

VISUAL RESOURCES TECHNICAL REPORT
FOR THE
6TH AVENUE PARKWAY EXTENSION
ENVIRONMENTAL ASSESSMENT

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TABLE OF CONTENTS

	<u>Page</u>
1. Introduction to Analysis-----	1
1.1 Proposed Action -----	1
1.2 No Action Alternative -----	3
1.3 Visual Impact Assessment Scoping-----	3
2. VIA Methodology and Project Characteristics -----	5
2.1 VIA Methodology -----	5
2.2 Regulatory Context and Public and Stakeholder Involvement-----	7
2.2.1 NEPA -----	7
2.2.2 Sections 4(f) and 6(f)-----	7
2.2.3 City of Aurora Triple Creek Greenway Corridor Open Space -----	7
2.2.4 Public and Stakeholder Involvement -----	8
2.3 Visual Attributes of the Proposed Action-----	9
2.3.1 Roadway -----	9
2.3.2 SH 30/6 th Avenue Intersection, Bridge, and Triple Creek Trail Connection -----	9
2.3.3 Water Quality Ponds and Drainage-----	11
2.3.4 Picadilly Road Intersection -----	11
2.3.5 E-470/6 th Avenue Parkway Interchange Connection -----	11
2.4 Area of Visual Effect and Landscape Units -----	14
3. Affected Environment-----	17
3.1 Regional Context of the AVE -----	17
3.1.1 Project Features with the Greatest Visual Effects-----	17
3.1.2 Anticipated Future Conditions of the Visual Resources in the AVE-----	17
3.1.3 Future Visual Resources Considered to be at Risk-----	19
3.2 Visual Resources Inventory-----	19
3.2.1 Inventory Criteria-----	19
3.2.2 Visual Character -----	20
3.2.3 Viewers-----	23
3.2.4 Visual Quality -----	27
3.2.5 “Views from the Road”-----	28
4. Impact Evaluation -----	32
4.1 Evaluation Process and Criteria -----	32
4.2 Evaluation Criteria-----	32
4.2.1 Compatibility with Visual Character-----	32
4.2.2 Viewer Sensitivity -----	33
4.2.3 Impact to Visual Quality -----	33
4.3 Triple Creek Greenway Corridor Landscape Unit Evaluation -----	34
4.3.1 Visual Character Compatibility Evaluation -----	34
4.3.2 Viewer Sensitivity Evaluation -----	37

4.3.3	Impacts to Visual Quality-----	38
4.3.4	Section 4(f) and 6(f) Impacts-----	42
4.4	Upland Area Landscape Unit Evaluation-----	42
4.4.1	Visual Character Compatibility Evaluation-----	42
4.4.2	Viewer Sensitivity Evaluation-----	43
4.4.3	Impacts to Visual Quality-----	44
5.	Mitigation Measures-----	46
6.	References-----	47

APPENDICES

APPENDIX A – VISUAL CHARACTER INVENTORY

APPENDIX B – RESOURCE IMPACT TABLE

APPENDIX C – RESOURCE MITIGATION TABLE

APPENDIX D – LIST OF KEY TERMS

LIST OF FIGURES

	<u>Page</u>
Figure 1	Proposed Action and Study Area----- 3
Figure 2	FHWA VIA Process Flow Diagram----- 6
Figure 3	Simulated View of SH 30/6 th Avenue Intersection and Bridge Concept----- 10
Figure 4	Simulated View of Picadilly Road Intersection Concept----- 12
Figure 5	Simulated View of E-470/6 th Avenue Parkway Intersection Concept----- 13
Figure 6	Project Visibility and Traveler Viewshed Map----- 15
Figure 7	Area of Visual Effect and Landscape Units Map----- 15
Figure 8	Trails, Land Use, and Regional Context for Tollgate Creek/Sand Creek Watershed----- 18
Figure 9	Visual Character Map and Typical Cross Section----- 21
Figure 10	Triple Creek Trail Viewshed Map----- 24
Figure 11	Residential Viewsheds Map----- 26
Figure 12	Traveler Viewshed of the Proposed Action----- 31
Figure 13	Simulated View of Cross Section of Roadway and Bridge Across Triple Creek Greenway Corridor----- 35
Figure 14	Simulated View from Triple Creek Trail----- 40
Figure 15	Simulated View of 6 th Avenue Parkway and Bridge from Roadway----- 41

