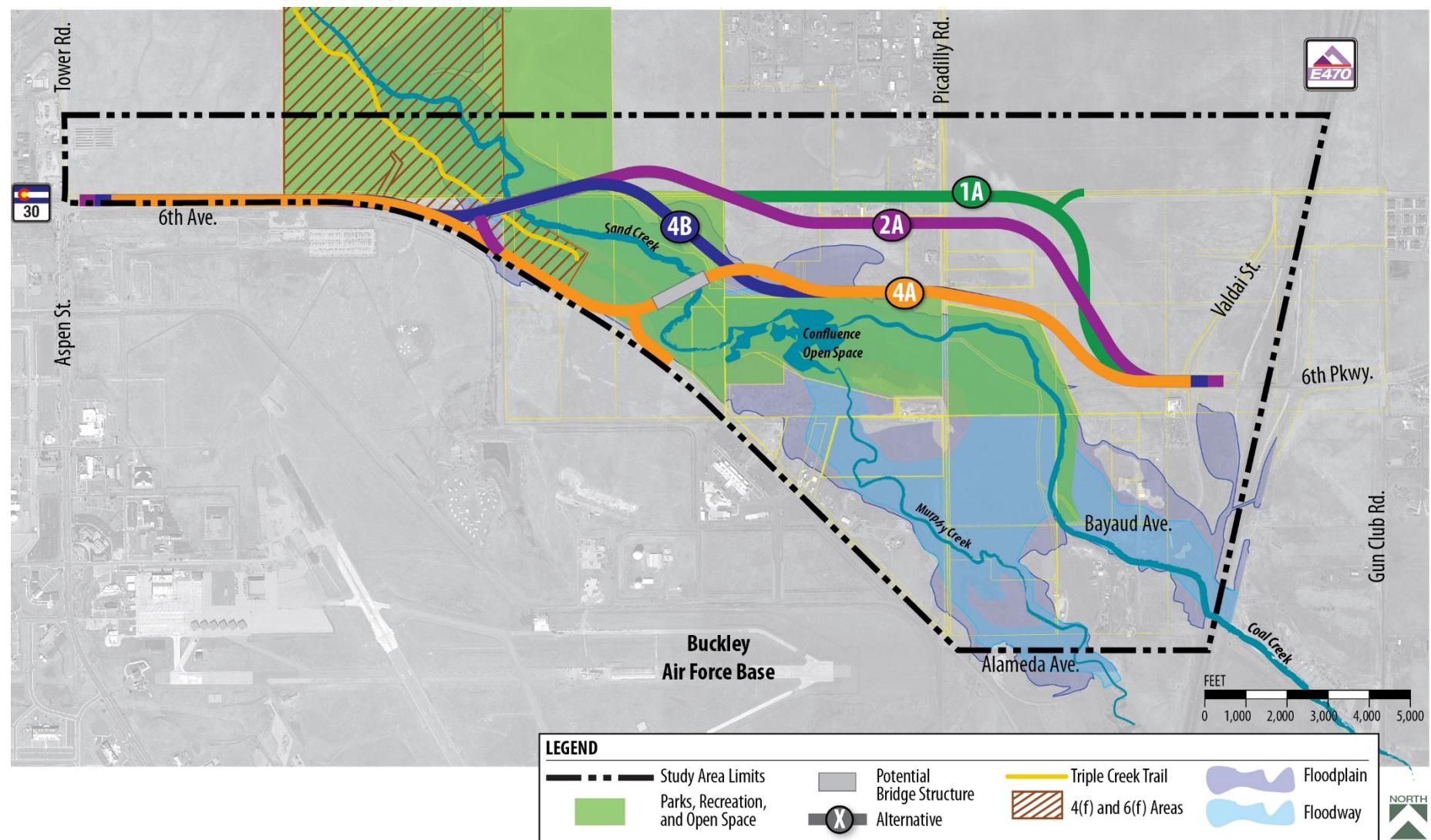


Figure 4 Level 2 Alternatives



## WHAT IS THE PROPOSED ACTION?

The Proposed Action would extend the 6<sup>th</sup> Avenue Parkway for approximately 2 miles along a new alignment, connecting existing 6<sup>th</sup> Avenue/SH 30 to the west with the existing 6<sup>th</sup> Avenue Parkway at E-470 to the east. This would close a gap in the existing major arterial street system, reducing out-of-direction travel and improving the efficiency and reliability of the transportation system. The Proposed Action would be a six-lane arterial roadway with a raised median and sidewalks.

The Proposed Action is shown on **Figure 5**. Major elements of the Proposed Action are identified by number from west to east on **Figure 5**, and include the following:

**Element 1. Tie into existing 6<sup>th</sup> Avenue/SH 30:** 6<sup>th</sup> Avenue/SH 30 is an existing two-lane arterial. At the western end of the Proposed Action, a signalized “thru-tee” type intersection (see **Figure 6**) would be constructed connecting the Proposed Action roadway to existing 6<sup>th</sup> Avenue/SH 30. This new signalized intersection would include a thru-tee signalized intersection with bypass lanes for the westbound 6<sup>th</sup> Avenue Parkway extension through movement, free right turn movements for the eastbound and westbound movements from SH 30, and signal-controlled left turns northbound, as shown on **Figure 6**. The tie-in would be an urban curb and gutter section with three 12-foot travel lanes in each direction to connect to a future 6-lane section to the west. A detached 10-foot sidewalk would be located on both the north and south sides of the roadway.

**Element 2. Triple Creek Trail realignment and connections:** A portion of the existing Triple Creek Trail would be realigned and would pass beneath the Proposed Action roadway which would be on a bridge at this location (see Element 3 in **Figure 5**). The Triple Creek Trail would be connected to 6<sup>th</sup> Avenue via a spur trail to the sidewalk to be constructed along the south side of the new roadway. The Triple Creek Trail is a 10-foot wide soft surface trail that serves equestrians, bicyclists and pedestrians. The realigned portion would match the existing width and surface. A 10-foot wide sidewalk on both sides of the bridge (Element 3) would provide connections to the trail. Its southern terminus is currently at the Coal Creek Arena, and further extension to the south is planned by the City of Aurora.

**Element 3. Roadway bridge over Sand Creek:** Immediately east of the new intersection with existing 6<sup>th</sup> Avenue/SH 30 (Element 1 in **Figure 5**), the roadway would be elevated onto a six-lane bridge crossing over Sand Creek and its associated floodplain/floodway, and over the Triple Creek Trail. The bridge length and profile would be set to minimize impacts to Sand Creek and provide a minimum 10-foot vertical clearance over the Triple Creek Trail. The bridge would have a median and sidewalks. The bridge would be approximately 680 feet in length with five variable length spans supported on four piers. The bridge structure would be designed to be compatible with the surrounding environment and to allow wildlife connectivity along Sand Creek and the Triple Creek Trail.

**Element 4. 6<sup>th</sup> Avenue Parkway arterial roadway:** The 6<sup>th</sup> Avenue Parkway extension would consist of a six-lane arterial roadway (three 12-foot wide lanes in each direction) with a raised vegetated median. There would be curb and gutter and 10-foot wide sidewalks on the north and south sides of the roadway. **Figure 7** illustrates the typical section of the Proposed Action roadway, which would be 144 feet wide. The Proposed Action would provide two new access connections from the Proposed Action to two existing portions of 6<sup>th</sup> Avenue as shown on **Figure 5**. One of these connections would provide access to the existing residences along unpaved 6<sup>th</sup> Avenue, west of Picadilly Road. The second connection would provide access from the Proposed Action to areas planned for development east of Picadilly Road.

**Element 5. Intersection with Picadilly Road:** The Proposed Action roadway would cross Picadilly Road, which is an existing north-south road. A signalized intersection would be constructed at this location. Picadilly Road is currently two lanes, but the City of Aurora anticipates that expansion to six lanes would occur in the future as a different project. Therefore, the intersection would be configured such that future expansion of Picadilly Road to six lanes can be accommodated and is not precluded.

**Element 6. Tie into existing 6<sup>th</sup> Avenue Parkway at E-470:** On its eastern end, the Proposed Action roadway would tie into the existing E-470 interchange, which currently ends at this location, forming a connection with the existing 6<sup>th</sup> Parkway to the east of the interchange. The intersection tie-in at Valdai Street and 6<sup>th</sup> Avenue Parkway would be signalized. This connection would allow access from the west via the Proposed Action to the E-470 interchange and to the existing 6<sup>th</sup> Avenue Parkway extending to the east of E-470.

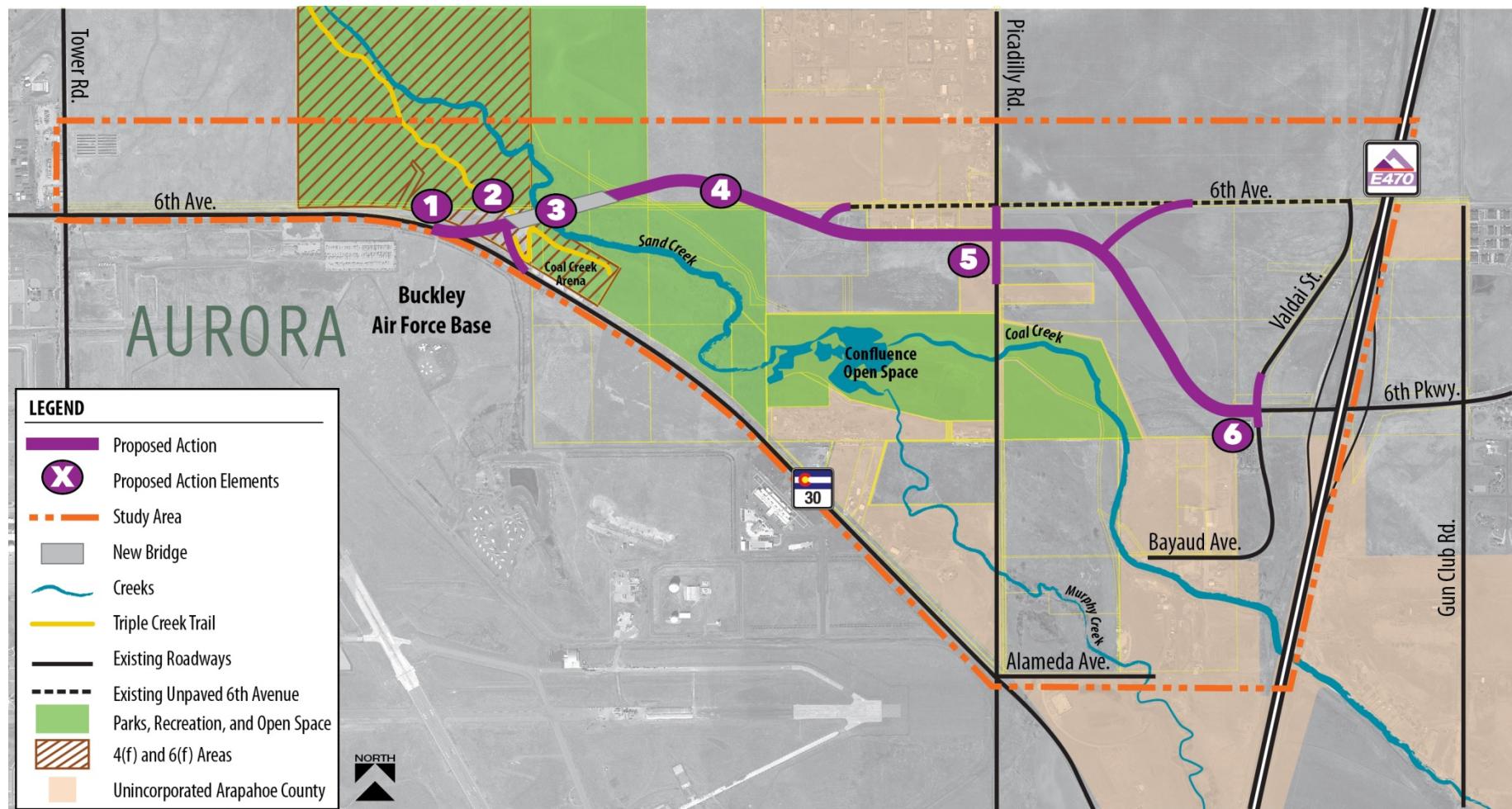
In addition to these transportation elements, the Proposed Action would include permanent roadway stormwater drainage with water quality features for roadway runoff and accommodate offsite stormwater flows. Details of drainage and water quality features are presented in **Appendix A6 Floodplains and Drainage**.

## TIMING OF IMPLEMENTATION

The Proposed Action would be constructed in phases. The first constructed phase would be a 2-lane 6<sup>th</sup> Avenue Parkway extension between SH 30 and E-470. Construction of this first phase could begin as soon as 2018 and be completed in 2019, depending on funding availability. The cost to construct this first phase is currently anticipated to be approximately \$20 million (2015 dollars), excluding right-of-way and engineering costs.

The Proposed Action in its entirety would be expected to be completed by 2040. It is anticipated that the cost to construct the Proposed Action in its entirety (including the first construction phase) would be approximately \$60 million (2015 dollars), excluding right-of-way and engineering costs.