LIST OF TABLES

	<u>Page</u>
Table 1	Visual Quality – Triple Creek Greenway Corridor----- 29
Table 2	Visual Quality – Upland Area Landscape Unit----- 30
Table 3	Visual Character Compatibility Matrix – Triple Creek Greenway Corridor Landscape Unit ----- 35
Table 4	Viewer Sensitivity Matrix – Triple Creek Greenway Corridor Landscape Unit----- 37
Table 5	Impacts to Visual Quality Matrix – Triple Creek Greenway Corridor Landscape Unit ----- 39
Table 6	Visual Character Compatibility Matrix – Upland Area Landscape Unit ----- 43
Table 7	Viewer Sensitivity Matrix – Upland Area Landscape Unit----- 44
Table 8	Impacts to Visual Quality Matrix – Upland Area Landscape Unit ----- 45

LIST OF ACRONYMS

AFB.....	Air Force Base
AVE	Area of Visual Effects
CDOT	Colorado Department of Transportation
E-470	E-470 Tollway
EA.....	Environmental Assessment
FHWA	Federal Highway Administration
GIS	Geographic Information System
GOCO.....	Great Outdoors Colorado
GPS.....	Global Positioning System
LiDAR	Light Detection and Ranging
LWCF	Land and Water Conservation Fund
mph.....	miles per hour
NEPA.....	National Environmental Policy Act
PMT	Project Management Team
PROS	Parks Recreation and Open Space
SH 30	State Highway 30
TWG	Technical Working Group
UDFCD	Urban Drainage and Flood Control District
VIA.....	Visual Impact Assessment

ACKNOWLEDGEMENT

Project perspective illustrations were prepared by Frank Miltenberger, Landscape Architect.

1. INTRODUCTION TO ANALYSIS

This technical report has been prepared in support of the 6th Avenue Parkway Extension Environmental Assessment (EA) extending 6th Avenue from State Highway 30 (SH 30) to the E-470 Tollway (E-470). This technical report evaluates the effects of the Proposed Action and the No Action Alternative with respect to visual resources.

1.1 Proposed Action

The Proposed Action would extend the 6th Avenue Parkway for approximately 2 miles along a new alignment, connecting existing 6th Avenue/SH 30 to the west with the existing 6th 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.

Six initial alternatives were developed and screened through three screening levels to identify the Proposed Action. The alternatives screening is summarized in **Appendix A1 Alternatives Technical Report** of the EA. Details of the Proposed Action are presented in **Appendix A2 Conceptual Design Plans** of the EA.

The Proposed Action is shown on **Figure 1**. Major elements of the Proposed Action are identified by number from west to east on **Figure 1**, and include the following:

Element 1. Tie into existing 6th Avenue/SH 30: 6th Avenue/SH 30 is an existing two-lane arterial. At the western end of the Proposed Action, a signalized “thru-tee” type intersection would be constructed connecting the Proposed Action roadway to existing 6th Avenue/SH 30. This new signalized intersection would include bypass lanes for the eastbound SH 30 through movement or a thru-tee signalized intersection with bypass lanes for both the eastbound SH 30 through movement. The tie-in would be an urban curb and gutter section with three 12-foot travel lanes in each direction to connect to future 6-lane section to the west. A 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 1**). The Triple Creek Trail would be connected to 6th Avenue via a spur trail to the sidewalk 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 sidewalk on both sides of the bridge (Element 3) would provide connections to the trail. The southern terminus of the trail 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 6th Avenue/SH 30 (Element 1 in **Figure 1**), 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, while still providing 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 5 variable length spans supported on four piers. The bridge would be

designed to be compatible with the surrounding environment and to allow wildlife connectivity along Sand Creek and the Triple Creek Trail.

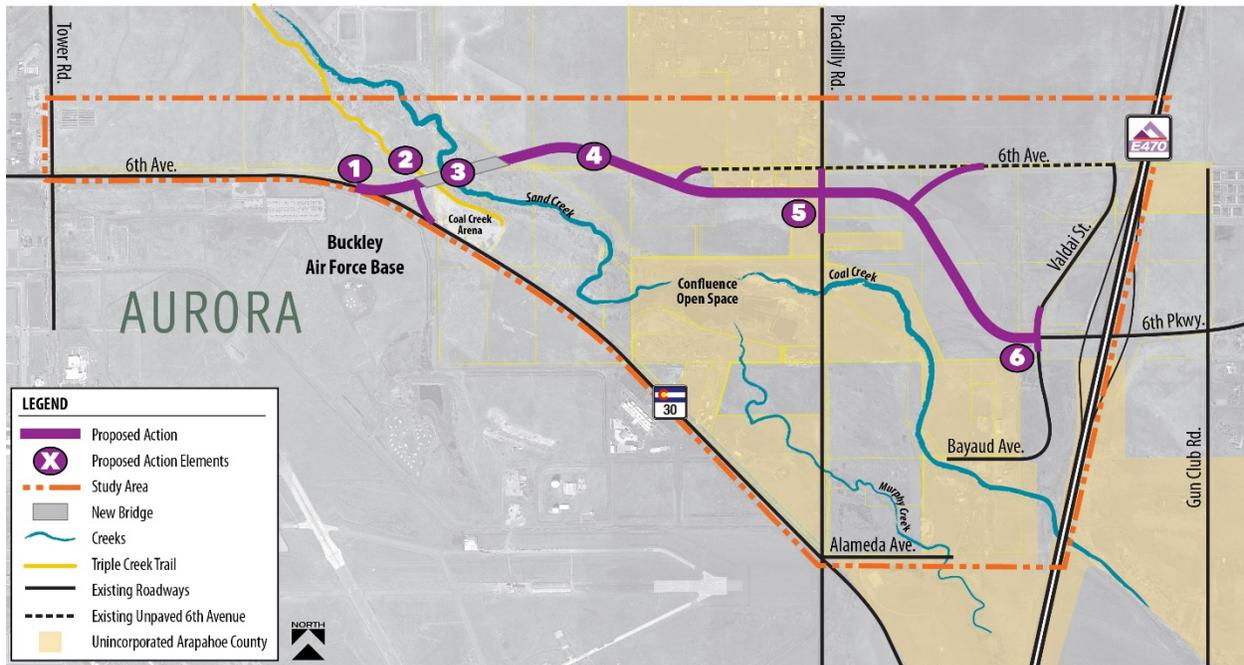
Element 4. 6th Avenue Parkway arterial roadway: The 6th Avenue Parkway extension would consist of a 144-foot wide, six-lane arterial roadway (three lanes in each direction) with a raised vegetated median. There would be curb and gutter and 10-foot wide sidewalks on the north and south sides of the roadway. The Proposed Action would provide two new access connections from the Proposed Action to two existing portions of 6th Avenue. One of these connections would provide access to the existing residences along unpaved 6th Avenue, west of Picadilly Road. The second connection would extend northeast from the Proposed Action to unpaved 6th Avenue 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 6th Avenue Parkway at E-470: On its eastern end, the Proposed Action roadway would tie into the existing E-470 interchange, which currently truncates at this location, forming a connection with the existing 6th Parkway to the east of the interchange. The intersection tie-in at Valdai Street and 6th 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 6th 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 Assessment Technical Report** of the EA.

Figure 1 Proposed Action and Study Area



Note: Numbers in graphic correspond with text above.