Figure 5 Proposed Action



\*numbers on graphic correspond with the element numbers in text

Figure 6 Element 1: Signalized "Thru-Tee" Type Intersection

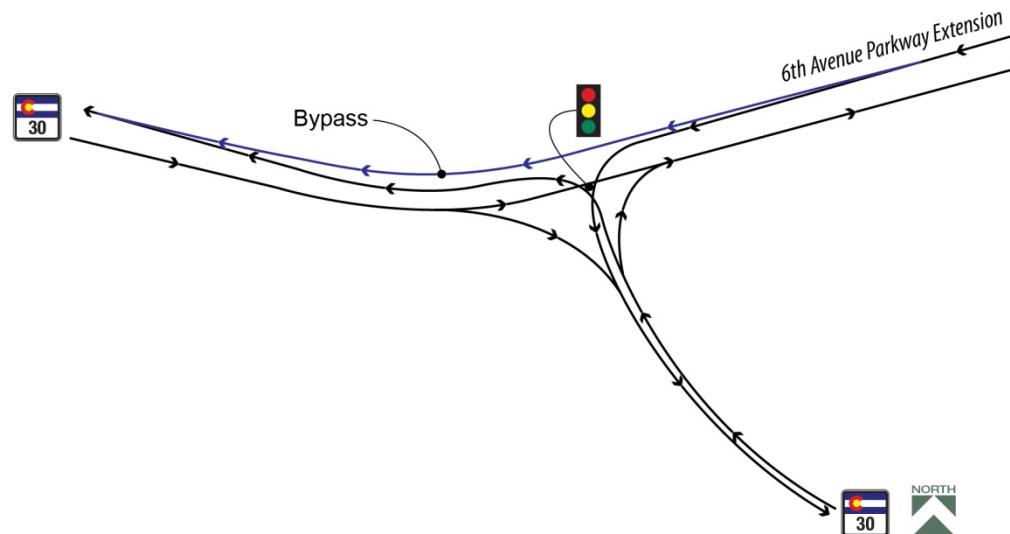
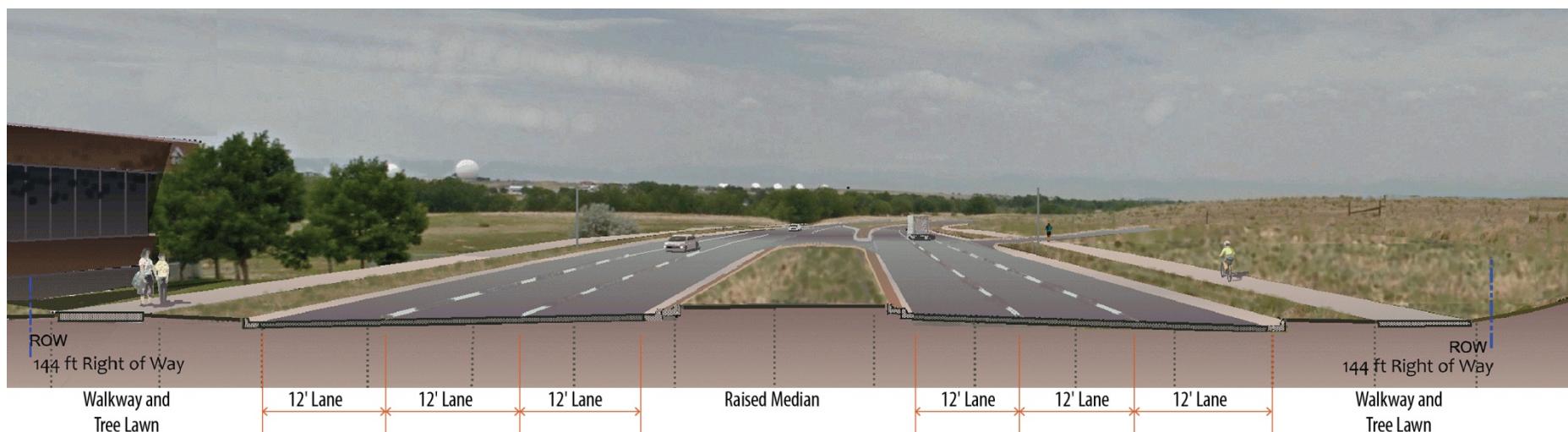


Figure 7 Proposed Action Typical Section



## WHAT WILL HAPPEN IF THE PROPOSED ACTION IS NOT IMPLEMENTED?

If the Proposed Action is not selected for implementation by CDOT and FHWA, there would be no improvements made to 6<sup>th</sup> Avenue. The existing roadway network as depicted in **Figure 1**, would remain with gaps in the 6<sup>th</sup> Avenue facilities. If the Proposed Action is not implemented the lack of connectivity in the eastern Aurora arterial system would continue and travelers, including emergency responders, would continue to experience excessive travel times and out of direction travel. The existing and future multimodal connections would have insufficient connectivity due to lacking sidewalks and connections from roadways to the Triple Creek Trail. The transportation infrastructure would be inadequate and hinder planned development in the study area.

## HOW WELL DO THE NO ACTION ALTERNATIVE AND PROPOSED ACTION MEET THE PURPOSE AND NEED?

The No Action Alternative would not provide transportation improvements within the study area. Other separate projects identified in DRCOG's fiscally constrained transportation plan and other locally funded projects would occur with either the No Action Alternative or the Proposed Action. The No Action Alternative does not meet the purpose and need but was carried forward as a baseline comparison for environmental analysis purposes. Only the Proposed Action would meet the purpose and need of the project. As the No Action Alternative offers no improvements to 6<sup>th</sup> Avenue beyond the existing conditions, the purpose and need would not be met by choosing this alternative.

**Table 2** summarizes the specific project needs and how they are addressed by the No Action Alternative and the Proposed Action.

**Table 2 Purpose and Need Summary for the No Action Alternative and Proposed Action**

Project Needs	No Action Alternative	Proposed Action
Lack of connectivity and an efficient transportation link in the Aurora arterial system	The existing gap in the arterial system and lack of connectivity would continue. The system would continue to function inefficiently and this situation would worsen with anticipated growth over the next several decades.	Would close a missing transportation link and provides a more direct route between SH 30 and E-470, thereby improving efficiency in the regional road system.
Excessive travel time and vehicle miles traveled for motorists and emergency vehicles	The existing gap in the arterial system would continue, and travel times for motorists and emergency vehicles would continue to increase. Travel times would continue to increase for those traveling both east and west in the study area, as traffic volumes and resulting congestion increase over time. The No Action Alternative travel times to get between I-225 and Gun Club Road currently are over 20 minutes, depending on the route. Emergency responders would continue to have slowed response time due to indirect travel and increased traffic volumes and resulting increase in congestion over time.	Regional travel in the study area could expect a 30 to nearly 50 percent decrease in travel time and a reduction in the trip length of one miles to three miles depending on the route between the I-225 corridor and the Gun Club Road/6 <sup>th</sup> Parkway intersection. Would reduce travel time between SH 30 and E-470 by providing a more direct route. The Proposed Action would result in a time savings of 7 minutes to get between I-225 and the 6 <sup>th</sup> Avenue Parkway Extension and Gun Club Road intersection versus the No Action Alternative.
Insufficient infrastructure to support existing and future multimodal connectivity	The existing gap in the arterial system would continue and multimodal connectivity would continue to be lacking. The lack of sidewalks and connection to the Triple Creek Trail would continue. Access to the Triple Creek Trail would be limited to those accessing the trail by car at access points at Telluride Street, Tower Road or Coal Creek Arena. The east/west access to amenities would be limited. The existing trail does not provide any east west connectivity within the study area.	Would accommodate and support existing and planned future trail amenities and provide multimodal infrastructure (sidewalks, walkways) connecting to existing and future development to the east of the Proposed Action. The Triple Creek Trail would be enhanced with a realignment and new trail spur providing access for trail users up to the 6 <sup>th</sup> Avenue Parkway and sidewalks. Currently, access to the Triple Creek Trail is limited to access points at Telluride Street, Tower Road (via the sports Park Connector Trail), and Coal Creek Arena. The Proposed Action would provide access for trail users to additional trails including the Highline Canal Trail. In addition, the exposure of the Triple Creek Trail would be increased as drivers-by will see the amenity and choose to recreate.

**Table 2      Purpose and Need Summary for the No Action Alternative and Proposed Action (continued)**

Project Needs	No Action Alternative	Proposed Action
Inadequate transportation infrastructure to respond to planned development	The transportation infrastructure would be inadequate to respond to planned development in the study area. Planned development would be hindered due to inadequate facilities to access developable land. In addition, permanent water quality would not be provided, which perpetuates flooding and storm water issues in the study area.	Would provide infrastructure consistent with the <i>1986 Comprehensive Plan</i> for the City of Aurora, which has included the plans for a connection from SH 30 to the east since 1987. Additionally, this 6-lane roadway is also included in the City's <i>2007 Update of the Northeast Area Transportation Study</i> and this study was referenced in the 2009 <i>Comprehensive Plan</i> (City of Aurora, 2010), which depicts the 6 <sup>th</sup> Avenue Parkway extension. The Proposed Action has been developed in conjunction with future plans and developments to the east of the study area. Permanent water quality would also be provided as part of the transportation infrastructure.

In addition to the No Action Alternative and Proposed Action, other alternatives were evaluated as part of this EA as described previously. Specific details on these alternatives is provided in **Appendix A1 Alternatives Technical Report**.

## WHAT ARE THE IMPACTS ASSOCIATED WITH THE NO ACTION ALTERNATIVE AND PROPOSED ACTION?

The No Action Alternative and Proposed Action have been evaluated for impacts to various resources present within the study area. **Table 3** provides a summary of impacts to these resources for the No Action Alternative and Proposed Action. Detailed information on individual resources and impacts from the No Action Alternative and Proposed Action, is provided in the corresponding technical documentation in **Appendix A** of this EA.

**Table 3 Environmental Impacts of the No Action Alternative and Proposed Action**

Resource	Context	No Action Alternative	Proposed Action	Mitigation Number
Transportation Resources (FHU, 2016c – Appendix A3)	<p>The transportation resources study area includes the SH 30/6<sup>th</sup> Avenue corridor between Airport Boulevard and Picadilly Road and 6<sup>th</sup> Parkway between Valdai and Gun Club Road. Current traffic volumes on SH 30/6<sup>th</sup> Avenue are 17,300 vehicles per day just east of Airport Boulevard. Traffic volumes on 6<sup>th</sup> Parkway are about 4,800 vehicles per day east of Gun Club Road. By 2035 SH 30/6<sup>th</sup> Avenue traffic volumes are expected to grow to 39,000 vehicles per day and 6<sup>th</sup> Parkway traffic volumes are expected to grow to 23,000 vehicles per day.</p>	<p>The existing gap in the arterial roadway system would remain. Intersections generally provide sufficient capacity for anticipated 2035 traffic volumes, except for the 6<sup>th</sup> Avenue intersection with Airport Boulevard and SH 30 intersection with Picadilly Road. These intersections are expected to operate at Level of Service (LOS) F during both the a.m. and p.m. peak hours.</p>	<p>Would reduce year 2035 traffic volumes on SH 30 between Tower Road and Picadilly Road. Would increase traffic volumes along the 6<sup>th</sup> Avenue/Parkway corridor. Would reduce east-west travel time in the study area by 7 to 11 minutes and trip lengths by one to three miles. Intersections included in the Proposed Action would all operate acceptably (LOS D or better). In general, most intersections within the transportation resources study area would have sufficient capacity for anticipated Proposed Action traffic volumes with the following exceptions.</p> <ul style="list-style-type: none"> <li>■ The intersection of SH 30/Picadilly Road would have reduced delay but still would not have sufficient capacity for anticipated 2035 traffic volumes. This intersection would operate at LOS E in the a.m. peak and LOS F in the p.m. peak.</li> <li>■ The intersection of 6<sup>th</sup> Avenue/Airport Boulevard would not have sufficient capacity for anticipated 2035 traffic volumes, operating at LOS F in both the a.m. and p.m. peak hours.</li> </ul>	1

**Table 3 Environmental Impacts of the No Action Alternative and Proposed Action (continued)**

Resource	Context	No Action Alternative	Proposed Action	Mitigation Number
Transportation Resources (continued) (FHU, 2016c – Appendix A3)			During construction, temporary detours and traffic delays would be relatively minor because the 6 <sup>th</sup> Avenue roadway would be constructed along a new alignment, off-line from current roadway. The existing SH 30 and local streets would remain open and largely unaffected during construction. Lane closures and detours may be needed for a limited time to tie the new 6 <sup>th</sup> Avenue roadway into the existing SH 30 and at the crossing with Picadilly Road.	
Air Quality (FHU, 2016d – Appendix A4)	The study area lies in the eastern Denver metropolitan area, which historically had been a nonattainment area for carbon monoxide, ozone, and particulate matter of 10 microns in diameter or smaller. The many air quality improvement actions over several decades have resulted in better air quality in the Denver area. Currently the Denver metropolitan area is classified as a nonattainment area for ozone (8-hour) and an attainment/maintenance area for carbon monoxide and particulate matter.	Out of direction travel would continue and intersection congestion would worsen over time. These conditions typically increase emissions, although this would be countered by improvements in the vehicle fleet over time.  Would not cause exceedances of criteria for any priority pollutants, nor would it result in changes in traffic volumes, vehicle mix, or any other factor that would cause an increase in mobile source air toxics.	Out of direction travel and intersection congestion would be reduced, thereby reducing overall emissions.  Would not cause exceedances of criteria for any priority pollutants. Despite an increase in traffic volume, Mobile Source Air Toxics (MSAT) emissions in the study area are likely to be lower in the future based on United States Environmental Protection Agency's (USEPA) national control programs projected to reduce annual MSAT.  Construction activities would generate dust from earthmoving and diesel emissions from construction equipment. These would be temporary, lasting only during the construction period.	2