1.2 No Action Alternative

If the Proposed Action is not selected for implementation, there would be no improvements made to 6th Avenue beyond the existing and committed transportation system. The No Action Alternative was carried forward as a baseline comparison for environmental analysis purposes.

1.3 Visual Impact Assessment Scoping

This visual analysis follows guidance from Federal Highway Administration's (FHWA) recent *Guidelines for the Visual Impact Assessment of Highway Projects* (FHWA Guidelines) (FHWA, 2015), which sets out a process for assessing impacts to visual resources, in context to the National Environmental Policy Act (NEPA). These visual impact assessment (VIA) guidelines are comprehensive in scope, and represent FHWA's current views on the best practices for considering visual impacts, beneficial as well as adverse, during the development of a highway project, in compliance with NEPA.

Key elements of the VIA process generally include:

- Establishing the scope of visual issues and applicable regulations
- Delineating the visibility of the Proposed Action and Area of Visual Effects (AVE)
- Defining the visual attributes of the Proposed Action
- Establishing landscape units as a framework for the visual inventory and impact assessment

- Inventorying the visual character of landscape settings
- Identifying viewsheds from visually sensitive view points
- Determining viewer perceptions of the visual quality of the natural, cultural and project environment
- Assessing the project's visual compatibility and visual impacts
- Recommending mitigation measures

The visual resources AVE, or visual study area, expands on the EA study area in order to consider the visibility of the Proposed Action. The VIA process includes both “views from the road” by the traveling public, and “views of the road” by neighbors who are adjacent to the Proposed Action.

The FHWA Guidelines provide criteria for determining the level of VIA in the NEPA documentation and decision making for highway projects. A Standard VIA is appropriate for the 6th Avenue Parkway Extension EA, based on the following criteria:

- *Environmental compatibility*—The scale of the proposed transportation elements of the 6th Avenue Parkway would result in noticeable changes or contrast with the visual character of landscapes that are valued by the community.
- *Viewer Sensitivity*—While the project has not proven to be an element of major controversy within the community, there are viewer groups that would be sensitive to the visible changes proposed by the Proposed Action (see **Section 2.2** for a summary of public and stakeholder involvement).
- *Consistency with applicable laws, ordinances, regulation, policies or standards*—The project is anticipated within the overall park, recreation and open space planning process; however, decision-makers would benefit from the visual analysis and mitigation recommendations.

This Visual Resources Technical Report documents each phase of the VIA studies in the following sections:

- **Section 2.0** – VIA Methodology and Project Characteristics
- **Section 3.0** – Affected Environment
- **Section 4.0** – Impact Evaluation
- **Section 5.0** – Mitigation Measures

2. VIA METHODOLOGY AND PROJECT CHARACTERISTICS

The VIA process is carried out in four phases, including the Establishment Phase, Inventory Phase, Analysis Phase, and Mitigation Phase. This section includes an overview of the VIA methodology, and components of the Establishment Phase, including:

- Regulatory context and issues
- Visual attributes of the project
- Project visibility and AVE
- Landscape units

2.1 VIA Methodology

The VIA process is shown on **Figure 2**. The concept of transactional perception, and the inherent relationship or interaction between people and the visual quality of environment, are imbedded in the VIA approach. Capturing the community's values and visual quality preferences are included through public engagement, agency involvement, and planning ordinances tied to the protection and management of visual resources.

The following descriptions of the tasks included in each phase of the VIA process provide a roadmap for the visual resource studies for the Proposed Action:

- Establishment Phase

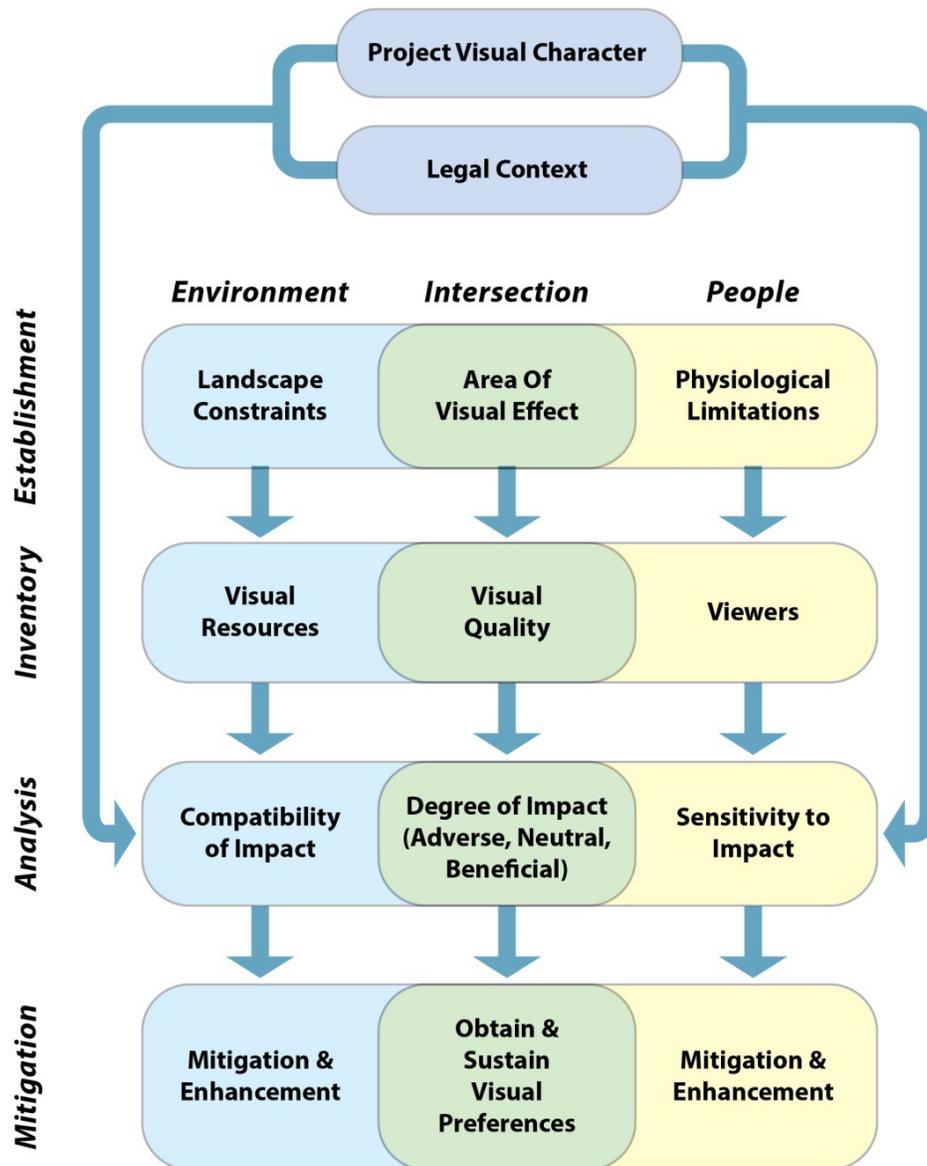
The goal of the initial phase is to establish a “baseline” context and starting point for the VIA visual studies. The establishment phase describes the VIA methodology, and identifies the scope of applicable regulations and issues; the project's visual character; project visibility; viewsheds from key view points; and landscape units with visually homogeneous characteristics. Documentation of the VIA establishment tasks is included in **Sections 2.2** through **2.4**.

- Inventory Phase

The visual inventory phase describes the existing visual character, views, and the visual quality of the AVE. The inventory is divided into the natural, cultural, and project environments of each landscape unit. Elements of the visual inventory include the regional context; visual character of the natural, cultural and project environments; views (of the road and from the road); and the visual quality of landscape units. The criteria and visual resource inventory of the landscape units are provided in **Section 3.0**.