**Table 3 Environmental Impacts of the No Action Alternative and Proposed Action (continued)**

Resource	Context	No Action Alternative	Proposed Action	Mitigation Number
Geologic Resources and Soil  (Kumar, 2016 – Appendix A5)	Geology of the study area generally consists of aeolian sands and fluvial sand and gravel deposits, underlain by Denver Formation bedrock. The depth to bedrock is expected to range from approximately 15 to 40 feet.	Would not affect geologic resources.	Would require a multi-span bridge structure over Sand Creek near the western end of the alignment along with an intersection at North Picadilly Road. The bridge structure, the roadway and associated facilities such as drainage features that would require excavation for construction under the Proposed Action could be affected by the low expansive clays, hydro-compression of eolian sands, and could also be affected by and/or cause erosion.	3
Floodplains, Drainage and Water Quality  (Merrick & Company and FHU, 2016 – Appendix A6)	The study area is located within the Sand Creek watershed, and includes the confluence of Coal Creek and Murphy Creek which are tributaries with Sand Creek. Within the study area, the Sand Creek 100-year floodplain and floodway are approximately 1200 feet and 800 feet wide, respectively. Given the presence in the floodplain and floodway, the area has a one percent chance in any year of flooding to the level that is shown on the 100-year floodplain maps. Historically, major floods in the study area have occurred 10 times in the past 120 years. Sand Creek flows northwest from the study area.	Would not affect floodplains and drainage. Would result in no impacts to existing structures at the Coal Creek Arena.  Would result in natural changes to floodplains and drainages due to flooding, low flow channel migration, and erosion resulting in minor changes to floodplain limits.	Would impact existing drainage patterns, and increase runoff due to an increase in impervious surface area.  Would adversely impact three existing structures at the Coal Creek Arena due to change in floodplain and maximum rise in surface water elevation by 1.2 feet. Impact to the Sand Creek floodplain and floodway would include: <ul style="list-style-type: none"><li>■ A maximum rise in the water surface elevation of approximately by 1.2 feet and changes to the floodplain and floodway delineation due to the rise in the water surface elevation and due to grading in the floodplain/floodway.</li><li>■ Additional point discharges causing erosion.</li></ul>	4 – 9

**Table 3 Environmental Impacts of the No Action Alternative and Proposed Action (continued)**

Resource	Context	No Action Alternative	Proposed Action	Mitigation Number
Floodplains, Drainage and Water Quality (continued)  (Merrick & Company and FHU, 2016 – Appendix A6)	Colorado Water Quality Control Commission Regulation #93 defines the portion of Sand Creek within the Study Area as Segment COSPUS16a (mainstem of Sand Creek from the confluence of Murphy and Coal Creek to the confluence with Toll Gate Creek). This entire reach is on the Department of Public Health and Environment (CDPHE) 303d Sensitive Waters List for Selenium and <i>Escherichia coli</i> ( <i>E. coli</i> ), neither of which are caused by roadway runoff. The Murphy Creek and Coal Creek tributaries are not on the CDPHE 303d Sensitive Waters List.		<ul style="list-style-type: none"> <li>■ Impacts to jurisdictional waters</li> <li>■ Release of sediment into the drainageway</li> </ul>	
Wetlands Delineation (FHU, 2016e – Appendix A7; FHU 2016f – Appendix A8)	Wetlands within the study area are associated with Sand Creek and with Coal Creek and Murphy Creek, which are tributaries to Sand Creek. Wetlands present are either abutting or adjacent to these creeks. A total of 3.73 acres of wetlands were delineated within the study area.	Would result in no impacts to wetlands or other Waters of the U.S.	<p>Would result in a total of 0.11 acre of permanent impacts to wetlands abutting Sand Creek and Coal Creek.</p> <p>Would result in 0.60 acre of temporary impacts to wetlands abutting Sand Creek and Coal Creek.</p> <p>Would result in 577 linear feet of impact to the channel and/or stream banks of Sand Creek and Coal Creek.</p> <p>Construction of impervious surfaces would increase runoff exposing the surrounding vegetation to higher levels of pollutants.</p> <p>Increased runoff may lead to increased soil erosion.</p>	10 – 17

**Table 3 Environmental Impacts of the No Action Alternative and Proposed Action (continued)**

Resource	Context	No Action Alternative	Proposed Action	Mitigation Number
Biological Resources - Vegetation (FHU, 2016f – Appendix A8)	The study area is located in a shortgrass prairie and riparian corridor where vegetation contributes to the scenic integrity of the area and supports vital resources and contains native vegetation that maintains ecological functions specific to the region.	Would result in no impacts to land cover and vegetation.	<p>Would have the following impacts to land cover:</p> <ul style="list-style-type: none"> <li>■ Permanent impacts to 51.4 acres of shortgrass prairie</li> <li>■ Temporary impacts to 16.1 acres of shortgrass prairie</li> <li>■ Permanent impacts to 4.5 acres of jurisdictional Senate Bill (SB) 40 riparian areas</li> <li>■ Temporary impacts to 2.7 acres of jurisdictional SB 40 riparian areas</li> <li>■ Permanent impacts to 0.11 acre of wetlands</li> <li>■ Temporary impacts to 0.60 acre of wetlands</li> </ul> <p>Construction of impervious surfaces would increase runoff exposing the surrounding vegetation to higher levels of pollutants. Increased runoff may lead to increased soil erosion.</p>	18 – 28
Biological Resources - Noxious Weeds (FHU, 2016f – Appendix A8)	Noxious weeds are present in the study area and have the ability to spread into adjacent areas.	Would result in no changes in the distribution of noxious weeds. The City of Aurora actively manages noxious weeds on their open space lands.	Would cause 75.41 acres of soil disturbance. Soil disturbance from construction equipment would create favorable conditions for noxious weeds to be introduced and become established, or to further spread.	29 – 36

**Table 3 Environmental Impacts of the No Action Alternative and Proposed Action (continued)**

Resource	Context	No Action Alternative	Proposed Action	Mitigation Number
Biological Resources - Wildlife (FHU, 2016f – Appendix A8)	<p>The study area provides habitat for big game, predators and other mammals. The study area is also a Bald Eagle High Activity Area, as well as used by other migratory birds and raptors. The Triple Creek Greenway Corridor contains a high density of terrestrial and avian wildlife activity. Some of the wildlife habitat within the study area has been disturbed to some extent by human activity (recreation and development).</p> <p>White-tailed deer have been observed in the study area and multiple deer movement corridors have been identified.</p> <p>Numerous species of raptor nest within the study area and the ponds at Confluence Open Space are intensely used by waterfowl.</p>	<p>Would result in no impacts to species habitat.</p>	<p>Wildlife foraging and nesting habitat would be directly impacted by the 55.9 acres of vegetation that would be permanently removed due to the construction of impervious surfaces in the shortgrass prairie and jurisdictional SB 40 areas.</p> <p>Would create a barrier to wildlife movement through the Triple Creek Greenway Corridor.</p> <p>Would impact adjacent nesting birds (including raptors), and create long-term disturbances to migratory birds (including waterfowl).</p> <p>Wildlife mortality due to construction activities and habitat loss could also occur.</p> <p>The bridge spans would provide large animal crossing, where an estimated 12-foot high x 700-foot long span bridge would provide sufficient permeability for wildlife to move along the Triple Creek Greenway Corridor.</p> <p>Wildlife species sensitive to indirect human disturbance (noise and visual disturbance) would be impacted most during the duration of construction. Because of the mobility of many species, they are generally capable of avoiding activities causing disturbance.</p> <p>Some types of erosion control measures could entangle animals.</p>	37 – 41

**Table 3 Environmental Impacts of the No Action Alternative and Proposed Action (continued)**

Resource	Context	No Action Alternative	Proposed Action	Mitigation Number
Biological Resources - Aquatic Resources (FHU, 2016f – Appendix A8)	Sand Creek, Coal Creek, Murphy Creek, and aggregate ponds are all located in the study area. However, these aquatic resources are not identified as important fish streams. The northern leopard frog has been found on sections of Coal Creek upstream from the study area.	Would result in no impacts to aquatic resources.	Would directly impact Sand Creek with the addition of a bridge structure over the creek and necessary riprap. Would indirectly impact Sand Creek with pollutants from the roadway entering the creek, including pollutants associated with vehicles and roadway maintenance (petroleum, ice melt, sand, etc.). Would indirectly impact Sand Creek due to additional shading of the stream.	6 and 7 (drainage and water quality)
Biological Resources - Special Status Species – Federal Threatened/ Endangered Species (FHU, 2016f – Appendix A8)	The study area contains potential suitable habitat for one federally listed species: <ul style="list-style-type: none"><li>■ Ute ladies'-tresses orchid (<i>Spiranthes diluvialis</i>) – Federally Threatened</li></ul> However, baseline studies did not identify the presence of this species.	Would result in no impacts to the Ute ladies'-tresses orchid.	Would result in the direct loss of 4.5 acres of potential suitable habitat (i.e., the riparian areas associated with Sand Creek, Coal Creek, and other potential habitat).	42

**Table 3 Environmental Impacts of the No Action Alternative and Proposed Action (continued)**

Resource	Context	No Action Alternative	Proposed Action	Mitigation Number
Biological Resources - Special Status Species – Bald Eagle (FHU, 2016f – Appendix A8)	The study area is Bald Eagle High Use Activity Area and contains known winter roost sites for the Bald Eagle ( <i>Haliaeetus leucocephalus</i> ), protected under the Bald and Golden Eagle Protection Act.  Bald Eagles feed on prairie dogs and waterfowl in the study area during periods when streams, rivers, lakes, and reservoirs freeze over in the winter. No active or in-active Bald Eagle nests are found in the study area.	Would result in no impacts to the Bald Eagle.	Would result in the direct loss of 4.5 acres of cottonwood and herbaceous riparian land cover, which could be potential nesting habitat for the Bald Eagle. Also, the Proposed Action is within Colorado Parks and Wildlife (CPW) Winter Range and approximately 440 feet north of a Bald Eagle High Activity Area, which could cause changes in Bald Eagle activity in the area.	43
Biological Resources - Special Status Species – State Threatened Species (FHU, 2016f – Appendix A8)	The study area contains existing colonies of black-tailed prairie dogs, which is preferred habitat by the Western Burrowing Owl ( <i>Athene cunicularia</i> ), a state threatened species. Prairie dogs are keystone species, and other local wildlife populations rely on them as a food source.  However, no Western Burrowing Owls have been found in the study area.	Would result in no impacts to the Western Burrowing Owl.	Would result in the direct loss of 22.8 acres of known prairie dog colonies and other local wildlife populations due to the construction of the roadway.  Impacts are not expected since no Western Burrowing Owls have been observed in the study area previously.	44

**Table 3 Environmental Impacts of the No Action Alternative and Proposed Action (continued)**

Resource	Context	No Action Alternative	Proposed Action	Mitigation Number
Biological Resources - Special Status Species – State Species of Special Concern (FHU, 2016f – Appendix A8)	<p>Special Status Species –</p> <ul style="list-style-type: none"> <li>■ Swift Fox (<i>Vulpes velox</i>) – State Special Concern</li> <li>■ Black-tailed prairie dog: The study area contains existing colonies of black-tailed prairie dogs (<i>Cynomys ludovicianus</i>), a state species of special concern.</li> </ul>	<p>Would result in no impacts to the black-tailed prairie dog or Swift fox.</p>	<p>Would result in the direct loss of 22.8 acres of known prairie dog colonies due to the construction of the roadway.</p> <p>Would result in the direct loss of 55.9 acres of potential habitat for other sensitive species due to the construction of impervious surfaces.</p> <p>Wildlife mortality due to construction activities and habitat loss could also occur. A reduction of other local wildlife populations would also result due to the loss of the prairie dogs and their habitat.</p> <p>Wildlife species sensitive to indirect human disturbance (noise and visual disturbance) would be impacted most during the duration of construction. Because of the mobility of many species, they are generally capable of avoiding activities causing disturbance. It is anticipated that less sensitive wildlife species would return to habitat adjacent to the Proposed Action once construction is complete.</p>	45 - 46

**Table 3 Environmental Impacts of the No Action Alternative and Proposed Action (continued)**

Resource	Context	No Action Alternative	Proposed Action	Mitigation Number
Biological Resources - Special Status Species – Migratory Birds (FHU, 2016f – Appendix A8)	<p>Special Status Species – American Peregrine Falcon, Ferruginous Hawk, Long-billed Curlew, Mountain Plover, and Swift Fox:</p> <p>The study area contains existing suitable habitat for the following sensitive bird species:</p> <ul style="list-style-type: none"> <li>■ American Peregrine Falcon (<i>Falco peregrinus anatum</i>) – State Special Concern</li> <li>■ Ferruginous Hawk (<i>Buteo regalis</i>) – State Special Concern</li> <li>■ Long-billed Curlew (<i>Numenius americanus</i>) – State Special Concern</li> <li>■ Mountain Plover (<i>Charadrius montanus</i>) – State Special Concern</li> </ul>	Would result in no impacts to migratory bird species.	<p>Would potentially disrupt foraging activities for all of these sensitive species.</p> <p>Would put pressure on more sensitive birds (Ferruginous Hawks, Mountain Plover, etc.) and cause them to potentially move further away from previously used habitat.</p> <p>May adversely impact individuals, but not likely to adversely impact the species as a whole.</p> <p>Some types of temporary construction fencing could entangle ground-nesting and low-flying migratory birds.</p>	47
Biological Resources - Special Status Species – State Species of Special Concern (FHU, 2016f – Appendix A8)	<p>Special Status Species – Northern leopard frog:</p> <p>The northern leopard frog is known to occur in stretches of Coal Creek upstream from the study area. Suitable habitat for the frog is present in the study area.</p>	Would result in no impacts to the northern leopard frog.	Could impact northern leopard frog and its habitat if construction activities occur between March 1 and July 31 or if pesticide application was not restricted during the period of frog metamorphosis (June to August).	48

**Table 3 Environmental Impacts of the No Action Alternative and Proposed Action (continued)**

Resource	Context	No Action Alternative	Proposed Action	Mitigation Number
Historic and Archaeological Resources (CDOT, 2016 – Appendix A9; Alpine Archaeological Consultants, 2016 – Appendix A10)	Through evaluation under Section 106 of the National Historic Preservation Act, no National Register of Historic Places eligible resources were found within the Area of Potential Effects (APE), which is the area evaluated for historic properties under Section 106.  No archaeological sites were identified during a Class III Survey.	Would not affect known historic or archaeological resources.	Would not affect known historic or archaeological resources. Unknown archeological resources could possibly be unearthed during construction.	49
Paleontological Resources (Rocky Mountain PaleoSolutions, 2016 – Appendix A11)	The majority of the study area is immediately underlain by Quaternary surficial deposits with low and moderate paleontological potential. The fossil rich Denver Formation is mapped at the surface only at the westernmost end of the study area, and generally expected to occur at depths of 15 to 40 feet across much of the study area. There are no previously recorded fossil localities in the study area, and no fossil localities and no surface exposures of the Denver Formation were discovered during the field survey.	Would not affect paleontological resources.	Fossils could possibly be unearthed during construction, with the most likely being from the Denver Formation. The Denver Formation would only be expected to be encountered with surface construction at the westernmost end of the study area, or with excavations such as for bridge piers extending to depths of 15 feet or more in other part of the study area. Unearthing of fossils from the alluvial deposits is less likely.	50

**Table 3 Environmental Impacts of the No Action Alternative and Proposed Action (continued)**

Resource	Context	No Action Alternative	Proposed Action	Mitigation Number
Land Use (FHU, 2016g – Appendix A12)	The study area contains parks, recreation and open space resources, including the Coal Creek Arena (a rodeo facility) and undeveloped land with some agricultural/pasture use adjacent to a few single-family residential properties and a religious property. Future land use will retain open space, with undeveloped areas expected to be converted to employment and mixed use over time.	Would not directly impact land use since planned future developments in the area would continue. Would result in continued inadequate transportation infrastructure to respond to planned development. Is not compatible with the comprehensive plans for the area.	Would provide transportation improvements consistent with and supportive of future planned land use and zoning. Would convert approximately 47.5 acres of land to a transportation use as permanent right of way. This would include approximately 8 acres of parks, recreation, and open space property, 1.1 acres of residential property, 14 acres of agricultural/pasture property and 24.4 acres of undeveloped/vacant property.	51
Social Resources and Environmental Justice (FHU, 2016h – Appendix A13)	The project area is within the eastern portion of the City of Aurora. Community facilities, including churches, schools, parks, recreation, and open space, are located within and adjacent to the community study area. There are low-income and minority populations present within the community study area. The percentage of these populations are generally lower as compared to surrounding areas.	Would not displace community facilities or resources and would not result in impacts to low-income and/or minority populations.  Would continue out of direction travel within the eastern portion of the City of Aurora.	Would not displace community facilities or resources and would not result in disproportionately high or adverse impacts to low-income and/or minority populations.  Would cause some delays and detours during construction. During these times, travel within the study area would take longer due to construction delays. All travelers within the study area would experience negative impacts.  Would offer several benefits that are expected to be shared equitably across demographic groups and communities including: <ul style="list-style-type: none"><li>■ Decreased travel times</li><li>■ Decreased vehicle miles traveled</li><li>■ Improved safety and mobility</li><li>■ Enhanced access to recreational facilities</li></ul>	52 – 54

**Table 3 Environmental Impacts of the No Action Alternative and Proposed Action (continued)**

Resource	Context	No Action Alternative	Proposed Action	Mitigation Number
Right-of-Way and Relocations (FHU, 2016i–Appendix A14)	This project is in the City of Aurora and within Arapahoe County, Colorado. Current ownership of land in the project Study Area encompasses both private and public entities. Residences, businesses, churches, farm operations, parklands, undeveloped lands, and existing transportation alignments.	Would result in no parcel or property impacts or relocations.	<p>There are no relocations or displacements. The following additional right-of-way would be needed:</p> <ul style="list-style-type: none"> <li>■ 47.5 acres from 15 properties for permanent right-of-way</li> <li>■ 15.6 acres from 15 properties for permanent easements</li> <li>■ 2.8 acres from 8 properties for temporary easements</li> </ul> <p>No full acquisitions of private parcels would occur.</p> <p>Would not affect parking areas or outbuildings (such as sheds, garages, or barns).</p>	55 – 56
Utilities (Merrick, 2016 – Appendix A15)	<p>The study area has a number of existing utilities, including:</p> <ul style="list-style-type: none"> <li>■ Xcel Energy: Gas and electrical lines cross the project area at various locations including SH 30, Picadilly Road and 6<sup>th</sup> Parkway</li> <li>■ Comcast: Underground fiber optic cable along 6<sup>th</sup> Avenue and Picadilly Road</li> </ul>	Would result in no conflicts with the existing utilities.	<p>Would result in potential conflicts with existing utilities as follows:</p> <ul style="list-style-type: none"> <li>■ Xcel Energy: Potential conflicts with underground gas and electric lines along SH 30 and at 6<sup>th</sup> Parkway and E-470</li> <li>■ Comcast: Possible conflicts with proposed storm sewer, which is included in the Proposed Action for roadway drainage, at the Picadilly Road and 6<sup>th</sup> Avenue intersection</li> </ul>	57

**Table 3 Environmental Impacts of the No Action Alternative and Proposed Action (continued)**

Resource	Context	No Action Alternative	Proposed Action	Mitigation Number
Utilities (continued)  (Merrick, 2016 – Appendix A15)	<ul style="list-style-type: none"> <li>■ Century Link: Multiple conduits running along the north side of existing 6<sup>th</sup> Avenue in a shared conduit with Century Link east of Picadilly Road, and north-south along Picadilly</li> <li>■ Verizon: Underground fiber optic cable runs east/west along 6<sup>th</sup> Avenue to Picadilly Road. Fiber runs north/south underground Picadilly Road</li> <li>■ Zayo Communications: Underground fiber optic cable running within right-of-way of SH 30 and 6<sup>th</sup> Avenue west of project limits</li> <li>■ Potable Water Line. City of Aurora Water: 30" potable water line along existing 6<sup>th</sup> Avenue</li> <li>■ Sanitary Sewer. City of Aurora 42" RCP sanitary sewer interceptor along Sand Creek and Picadilly Road</li> <li>■ Re-Use Water Line. City of Aurora: 16" PVC reuse line along Sand Creek and Picadilly Road, parallel to the 42" sewer</li> </ul>		<ul style="list-style-type: none"> <li>■ Century Link: Possible conflicts with proposed storm sewer, which is included in the Proposed Action for roadway drainage, at the Picadilly Road and 6<sup>th</sup> Avenue intersection and at the proposed bridge</li> <li>■ Verizon: Possible conflicts with proposed storm sewer, which is included in the Proposed Action for roadway drainage, at the Picadilly Road and 6<sup>th</sup> Avenue intersection</li> <li>■ Zayo Communications: Potential conflicts at the western limits of the project</li> <li>■ Potable Water Line: Proposed Action Alternative would not affect water main line. Protection at crossings and easement issues would be further investigated during preliminary design.</li> <li>■ Sanitary Sewer: Proposed Action Alternative would not affect sanitary sewer interceptor. Protection at crossings and easement issues would be further investigated during preliminary design.</li> <li>■ Re-Use Water Line: A lowering would be required in two locations to facilitate storm sewer and drainage outfall to Sand Creek</li> </ul>	

**Table 3 Environmental Impacts of the No Action Alternative and Proposed Action (continued)**

Resource	Context	No Action Alternative	Proposed Action	Mitigation Number
Parks, Recreation, Open Space Resources and Section 4(f) and 6(f) Analysis (FHU, 2016j– Appendix A16)	<p>The study area contains a number of parks, recreation and open space resources that include a continuous gallery of mature cottonwood trees and willows along Sand Creek, and naturalized ponds creating a visually harmonious landscape experience for open space, park, and recreation visitors. User groups include pedestrian, bike, equestrian, educational, and bird watching. The specific uses and restrictions on these resources have been identified as follows:</p> <ul style="list-style-type: none"> <li>■ Open space</li> <li>■ Section 6(f) resources present include: Project #748 Springhill Park Addition (which encompasses Environmental Day Camp and Coal Creek Arena), and Project #750 Triple Creek Trail</li> </ul>	<p>Would not result in impacts to parks, recreation, open space, or Section 6(f) resources.</p>	<p>Would result in 7.23 acres of permanent impact to open space properties. Would result in 4.6 acres of temporary impact to open space properties. Section 6(f) impacts include:</p> <ul style="list-style-type: none"> <li>■ Project #748 Springhill Park Addition (which includes Environmental Day Camp and Coal Creek Arena) – conversion of 10.4 acres of permanently impacted area</li> <li>■ Project #750 Triple Creek Trail – 700 linear feet of trail impacted</li> </ul> <p>Enhanced access to open space and parks would be provided with the Proposed Action. Would not negatively impact access, parking, or use of the areas.</p>	58 – 61

**Table 3 Environmental Impacts of the No Action Alternative and Proposed Action (continued)**

Resource	Context	No Action Alternative	Proposed Action	Mitigation Number
Parks, Recreation, Open Space Resources and Section 4(f) and 6(f) Analysis (continued) (FHU, 2016j– Appendix A16)	Section 4(f) resources present in the study area include: Coal Creek Arena, Environmental Day Camp, and Triple Creek Trail.	Would not result in impacts to Section 4(f) resources.	<p>Section 4(f) impacts would include:</p> <ul style="list-style-type: none"> <li>■ Environmental Day Camp – 0.2 acre of permanent impact and 0.6 acres of temporary impact. After consideration of public comments, FHWA will decide whether or not to make a <i>de minimis</i> finding for the Environmental Day Camp and will seek the concurrence of the Official with Jurisdiction (City of Aurora Parks, Recreation, and Open Spaces) for any <i>de minimis</i> findings.</li> <li>■ Triple Creek Trail – 700 linear feet of trail impacted. Impacts to the Triple Creek Trail are considered an excepted use under Section 4(f) due to the enhancement from the project.</li> <li>■ Coal Creek Arena – 0.7 acre of temporary impacts from Triple Creek Trail realignment and impact to three structures (electrical building, abandoned restroom, and announcer's booth) due to a rise in the floodplain. Impacts to the Arena from the realigned trail and new spur within the Arena would provide enhanced access and are considered an excepted use under Section 4(f) due to the enhancement from the project.</li> </ul>	62

**Table 3 Environmental Impacts of the No Action Alternative and Proposed Action (continued)**

Resource	Context	No Action Alternative	Proposed Action	Mitigation Number
Traffic Noise (FHU, 2016k – Appendix A17)	Traffic noise is considered in the context of the noise levels at exterior areas of frequent human use at noise-sensitive properties such as homes. Noise impacts occur when noise levels will reach the CDOT Noise Abatement Criteria (NAC) or future levels increase by 10 decibels over existing levels. Existing noise conditions were examined within and adjacent to the Proposed Action footprint. No receptors are currently impacted by equaling or exceeding the NAC and the range of noise levels at noise receptors was 47 to 64 A-weighted decibels (dBA).	The 2035 traffic conditions with no project improvements to the study area were examined. Two homes and one recreation area were identified as impacted by traffic noise. The receptors were impacted by equaling or exceeding the NAC; one of the homes was also calculated to have a noise increase of at least 10 dBA. The range of noise levels at these three locations was 66 to 68 dBA.	The 2035 traffic conditions with the Proposed Action were examined. Eight homes and two recreation areas were identified as impacted by traffic noise—seven more than No Action Alternative. Receptors were predicted to be impacted in two ways: by equaling or exceeding the NAC or having a noise increase of at least 10 dBA. Of the eight homes that would be impacted by traffic noise increase, five would exceed the NAC while three would not exceed the NAC but would have a noise of at least 10 dBA. The two recreation area receptors that would be impacted would both exceed the NAC. Construction noise could temporarily affect adjoining properties within and adjacent to the Proposed Action.	63
Visual Resources (FHU, 2016l – Appendix A18)	The project setting is within the eastern extent of the Colorado Front Range urban zone. The Triple Creek Greenway Corridor and rural uplands are interrelated landscape units of riparian open space and shortgrass prairie, that define the visual character of the project's area of visual affect.	The Triple Creek Greenway Corridor would retain its natural visual quality as public open space. The visual character will transition from rural to urban, with future development planned within much of the upland areas. With future planned development, much of the upland area will transition to an urbanized landscape to the east of the Triple Creek Greenway Corridor.	The visual contrast of the SH 30/6 <sup>th</sup> Avenue intersection, bridge, vegetation clearing, and drainage features, would be: <ul style="list-style-type: none"> <li>■ Incompatible with the visual character of the Triple Creek Greenway Corridor</li> <li>■ Within open foreground viewsheds of the Sand Creek Trail</li> <li>■ Screened from the Environmental Day Camp and Coal Creek Arena viewsheds</li> </ul>	64 – 71

Table 3 Environmental Impacts of the No Action Alternative and Proposed Action (continued)

Resource	Context	No Action Alternative	Proposed Action	Mitigation Number
Visual Resources (continued) (FHU, 2016I – Appendix A18)	<p><b>Triple Creek Greenway Corridor</b> A continuous gallery of mature cottonwood trees and willows along Sand Creek, and naturalized ponds create a visually harmonious landscape experience for open space visitors. Viewpoints include the Triple Creek Trail, Environmental Day Camp, Coal Creek Arena, and Confluence Ponds Open Space. Viewer groups include pedestrian, bike, equestrian, educational, and bird watching.</p> <p><b>Upland Area Landscape Unit</b> Rural development patterns within the shortgrass prairie uplands create an agrarian landscape appearance with open panoramic views.</p>		<p>Adverse impacts to the visual quality of the local setting would result from the scale and form of the structural elements, and width of vegetation clearing.</p> <p>The visual contrast would be moderate to weak, or “visually absorbed,” within the broader context of the Triple Creek Greenway Corridor.</p> <p>The visual contrast of the roadway, Picadilly intersection and drainage features would result in adverse impacts to foreground views from rural residents.</p> <p>The proposed road, and Picadilly and E-470 intersections have the potential to be compatible and visually integrated with future patterns of urban development.</p> <p>Temporary impacts would result from excavation, construction staging, and temporary stockpiles.</p>	

**Table 3 Environmental Impacts of the No Action Alternative and Proposed Action (continued)**

Resource	Context	No Action Alternative	Proposed Action	Mitigation Number
Energy (FHU, 2016m – Appendix A19)	Energy consumption in the study area generally is related to the use of petroleum and other fuels to power vehicles.	Vehicle Miles Traveled in the study area would increase over time, leading to increased traffic congestion due to planned development. This, in turn, would result in even less efficient fuel use by all vehicles in or traveling through the study area.	Would consume more energy than the No Action Alternative, since the No Action Alternative would leave the existing road alignments with no improvements. Because the Proposed Action would be on a new alignment, traffic conflicts and delays and resulting fuel consumption during construction may be lower. Overall, the differences are expected to be minor and are relevant only during the relatively brief construction period.	72
Hazardous Materials (FHU, 2016n – Appendix A20)	The study area is largely undeveloped, and the land surrounding the study area consists generally of undeveloped agricultural land, park, recreation, and open space properties, Buckley AFB, and scattered residences. Buckley AFB past uses generally contribute to hazardous materials issues with past fueling operations and associated plumes outside the study area.	No sites with potential and recognized hazardous materials concerns would be impacted.	Potential or recognized hazardous materials concerns that may be encountered during ground disturbing activities during construction include: potential presence of asbestos containing material (ACM), lead containing paint (LCP), and groundwater monitoring wells associated with Buckley AFB. Also, the potential to encounter unknown contamination from groundwater can occur during construction.	73 – 79

**Table 3 Environmental Impacts of the No Action Alternative and Proposed Action (continued)**

Resource	Context	No Action Alternative	Proposed Action	Mitigation Number
Cumulative Impacts (FHU, 2016o – Appendix A21)	<p>Cumulative impacts have been examined for a cumulative impacts study area surrounding and extending at least one mile in all directions from the project study area. The cumulative impacts study area includes Buckley AFB, and also a developing area of Aurora and Arapahoe County. In addition to Buckley AFB, notable features in the cumulative impacts study area include I-70 to the north, E-470 to the west, the Triple Creek Greenway Corridor, and the Aurora Sports Park. Buckley AFB is an active duty air base, with operations expected to continue and grow in the future.</p> <p>The Triple Creek Greenway Corridor, which is planned to be extended to the southeast over time has been established through the cooperative efforts of the City of Aurora, Arapahoe County and other agencies to protect and manage land along Sand Creek, Coal Creek and Murphey Creek, through acquisition and conservation easements.</p> <p>Development is planned and is occurring over time on privately owned land within the area.</p>	<p>Cumulative impact analysis is not relevant to the No Action Alternative.</p>	<p>Cumulative impacts to traffic, air quality, floodplains and drainage, wetlands, biological resources, land use, parks, recreation and open space, noise and visual resources have been examined. The Proposed Action along with other transportation improvements (DRCOG, 2015a) would reduce future traffic congestion and delays which are generally increasing over time in the area.</p> <p>Air quality in the Denver metro area has generally been improving over the past several decades, through the actions of federal, state, regional and local agencies; this trend is expected to continue and is consistent with reduction in future congestion provided by the Proposed Action.</p> <p>Would add incrementally to impacts to floodplains, drainage, wetlands, and biological, land use, noise and visual resources. These resources have been impacted and are likely to continue to be impacted over time as development occurs on previously undeveloped lands.</p>	<p>Mitigation not required</p>

**Table 3 Environmental Impacts of the No Action Alternative and Proposed Action (continued)**

Resource	Context	No Action Alternative	Proposed Action	Mitigation Number
Cumulative Impacts (continued) (FHU, 2016o – Appendix A21)			<p>The City of Aurora, Arapahoe County and other agencies have taken a proactive approach to protecting these resources through the establishment of the Triple Creek Greenway. Active protection of these resources is expected to continue, through open space, parks/recreation facilities and master planning activities.</p> <p>Would be unlikely to have substantial negative cumulative impacts on environmental resources, when added to other past, present, and reasonably foreseeable future actions.</p>	

## WHAT MITIGATION COMMITMENTS WILL BE MADE FOR THE PROPOSED ACTION?

**Table 4** presents mitigation commitments by resource for the Proposed Action. Additional details regarding the methodology and analysis of impacts and mitigations are found in their respective technical reports in **Appendix A**.

**Table 4** Summary of Impacts and Mitigation for the Proposed Action

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
1	Transportation Resources	Temporary disruption of traffic for brief periods during construction	A way-finding and signage system will be implemented to ease travel conditions for motorists during the times when lane closures, detours, and/or delays are required.	City of Aurora	Design Construction
2	Air Quality	Air emissions during construction	<ul style="list-style-type: none"> <li>■ Maintain engines and exhaust systems on equipment in good working order. Maintain equipment on a regular basis. Equipment will be subject to inspection by the project manager to ensure maintenance.</li> <li>■ Control fugitive dust through implementation of CDOT's Standard Specifications for Road and Bridge Construction, particularly Sections 107.24, 209 and 250, and Air Pollution Control Division's Air Pollutant Emission Notification requirements</li> <li>■ No excessive idling of inactive equipment or vehicles.</li> </ul>	City of Aurora	Design Construction

**Table 4 Summary of Impacts and Mitigation for the Proposed Action (continued)**

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
<b>3</b>	Geologic Resources and Soil	Structures and roadway could be affected by the low expansive clays, hydro-compression of eolian sands, and could also be affected by and/or cause erosion.	A project-specific geotechnical investigation will be conducted and the results will be used for preliminary and final design. The impact from low expansive clays and hydro-compression of eolian sands will be minimized and/or mitigation through proper design. The potential for erosion will also be minimized and/or minimized through proper design, and the erosion that currently exists in the channel alignments will be mitigated, where appropriate, through bank stabilization and/or revetment.	City of Aurora	Design Construction
<b>4</b>	Floodplains	Increase in the floodplain base flood elevations	Submit a Conditional Letter of Map Revision (CLOMR) to FEMA to notify them of the rise in the floodway. Part of the CLOMR package will include proof of notifications to affected property owners and that buildings that would have been adversely impacted by the rise in the water surface elevations have been mitigated.	City of Aurora	Design
<b>5</b>	Floodplains	Floodplain impacts to three structures at Coal Creek Arena	The main electrical building and the abandoned restroom building will be consolidated to a single building that will be constructed near the existing water well with a finished floor elevation one foot above the proposed 100-year floodplain elevation. The announcer's booth stilts will be reinforced to improve the integrity of the structure and protect it from increased flooding hazards caused by floating debris.	City of Aurora	Design Construction

**Table 4 Summary of Impacts and Mitigation for the Proposed Action (continued)**

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
6	Drainage and Water Quality	Increased sediment from the proposed roadway construction process	A Stormwater Management Plan (SWMP) will be required by the Municipal Separate Storm Sewer System (MS4) permit for construction activities and will follow the City of Aurora Rules and Regulations Regarding Stormwater Discharges Associated with Construction Activities, latest edition. For the area impacting CDOT's right-of-way, the SWMP will comply with CDOT's MS4 permit.	City of Aurora CDOT Design Engineering	Design Construction
7	Drainage and Water Quality	Increased runoff from the proposed roadway	Permanent water quality Best Management Practices (BMPs) will be provided and maintained to treat roadway runoff prior to release to the drainageways. Additionally, BMPs such as erosion bales, silt fences, or other sediment control devices will be used as sediment barriers and filters adjacent to wetlands, surface waterways, and at inlets where appropriate.  Temporary and permanent check dams will be used where appropriate to slow the velocity of water through roadside ditches and in swales.  Minimize the amount and time period of disturbance to allow revegetation of disturbed areas.	City of Aurora CDOT Design Engineering	Design Construction
8	Drainage and Water Quality	Additional point discharges causing erosion	All culvert outlets will have permanent riprap erosion protection.	City of Aurora	Design Construction

**Table 4 Summary of Impacts and Mitigation for the Proposed Action (continued)**

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
<b>9</b>	Drainage and Water Quality	Impacts to jurisdictional waters	City of Aurora will use street sweeping and other routine maintenance programs to decrease sedimentation of the adjacent waterways. They will modify their maintenance operations as newer technology becomes available.	City of Aurora	Design Construction
<b>10</b>	Wetlands	Temporary impacts to wetlands	Fence wetlands to be protected during construction.	City of Aurora	Design Construction
<b>11</b>	Wetlands	Temporary impacts to wetlands	After construction, remove temporary fill/materials used for protecting wetlands from permanent impact and remove all construction debris.	City of Aurora	Construction
<b>12</b>	Wetlands	Temporary impacts to wetlands	Temporary BMPs (such as installing erosion logs, bales, silt fence, etc.) will be used to capture sediments from disturbed areas during construction.	City of Aurora	Construction
<b>13</b>	Wetlands	Temporary impacts to wetlands	Check temporary impact areas following construction to confirm there are not permanent impacts.	City of Aurora	Construction
<b>14</b>	Wetlands	Permanent impacts to wetlands	The bridge over Sand Creek will be designed to minimize permanent and temporary impacts to wetlands to the maximum practicable extent.	City of Aurora	Design Construction
<b>15</b>	Wetlands	Permanent impacts to wetlands	Seed and mulch disturbance areas adjacent to wetlands to reduce erosion and promote revegetation; plant supplemental vegetation as needed.	City of Aurora	Construction

**Table 4 Summary of Impacts and Mitigation for the Proposed Action (continued)**

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
16	Wetlands	Permanent impacts to wetlands	Work occurring in and near wetlands during construction activities will be monitored to ensure protection of wetlands.	City of Aurora	Design Construction
17	Wetlands	Permanent wetland losses	Final impacts will require a Section 404 permit under the Clean Water Act, and mitigation will be required for all wetland impacts. In coordination with CDOT, mitigation will be identified on-site or wetland credits will be purchased to meet Section 404 permit requirements. A Section 404 permit will be acquired after final design, prior to construction.	City of Aurora	Design
18	Vegetation	Removal of Vegetation (clearing and grubbing)	A revegetation plan will be developed in final design in coordination with the City of Aurora, CDOT, CPW, and US Army Corps of Engineers.  The revegetation plan will be incorporated into the SWMP and seed mixes (also identified in the SWMP) to be used will be specific to upland areas, riparian areas, and wetland areas.  Specific objectives of the revegetation plan will be identified, such as selecting native plants and seed mixes for revegetation that blend the vegetation with existing vegetation, are consistent with vegetation types, growth habits, and soil types, use of native species, mimic surrounding native plant densities and minimizing the spread of noxious and invasive weeds.	City of Aurora CDOT Design Engineering	Design

**Table 4 Summary of Impacts and Mitigation for the Proposed Action (continued)**

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
	Vegetation (continued)	Removal of Vegetation (clearing and grubbing)	The revegetation plan will use adaptive restoration methods and match with native plant communities present within the Triple Creek Greenway Corridor. The seed mix used for revegetation will be approved by the City of Aurora Parks, Recreation, and Open Space and CDOT.		
19	Vegetation	Removal of Vegetation (clearing and grubbing)	Minimize the amount and time period of disturbance to allow revegetation of disturbed areas.	City of Aurora	Design Construction
20	Vegetation	Removal of Vegetation (clearing and grubbing)	Avoid disturbance to existing trees, shrubs, and vegetation, to the maximum extent possible. Identify staging areas and avoidance areas in final plans.	City of Aurora	Design Construction
21	Vegetation	Removal of Vegetation (clearing and grubbing)	All disturbed areas will be revegetated with native grass and forb species. Seed, mulch, and mulch tackifier will be applied in phases throughout construction. Native trees and shrubs will be planted where appropriate.	City of Aurora	Construction
22	Vegetation	Temporary work areas (partial clearing and grubbing)	Areas where vegetation is not completely cleared or grubbed will use geo-textile or other protection measures to leave roots/stumps of trees (such as cottonwood) or shrubs (such as sandbar willow) to regenerate after construction is complete.	City of Aurora	Design Construction
23	Vegetation	Removal of Vegetation (clearing and grubbing)	Temporary erosion control blankets will have flexible natural fibers.	City of Aurora	Design Construction

**Table 4** Summary of Impacts and Mitigation for the Proposed Action (continued)

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
24	Vegetation	Removal of Vegetation (clearing and grubbing)	BMPs such as erosion bales, silt fences, or other sediment control device will be used as sediment barriers and filters adjacent to wetlands, surface waterways, and at inlets where appropriate.	City of Aurora	Construction
25	Vegetation	Removal of Vegetation (clearing and grubbing)	Temporary and permanent check dams will be used where appropriate to slow the velocity of water through roadside ditches and in swales.	City of Aurora	Construction
26	Vegetation	Removal of Vegetation (clearing and grubbing)	Work areas will be limited as much as possible to minimize construction impacts to vegetation.	City of Aurora	Construction
27	Vegetation	Removal of Vegetation (clearing and grubbing)	Clearing and grubbing operations will be limited to the non-nesting season of migratory birds and the non-winter roost season of Bald Eagles. This leaves a period between November 1 to December 31 to remove vegetation in the Triple Creek Greenway Corridor, unless a qualified biologist approves that the area is clear of nesting birds. A qualified biologist can be hired by the City of Aurora or the contractor.	City of Aurora	Design Construction

**Table 4** Summary of Impacts and Mitigation for the Proposed Action (continued)

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
28	Vegetation	Removal of Vegetation in Riparian Areas	A Formal SB 40 Wildlife Certification will be required during final design, prior to project construction. The SB 40 certification will identify the total number of SB 40 trees and aerial square footage of SB 40 shrubs that will be removed as part of project construction. A proper mitigation ratio of trees and shrubs will be identified and planted on-site. These planting locations will either be identified in the SWMP or final design plan set.	City of Aurora CDOT Environmental	Design Construction
29	Noxious Weeds	Spread of noxious weeds	A CDOT Standard Specification Section 217 (Herbicide Treatment) will be incorporated into project design and implemented during construction.  Cleaning and disposal of weed infested soil shall be included in the cost of Item 626 Mobilization.  Noxious weed populations will be mapped and shown in the final design plan set or SWMP.	City of Aurora	Design Construction
30	Noxious Weeds	Spread of noxious weeds	During final design, detailed weed mapping of the study area will be updated. Mapping will be included in the final design plan set and construction documents along with appropriate control methods for noxious weeds.	City of Aurora	Design Construction

**Table 4 Summary of Impacts and Mitigation for the Proposed Action (continued)**

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
31	Noxious Weeds	Spread of noxious weeds	Following noxious weeds mapping and inventory, the potential for spread of identified noxious weeds due to disturbance by construction activities will be analyzed including potential for noxious weeds to spread into wetlands or other sensitive areas. The information will be added to the Specification 217 and final design plan set and construction documents.	City of Aurora	Design Construction
32	Noxious Weeds	Spread of noxious weeds	Use of herbicides will include selection of appropriate herbicides and timing of herbicide spraying.	City of Aurora	Design Construction
33	Noxious Weeds	Spread of noxious weeds	Certified weed-free hay and/or mulch will be used in all revegetated areas.	City of Aurora	Construction
34	Noxious Weeds	Spread of noxious weeds	All construction vehicles will be cleaned of dirt/soil before off-loading at the project to prevent the introduction of noxious weeds. Project staging areas will be treated for noxious weeds prior to construction.	City of Aurora	Construction
35	Noxious Weeds	Spread of noxious weeds	Project design and construction engineer will coordinate with the Arapahoe County weed supervisor, CDOT, local governing bodies, and landowners to assure proper noxious weed management activities.	City of Aurora	Design Construction
36	Noxious Weeds	Spread of noxious weeds	No fertilizers will be used on the project site.	City of Aurora	Construction

**Table 4 Summary of Impacts and Mitigation for the Proposed Action (continued)**

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
37	Wildlife	Disruption and loss of existing habitats and movement corridors	A revegetation plan will be developed in final design plan set and/or construction documents in coordination with the City of Aurora, CDOT, CPW, Arapahoe County, and the USACE for vegetation restoration in areas disturbed by construction activities.	City of Aurora CDOT Environmental	Design Construction
38	Wildlife	Disruption and loss of existing habitats and movement corridors	The new span bridge over Sand Creek is sized to facilitate movement of large animals and will maintain a natural bottom substrate to promote wildlife usage. The area under the span bridge will accommodate a regional trail, the floodplain, and wildlife movement.  Mature habitat adjacent to this new span bridge shall be retained, as much as practicable during construction. The design of the bridge will be done in close coordination with a qualified wildlife biologist to facilitate elements specific to wildlife. The potential for incorporating standard wildlife fencing associated with the bridge will also be evaluated.  Enhancement of vegetation adjacent to this span bridge and wildlife crossing will be evaluated during final design and will be done in close coordination with a qualified wildlife biologist. Wildlife crossing design will incorporate applicable recommendations and guidelines as identified in the <i>FHWA Wildlife Crossing Structure Handbook – Design and Evaluation in North America</i> .	City of Aurora	Design Construction

**Table 4** Summary of Impacts and Mitigation for the Proposed Action (continued)

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
	Wildlife (continued)		<p>The new span bridge will include sufficient spacing for wildlife movement on either side of Sand Creek and maintain a natural substrate for wildlife usage (deer and smaller).</p> <p>Lighting under the new span bridge will not be provided in order to promote usage by wildlife.</p> <p>Enhancement of vegetation adjacent to the span bridge will be evaluated during final design.</p>		
<b>39</b>	Wildlife	Disruption and loss of existing habitats and movement corridors	<p>A revegetation plan will be incorporated into the SWMP during final design in coordination with the City of Aurora Parks, Recreation and Open Space, CDOT, CPW, and the USFWS for use along the Proposed Action alignment in areas disturbed during construction.</p> <p>Specific objectives of the revegetation plan will be identified, such as blending the vegetation with existing vegetation, use of native species, and minimizing the spread of noxious and invasive weeds.</p>	City of Aurora	Design Construction
<b>40</b>	Wildlife	Erosion control measures could entangle animals	Temporary erosion control blankets will have flexible natural fibers.	City of Aurora	Design Construction

Table 4 Summary of Impacts and Mitigation for the Proposed Action (continued)

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
41	Wildlife	Disruption to nesting birds habitat	If construction is to commence between January 1 and October 31, to avoid impacts to nesting raptors and migratory birds in accordance with the Migratory Bird Treaty Act. The City will incorporate a CDOT Special Specification 240 (Protection of Migratory Birds) as part of the final plan set. The Specification 240 will be modified, as needed, to provide protections for any migratory birds that may be present outside of the typical nesting season. A qualified biologist will conduct a nest survey prior to construction. If active nests are found, coordination with CPW and the USFWS is required to determine an appropriate course of action, which may include, but is not limited to, a delay in construction to avoid the breeding season.  In addition, due to the presence of two known active Great-horned Owl ( <i>Bubo virginianus</i> ) nests in the study area, a qualified biologist will conduct a nest survey prior to construction if construction occurs after January 1.	City of Aurora, CDOT Environmental	Prior to Construction

Table 4 Summary of Impacts and Mitigation for the Proposed Action (continued)

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
42	Special Status Species – Federal Threatened/ Endangered Species	Potential loss of Ute ladies'-tresses orchid habitat	<p>A qualified biologist will conduct a survey a season prior to construction for Ute ladies'-tresses orchid habitat during the blooming season of the orchid (late July through August) to identify if the orchid is present.</p> <p>If no survey is conducted, then presence must be assumed. Coordinate with the USFWS during final design for effects determination.</p> <p>Incorporate erosion control BMPs to avoid sediment in wetlands and along Sand Creek, where potential habitat exists.</p> <p>The City will implement the BMPs identified in the Central Shortgrass Prairie Programmatic Biological Opinion in areas of presumed presence for state species of special concern.</p> <p>The City will consult with the USFWS to confirm the proposed effects on the Ute ladies'-tresses orchid and obtain any necessary clearances prior to construction activities taking place.</p> <p>Mitigation may be required if any plants are found and cannot be avoided by the Proposed Action.</p> <p>Mitigation measures will be identified in coordination with the USFWS prior to construction activities occurring.</p> <p>Minimize disturbance and vegetation removal in potential habitat areas.</p>	City of Aurora, CDOT Environmental USFWS	Design Construction

Table 4 Summary of Impacts and Mitigation for the Proposed Action (continued)

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
43	Special Status Species – Species with other Federal Protection	Potential impacts to Bald Eagles and/or their habitat	<p>Monitoring for eagle winter-roosts and active eagle nests will continue up to and during construction. Close coordination will occur with USFWS and CPW. A meeting will be scheduled with these agencies no less than 6 months prior to construction activities to determine eagle activity and identify any existing nests. Surveys will be conducted in the Triple Creek Greenway Corridor from November 15 through August 15 each year to identify winter-roosting locations and active nest locations.</p> <p>Should active winter-roosts or active eagle nests be identified, the appropriate mitigation, such as sequencing of construction activities and construction timing and duration restrictions, will be determined through coordination with USFWS and CPW. Ongoing coordination will occur with USFWS and CPW to discuss monitoring results during the November 15 through August 15 dates for the duration of the project.</p>	City of Aurora	Design Construction

**Table 4** Summary of Impacts and Mitigation for the Proposed Action (continued)

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
<b>44</b>	Special Status Species – Colorado State Threatened/ Endangered Species	Potential loss of Western Burrowing Owl habitat associated with black-tailed prairie dog colonies.	A qualified biologist will conduct a survey prior to construction for nesting Western Burrowing Owls in prairie dog colonies if construction occurs between March 15 and October 31. If nesting burrowing owls are found, then coordination with CPW and USFWS must take place to identify mitigation. Mitigation will include providing a 150-foot buffer around any active burrowing owl burrows.	City of Aurora	Prior to Construction
<b>45</b>	Special Status Species – Colorado State Species of Special Concern – Swift Fox	Potential loss of habitat for the Swift Fox ( <i>Vulpes velox</i> )	A qualified biologist will conduct a survey prior to construction to identify the presence of swift fox or their dens. If dens are identified, coordination with CPW will occur to identify more site-specific mitigation.	City of Aurora	Prior to Construction
<b>46</b>	Special Status Species – Colorado State Species of Special Concern – Black-tailed prairie dog	Loss of Black-tailed prairie dogs ( <i>Cynomys ludovicianus</i> )	Surveys for black-tailed prairie dogs will occur during final design and prior to construction. The City of Aurora's policy on removal/relocation of prairie dogs will be followed. Preference will be given to passive relocation and non-lethal removal.	City of Aurora	Prior to Construction

Table 4 Summary of Impacts and Mitigation for the Proposed Action (continued)

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
47	Special Status Species – Colorado State Species of Special Concern	Potential loss of habitat for: <ul style="list-style-type: none"> <li>■ American Peregrine Falcon (<i>Falco peregrinus anatum</i>) – State Special Concern</li> <li>■ Ferruginous Hawk (<i>Buteo regalis</i>) – State Special Concern</li> <li>■ Long-billed Curlew (<i>Numenius americanus</i>) – State Special Concern</li> <li>■ Mountain Plover (<i>Charadrius montanus</i>) – State Special Concern</li> </ul>	<p>Coordination will occur with the USFWS whenever an active migratory bird nest is found to identify appropriate species-specific protection.</p> <p>Minimize disturbance and vegetation removal in potential habitat areas.</p> <p>A revegetation plan will be incorporated into the SWMP during final design in coordination with the City of Aurora Parks, Recreation, and Open Space, CPW, CDOT, and the USFWS for use along the Proposed Action alignment in areas disturbed during construction.</p> <p>Specific objectives of the revegetation plan will be identified, such as blending the vegetation with existing vegetation, use of native species, and minimizing the spread of noxious and invasive weeds.</p>	City of Aurora	Design Prior to Construction Construction
48	Special Status Species – Colorado State Species of Special Concern	Potential loss of habitat for the northern leopard frog	<p>A survey will be conducted between May 1 and September 1 prior to construction to determine if Northern Leopard Frogs are present in the Proposed Action footprint. If frogs are found, coordination with CPW will occur to safely remove any tadpoles or adults and relocate them to a protected location.</p> <p>Pesticide application near permanent bodies of water will be restricted during the period of frog metamorphosis (June to August).</p>	City of Aurora	Prior to Construction Construction Maintenance

**Table 4 Summary of Impacts and Mitigation for the Proposed Action (continued)**

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
<b>49</b>	Archaeological Resources	The potential to impact previously unknown resources.	Should unidentified archaeological resources be discovered during any phase of construction, work will stop until the CDOT senior staff archaeologist is contacted and the resources have been evaluated in terms of the National Register eligibility criteria.	City of Aurora	Construction
<b>50</b>	Paleontological Resources	The potential to impact previously unknown resources.	If disturbance yields any subsurface bones or other potential fossils anywhere within the Project area during construction, then work in the area should cease and the CDOT Staff Paleontologist, currently Nicole Peavey 303-747-9632, should be notified immediately to assess their significance and make further recommendations.  When the project design plans are finalized, the CDOT Staff Paleontologist will examine them and determine the amount (lateral extent and depth) of impact to the Denver Formation, and the amount of construction monitoring, if any.	City of Aurora CDOT Environmental	Construction
<b>51</b>	Land Use	Conversion of small amounts of parks, recreation, and open space, residential and agricultural/pasture properties and transportation use.	For mitigation commitments, see parks, recreation, open space and Section 4(f) and 6(f), and right-of-way.	City of Aurora	Design Right-of-Way Acquisition
<b>52</b>	Social Resources and Environmental Justice	Delays and detours during construction.	Coordinate with the local communities to provide advance notification of construction delays. Use construction practices that will minimize the disruption of traffic flow.	City of Aurora	Construction

**Table 4 Summary of Impacts and Mitigation for the Proposed Action (continued)**

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
53	Social Resources and Environmental Justice	Impaired access to residences, delays and detours during construction.	Maintain access to residential dwellings at all times throughout construction.  Maintain or provide alternate access to ensure connectivity between the transportation network and individual parcels.	City of Aurora	Construction
54	Social Resources and Environmental Justice	Delays and detours during construction.	Implement a way-finding and signage system to ease travel conditions for motorists.	City of Aurora	Construction
55	Right-of-Way	Property needed for right-of-way acquisition	Property acquisition for right-of-way will conform to requirements set forth in the Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970 (Public Law 91-646 as amended).	City of Aurora	Design Right-of-Way
56	Right-of-Way	Permanent and temporary easements	Easements will be obtained through agreement between CDOT, the City of Aurora, and other affected property owners. Stipulations included in the easements will be followed.	City of Aurora	Design Right-of-Way
57	Utilities	Grading changes, physical conflicts with utilities	Where relocations are required due to conflicts with the Proposed Action, designs to relocate the utility will be developed with the utility company or public utility department. Utility adjustments that are required will be reviewed by each affected company or public utility department. Proper detours and advance notice will be coordinated with service providers to allow delivery of uninterrupted utility service during construction.	City of Aurora	Prior to construction

Table 4 Summary of Impacts and Mitigation for the Proposed Action (continued)

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
58	Parks, Recreation, Open Space and Section 4(f) and 6(f) Resources	Impacts to Open Space	<p>The specific measures to compensate for impacted open space will be determined with each funding partner prior to construction but will include:</p> <ul style="list-style-type: none"> <li>■ Where possible provide replacement land of equivalent value,</li> <li>■ Payback of funding received relative to the current value of the property being converted, and monetary penalty payments, among other measures.</li> </ul>	City of Aurora	Construction
59	Parks, Recreation, Open Space and Section 4(f) and 6(f) Resources	Impacts to Coal Creek Arena from increase to floodplain/floodway	<p>The main electrical building and the abandoned restroom building will be consolidated to a single building that will be constructed near the existing water well with a finished floor elevation above the proposed 100-year floodplain elevation.</p> <p>The announcer's booth stilts will be reinforced to improve the integrity of the structure and protect it from increased flooding hazards caused by floating debris.</p>	City of Aurora	Prior to construction
60	Parks, Recreation, Open Space and 6(f) Resources	Impacts to Section 6(f) parcels	To offset the permanent impacts to the Section 6(f) Project #748 Springhill Park Addition by conversion to a non-recreation use, a replacement in-kind with land of at least current fair market value and of reasonable equivalent usefulness and location will occur.	City of Aurora	Prior to construction

**Table 4** Summary of Impacts and Mitigation for the Proposed Action (continued)

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
61	Parks, Recreation, Open Space and 6(f) Resources	Triple Creek Trail impacts to existing alignment and Coal Creek Arena	Trail realignment and new trail spur will be constructed. The existing Triple Creek Trail will be open until proposed trail realignment is completed. Access to the trail will be maintained during construction.	City of Aurora	Construction
62	Section 4(f) Resources	Impacts to Section 4(f) resources <ul style="list-style-type: none"> <li>■ Environmental Day Camp</li> <li>■ Triple Creek Trail</li> <li>■ Coal Creek Arena</li> </ul>	<p>CDOT and FHWA will seek public review and comment regarding the impacts and mitigation for the Section 4(f) properties, through the EA review and comment process.</p> <ul style="list-style-type: none"> <li>■ Environmental Day Camp – Areas temporarily impacted during construction will be revegetated and restored to pre-construction conditions.</li> <li>■ Triple Creek Trail – Trail realignment and new trail spur will be constructed. The existing Triple Creek Trail will be open until proposed trail realignment is completed.</li> <li>■ Coal Creek Arena – The main electrical building and the abandoned restroom building will be consolidated to a single building that will be constructed near the existing water well with a finished floor elevation above the proposed 100-year floodplain elevation.</li> </ul> <p>The announcer's booth stilts will be reinforced to improve the integrity of the structure and protect it from increased flooding hazards caused by floating debris.</p>	City of Aurora	Design Construction

Table 4 Summary of Impacts and Mitigation for the Proposed Action (continued)

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
63	Noise	Temporary noise during construction	<p>Noise abatement barriers to mitigate traffic noise impacts were evaluated. None of the barriers were found to meet the requirements to be both feasible and reasonable. Therefore, no noise abatement barriers are recommended for the Proposed Action.</p> <p>The Proposed Action abuts several residences and parks. To minimize construction noise levels, typical best practices will be incorporated into construction contracts where it is appropriate to do so. These may include:</p> <ul style="list-style-type: none"> <li>■ Notify neighbors in advance when construction noise may occur.</li> <li>■ Keep noisy activities as far from sensitive receptors as possible.</li> <li>■ Exhaust systems on equipment be in good working order. Equipment maintained on a regular basis and will be subject to inspection by the construction project manager to ensure maintenance.</li> </ul>	City of Aurora	Design Construction

Table 4 Summary of Impacts and Mitigation for the Proposed Action (continued)

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
	Noise (continued)		<ul style="list-style-type: none"> <li>■ Properly designed engine enclosures and intake silencers will be used where appropriate.</li> <li>■ New equipment subject to new product noise emission standards.</li> <li>■ Stationary equipment located as far from sensitive receptors as possible.</li> <li>■ Perform construction activities in noise sensitive areas during hours that are least disturbing to nearby residents.</li> </ul>		
64	Visual Resources/ Aesthetics	Visual contrast of grading	<ul style="list-style-type: none"> <li>■ Avoid slopes greater than 3:1 to minimize erosion and difficulties with revegetation on steep slopes.</li> <li>■ Select native plant species that produce dense, fibrous roots to help prevent soil erosion.</li> </ul>	City of Aurora	Design Construction
65	Visual Resources/ Aesthetics	Visual contrast of Sand Creek bridge structure	<ul style="list-style-type: none"> <li>■ Select colors, materials, forms, and finishes of bridge and wing walls that blend in and complement landscape features.</li> <li>■ Avoid reflective surfaces.</li> <li>■ Coordination of project design with CDOT landscape architect.</li> </ul>	City of Aurora	Design Construction

**Table 4** Summary of Impacts and Mitigation for the Proposed Action (continued)

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
66	Visual Resources/Aesthetics	Visual contrast of native vegetation removal in Triple Creek Greenway Corridor	<ul style="list-style-type: none"> <li>■ Select plants and seed mixes that are consistent with native vegetation types, growth habits and soil types.</li> <li>■ Plan vegetation clearing edges that create a naturalized line and transition with the landscape setting.</li> <li>■ Temporary riparian and wetland impacts will be revegetated with appropriate native plants which will mimic adjacent habitats.</li> <li>■ Mimic surrounding plant density, spacing and species composition.</li> <li>■ Blend existing natural materials from the site into the project area by saving and reusing stumps, tree logs or native rocks.</li> </ul>	City of Aurora	Design Construction
67	Visual Resources/Aesthetics	Visual Contrast of intersection fill slopes	<ul style="list-style-type: none"> <li>■ Introduce native plants that provide and contribute to an aesthetic vista, in a manner that does not interfere with implementation of the project or result in inappropriate costs.</li> <li>■ Create a naturalized transition with the adjacent landscape setting.</li> </ul>	City of Aurora	Design Construction
68	Visual Resources/Aesthetics	Visual contrast of native vegetation removal in upland prairie	Create a continuous planting pattern across medians and roadway edges that will blend in with adjacent shortgrass prairie vegetation.	City of Aurora	Design Construction

**Table 4** Summary of Impacts and Mitigation for the Proposed Action (continued)

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
69	Visual Resources/Aesthetics	Visual contrast to residential viewers	Provide appropriate vegetation screening for residents adjacent to roadway and Picadilly intersection	City of Aurora	Design Construction
70	Visual Resources/Aesthetics	Landform and vegetation contrast of water quality ponds and drainage features	Reduce the visual contrast of the geometric shape by rounding corners and blending pond edges and drainage channel with existing grades through slope rounding techniques to establish a naturalized shape.	City of Aurora	Design Construction
71	Visual Resources/Aesthetics	Visual contrast of new building at Coal Creek Arena	Building will be visually consistent with surrounding setting	City of Aurora	Design Construction
72	Energy	Energy consumption due to construction	Recycled materials, such as asphalt, will be used to the maximum extent possible. The contractor will keep equipment well maintained, minimize equipment idling, and encourage carpooling to and from the work site. Staging areas will be located as close to the construction as possible.	City of Aurora	Construction
73	Hazardous Materials	Potential to encounter hazardous materials	An individual, property-specific Phase I Environmental Site Assessment is recommended prior to acquisition of property from Map I.D. # 1 and 1A.	City of Aurora	Design Construction

Table 4 Summary of Impacts and Mitigation for the Proposed Action (continued)

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
74	Hazardous Materials	Potential to encounter hazardous materials	CDOT Standard Specifications 250 (Environmental, Health and Safety Management) for assessment, handling, transport, and disposal of hazardous materials will be implemented if hazardous materials are encountered during construction.	City of Aurora	Design Construction
75	Hazardous Materials	Potential to encounter hazardous materials – groundwater	Structural excavation, such as caisson construction, may require the dewatering of contaminated groundwater. If dewatering is necessary, groundwater brought to the surface will be managed according to Section 107.25 of the <i>CDOT Standard Specifications for Road and Bridge Construction</i> . Dewatering in the vicinity of Buckley AFB will require specific management and disposal due to groundwater contamination (Map I.D. # 1, 1A, 2, 3, 4, 5 6, 7, and 8).	City of Aurora	Design Construction
76	Hazardous Materials	Potential to encounter hazardous materials – lead containing paint (LCP), asbestos containing material (ACM)	Due to the potential presence of ACM and LCP, an ACM and LCP survey will be conducted on any structures to be demolished as part of this project, and the regulated materials should be managed in accordance with Section 250.07 and 250.04, of the <i>CDOT Standard Specifications for Road and Bridge Construction</i> .	City of Aurora	Design Construction

Table 4 Summary of Impacts and Mitigation for the Proposed Action (continued)

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
77	Hazardous Materials	Potential to encounter hazardous materials – monitoring wells	Several wells, as shown on the plans, shall be protected by fence (plastic). Although not expected, if the wells are impacted during construction, the well must be abandoned and plugged according to Section 202.02 of the <i>CDOT Standard Specifications for Road and Bridge</i> . If wells are impacted, further coordination with Buckley AFB is required.	City of Aurora	Design Construction
78	Hazardous Materials	Potential to encounter hazardous materials – contaminated soil	Contaminated soil may be encountered during project construction due to illicit dumping in the area and the presence of contaminated groundwater west of Sand Creek (Map I.D. # 1, 1A, 2, 3, 4, 5 6, 7, and 8). A material handling plan and health and safety plan, is recommended as required by Section 250.03 of the <i>CDOT Standard Specifications for Road and Bridge Construction</i> .	City of Aurora	Design Construction
79	Hazardous Materials	Potential to encounter hazardous materials – asbestos contaminated soil	Specifications for Road and Bridge Construction will be prepared. Asbestos-contaminated soil is not anticipated during excavation, but if it is encountered, FHU recommends that the CDOT Asbestos-Contaminated Soil Management Standard Operating Procedure (CDOT, 2011) be followed for this project.	City of Aurora	Design Construction

**Table 4** Summary of Impacts and Mitigation for the Proposed Action (continued)

#	Mitigation Category	Impact	Mitigation Commitment from Source Document	Responsible Branch	Timing/Phase that Mitigation will be Implemented
80	Project Completion	All construction impacts	Before final conclusion of the Project and 45 days prior to Project completion, the Contractor/City of Aurora shall submit to CDOT a final memorandum stating that all of the environmental mitigation commitments listed in <b>Table 4</b> Summary of Impacts and Mitigation for the Proposed Action of the Environmental Assessment (EA), 6 <sup>th</sup> Avenue Extension, (included in the Reference Documents) have been documented and fulfilled, along with a summary detailing any of the environmental BMPs that were used on the Project. The memo should be addressed to the CDOT Region 1 environmental project manager (currently Carol Coates) at 303-757-9926. This summary of completion will be reviewed by CDOT and forwarded to FHWA for Acceptance before Project close-out can occur.	City of Aurora	Construction

## WHAT PERMITS ARE REQUIRED FOR THIS PROJECT?

In addition to the National Environmental Policy Act (NEPA) evaluation of environmental impacts provided by this EA, the Proposed Action must comply with federal and state laws and regulations, including the Clean Water Act, Endangered Species Act, Migratory Bird Treaty Act, and others. This compliance includes obtaining all of the required permits, performing preliminary and construction surveys, completing reviews, and obtaining other approvals as required by local agency, State, and Federal regulations. The following permits are likely to be required prior to construction. This list may change with final design.

**Air Pollutant Emissions Notice Permit**—will be needed from CDPHE as well as other regional and local authorities, as required. The construction contractor would acquire this permit.

**Conditional Letter of Map Revision (CLOMR)**—A CLOMR is FEMA's comment on a proposed project that would, upon construction, affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective Base Flood Elevations, or the Special Flood Hazard Area. The City of Aurora will be required to obtain a CLOMR from FEMA before construction is initiated.

**Construction Access Permits**—Construction access permits are required to be obtained by the construction contractor for detours and lane closures.

**Construction Dewatering Operations Permit**—The contractor will obtain a Colorado Discharge Permit System Construction Dewatering Permit from CDPHE.

**Easements**—The City of Aurora will obtain any required easements with Aurora Water, Arapahoe County, and City of Aurora.

**Floodplain Development Permit**—The City of Aurora will obtain a floodplain development permit from the Floodplain Administrator for any construction within the floodplain.

**Section 404 Permit**—Under Section 404(e) of the Clean Water Act, a USACE Section 404 permit will be required for the project permanent wetland impacts. The Nationwide Section 404 permit will be acquired prior to project construction activities occurring. In addition to the Section 404 permit, CDOT will require that a Wetland Finding Report and a Functional Assessment of Colorado Wetlands (FACWet) Analysis be completed to address permanent impacts greater than 500 square feet and permanent impacts greater than 0.10 acre.

**SB 40 Certification**—SB 40 requires any agency of the state to obtain wildlife certification from the CPW when the agency plans construction in “. . . any stream or its bank or tributaries. . .”. The City of Aurora will obtain SB 40 certification, as required.

**Stormwater Construction Permit**—A Colorado Discharge Permit System-Stormwater Construction Permit is required to protect state waters and ensure the quality of stormwater runoff on any construction activity that disturbs at least one acre of land. The permits are obtained from the CDPHE Water Quality Control Division. The City of Aurora will obtain the permit and likely will transfer it to the contractor prior to construction.

**Survey Permit**—Construction contractor will be required to obtain a Survey Permit for any survey work within CDOT right-of-way.

**Traffic**—Construction contractor will be required to contact CDOT Traffic Section for any additional permitting required within CDOT right-of-way as design is finalized.

**Utility Permit**—Construction contractor will be required to obtain a Utility Permit for any work to install or maintain a utility.

## WHAT OUTREACH AND OPPORTUNITIES FOR STAKEHOLDER PARTICIPATION WERE PROVIDED?

Outreach, coordination, and consultation have been conducted with a number of federal, state and local agencies and stakeholders during the preparation of this EA. Documentation is provided in **Appendix B** of this EA. The agencies and stakeholders include:

- Arapahoe County
- Buckley AFB
- City of Aurora
- CDOT
- Colorado Parks and Wildlife (CPW)
- Colorado Department of Public Health and Environment (CDPHE)
- Colorado State Historic Preservation Officer/History Colorado (SHPO)
- FHWA
- United States Environmental Protection Agency (USEPA)
- United States Fish and Wildlife Service (USFWS)
- USACE
- Urban Drainage and Flood Control District (UDFCD)
- Public Highway E-470 Authority

The alternative development and screening process included a comprehensive public and agency involvement program with those listed above, which complemented the technical studies and analyses conducted by the project team. Public involvement included general public meetings, one-on-one meetings with property owners, webpage information, and a range of opportunities to comment through email, phone, and written comments. The alternative development and screening process has received public and agency input through the following meetings and outreach:

- Public Open Houses – Invited stakeholders included the general public, community, agency, and municipal representatives. At the first public meeting held on December 3, 2014, the project team presented and solicited input on the initial six alignments and solicited input from the public on any other alternative options. The second meeting held March 18, 2015 presented four refined alignments and solicited input from the public on their preference among these alignments.
- PMT meetings have been held monthly beginning in September 2014 with City of Aurora. The PMT consisted of key City of Aurora staff involved in the decision making for the project. During PMT meetings, alternative alignments were discussed in specific detail. Input was solicited from each PMT member to obtain information on screening criteria, alternative components, and specific concerns. These items were then included in the alternative development and screening process.
- TWG meetings have been held monthly beginning in September 2014 with City of Aurora, Arapahoe County, CDOT, FHWA, Buckley AFB, UDFCD, and E-470 Public Highway Authority. The TWG consisted of key stakeholders and agencies with interest in the project. TWG members provided specific input on alternative screening criteria and alternative alignments. Recommendations and concerns from TWG members were included in the ultimate refinement and selection of the Proposed Action.
- Additional coordination meetings were held with City of Aurora Parks Recreation and Open Space (PROS) Department, Arapahoe County Open Space Department, Great Outdoors Colorado (GOCO), as well as other City and County staff. Discussions with these groups centered around avoidance, minimization, and mitigation of impacts to parks, recreation, and open space resources. Input from these groups was considered carefully in the screening and development of the Proposed Action.
- An agency coordination meeting was held on November 9, 2015. Invitation letters were sent to CDOT, FHWA, CDPHE, CPW, USEPA, USACE, USFWS, SHPO and are attached to **Appendix B** of this EA. Invited agencies were selected because of their jurisdiction over a particular resource in the study area or because of regulatory requirements. Meeting attendees included CDOT, CDPHE, USEPA, and SHPO. There were no concerns expressed from the agencies regarding the project.
- Additional coordination meetings between CDOT, FHWA and the City of Aurora.

Input received from the public and stakeholders was thoroughly reviewed and taken into consideration during the alternatives development and screening process. More information on the alternatives analysis and screening process is presented in **Appendix A1 Alternatives Technical Report**.

On June 7, 2016, the USFWS sent a letter concurring with the determination that the impacts resulting from the project are not likely to adversely affect the continued existence of the Ute ladies'-tresses orchid or its habitat. **Appendix B** of this EA contains documentation of agency coordination and consultation to date.

On July 7, 2015, the SHPO was consulted with in accordance with Section 106 for concurrence with the Area of Potential Effect (APE). The SHPO concurred with the APE in August 2015. The SHPO was consulted for the concurrence with the determinations for eligibility of resources for listing on the National Register of Historic Places in the APE and the effects determinations on February 18, 2016. The SHPO concurred with the determinations of eligibility and effects and concurred with the findings of no historic properties affected on February 23, 2016. Section 106 consulting parties, Aurora History Museum, were also involved. Section 106 Tribal consultation was initiated by FHWA in a letter to Tribal governments dated January 11, 2016. **Appendix B** of this EA contains documentation of agency coordination and consultation to date.

Section 106 of the National Historic Preservation Act (as amended) and the Advisory Council on Historic Preservation regulations (36 Code of Federal Regulations [CFR] 800.2[c][2][ii]) mandate that federal agencies coordinate with interested Native American tribes in the planning process for federal undertakings. Consultation with Native American tribes recognizes the government-to-government relationship between the United States government and sovereign tribal groups. In that context federal agencies must acknowledge that historic properties of religious and cultural significance to one or more tribes may be located on ancestral, aboriginal, or ceded lands beyond modern reservation boundaries.

Consulting tribes are offered the opportunity to identify concerns about cultural resources and comment on how the project might affect them. If it is found that the project will impact properties that are eligible for inclusion on the National Register of Historic Places and are of religious or cultural significance to one or more consulting tribes, their role in the consultation process may also include participation in resolving how best to avoid, minimize, or mitigate those impacts. By describing the proposed undertaking and the nature of any known cultural sites, and consulting with the interested Native American community, FHWA and CDOT strive to effectively protect areas important to American Indian people.

In January 2016, FHWA contacted seven federally recognized tribes with an established interest in Arapahoe County, Colorado, and invited them to participate as consulting parties including:

- Apache Tribe of Oklahoma
- Cheyenne and Arapaho Tribes of Oklahoma
- Comanche Nation of Oklahoma
- Kiowa Tribe of Oklahoma
- Northern Arapaho Tribe
- Northern Cheyenne Tribe
- Pawnee Nation of Oklahoma

The Comanche Nation of Oklahoma responded to the solicitation, indicating it was not interested in participating as a consulting tribe. The Northern Cheyenne Tribe requested consulting status as well as copies of archaeological survey documents specific to the project, which were provided in February 2016. No other tribal governments elected to respond.

## WHAT ADDITIONAL OPPORTUNITIES FOR STAKEHOLDER PARTICIPATION WILL BE PROVIDED?

Stakeholders include the public, interest groups, property owners, and various agencies. Coordination and consultation with federal, state and local agencies is ongoing and will continue through completion of the NEPA process, in final design, and during project implementation, as appropriate.

Once this EA has been released for public review, a public meeting will be held. Members of the public will have the opportunity to comment during the public comment period in the following ways:

- Submit written or verbal comments at the public meeting
- Submit written comments by mail or email

Information on the date and location of the public meeting and on how to comment is provided at the beginning of this EA, and on the project webpage ([www.auroragov.org/6thaveparkway](http://www.auroragov.org/6thaveparkway)). The City of Aurora, CDOT and FHWA will review and consider all public comments received during the public comment period. Responses to public comments will be provided in a decision document.

Public information will also be provided prior to and during construction, via the project website and local media, to inform regarding construction schedules, delays, or other issues affecting the public during construction.

## REFERENCES

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- CDOT. 2011. Asbestos-Contaminated Soil Management Operating Procedure. August 22.
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- FHU. 2016b. *Conceptual Design Plans for the 6<sup>th</sup> Avenue Parkway Extension Environmental Assessment Appendix A2*
- FHU. 2016c. *Traffic Analysis Technical Report for the 6<sup>th</sup> Avenue Parkway Extension Environmental Assessment Appendix A3*
- FHU. 2016d. *Air Quality Technical Report for the 6<sup>th</sup> Avenue Parkway Extension Environmental Assessment Appendix A4*
- FHU. 2016e. *Wetlands Delineation Technical Report for the 6<sup>th</sup> Avenue Parkway Extension Environmental Assessment Appendix A7*
- FHU. 2016f. *Biological Resources Technical Report for the 6<sup>th</sup> Avenue Parkway Extension Environmental Assessment Appendix A8*
- FHU. 2016g. *Land Use Technical Report for the 6<sup>th</sup> Avenue Parkway Extension Environmental Assessment Appendix A12*
- FHU. 2016h. *Social Resources and Environmental Justice Technical Report for the 6<sup>th</sup> Avenue Parkway Extension Environmental Assessment Appendix A13*
- FHU. 2016i. *Right-of-Way and Relocations Technical Report for the 6<sup>th</sup> Avenue Parkway Extension Environmental Assessment Appendix A14*
- FHU. 2016j. *Parks, Resources, Open Space and Section 4(f) and 6(f) Analysis Technical Report for the 6<sup>th</sup> Avenue Parkway Extension Environmental Assessment Appendix A16*
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FHU. 2016k. *Traffic Noise Impact and Abatement Analysis Technical Report for the 6<sup>th</sup> Avenue Parkway Extension Environmental Assessment Appendix A17*

FHU. 2016l. *Visual Resources Technical Report for the 6<sup>th</sup> Avenue Parkway Extension Environmental Assessment Appendix A18*

FHU. 2016m. *Energy Technical Report for the 6<sup>th</sup> Avenue Parkway Extension Environmental Assessment Appendix A19*

FHU. 2016n. *Hazardous Materials Technical Report for the 6<sup>th</sup> Avenue Parkway Extension Environmental Assessment Appendix A20*

FHU. 2016o. *Cumulative Impacts Technical Report for the 6<sup>th</sup> Avenue Parkway Extension Environmental Assessment Appendix A21*

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