Figure 2 FHWA VIA Process Flow Diagram

Visual Impact Assessment Process



■ Analysis Phase

The purpose of the VIA is to identify the visual consequences of the Proposed Action. This phase evaluates visual impacts to landscape units, including:

- Visual compatibility of the Proposed Action with the visual character
- Sensitivity of viewers to changes in the visual character of visual resources
- Degree of visual impacts to visual quality

The transportation elements of the Proposed Action may be visually *compatible* or *incompatible*; viewers may be *sensitive* or *insensitive*; and visual impacts may be *adverse*, *neutral* or *beneficial*. The evaluation criteria and visual impact assessment results are provided in **Section 4.0**.

■ Mitigation Phase

Methods for mitigating adverse visual impacts include avoidance, minimization, and compensation. In addition, the project includes opportunities to enhance existing visual quality. Mitigation measures are provided in **Section 5.0**.

2.2 *Regulatory Context and Public and Stakeholder Involvement*

2.2.1 NEPA

Consideration of aesthetics is included in both NEPA and FHWA regulations. NEPA of 1969, 42 U.S. Code 4321 et. seq., Section 101(b) declares that agencies will assure all Americans “aesthetically and culturally pleasing surroundings” for major Federal actions; and 49 U.S. Code 4331, Section 102 requires agencies to use environmental design arts in planning and decision-making. The FHWA Advisory T6640.8A requires an analysis of aesthetic effects, particularly for facilities located in visually sensitive urban or rural settings.

2.2.2 Sections 4(f) and 6(f)

The study area is predominantly undeveloped with a predominance of parks, recreation, and open space properties. FHWA’s regulations for complying with Section 4(f) in 23 CFR part 774 apply to the Triple Creek Greenway Corridor, which is comprised of contiguous City-owned landholdings that are managed for open space and trail purposes (**Figure 1**). The VIA process includes an assessment of visual impacts on Section 4(f) properties, in coordination with the analysis of Section 4(f) properties included in **Appendix A16 Parks, Recreation, Open Space and Section 4(f) and 6(f) Analysis Technical Report**.

Protection of public park and recreation resources protected under Section 6(f) of the Land and Water Conservation Fund (LWCF) Act also apply to the Triple Creek Greenway Corridor. The VIA process includes an assessment of visual impacts on Section 6(f) properties, in coordination with **Appendix A16 Parks, Recreation, Open Space and Section 4(f) and 6(f) Analysis Technical Report**. Both Section 4(f) and Section 6(f) lands in the study area are noted in the visual inventory and analysis.

2.2.3 City of Aurora Triple Creek Greenway Corridor Open Space

The VIA process includes an assessment of visual impacts on park and open space properties, in conformance with plans, policies and ordinances of local authorities. There are no specific Arapahoe County or City of Aurora regulations related to visual resources.

The Triple Creek Greenway Corridor Study (Arapahoe County and City of Aurora, 2011) documents the regional context and aesthetic values of the corridor, and includes guiding principles to maintain the scenic appeal of the creek and landforms, and to protect viewsheds and vantage points of scenic value. Conservation easement deeds for the acquisition of open space lands comprising the Triple Creek Greenway Corridor cite the “natural, scenic, open space, educational and recreational values (collectively, “Conservation Values”) of great importance to the Grantor, the people of Aurora, Arapahoe County, and the people of the State of Colorado”. Properties qualify as open space because they have been preserved for the scenic enjoyment of the general public, and yield a significant public benefit. The properties add to the scenic character of the local rural landscape, contain a harmonious variety of shapes and textures, and provide a degree of openness, contrast, and variety to the overall landscape. The assessment of visual impacts to the Triple Creek Greenway Corridor is coordinated with the studies included in **Appendix A16 Parks, Recreation, Open Space and Section 4(f) and 6(f) Analysis Technical Report**.

2.2.4 Public and Stakeholder Involvement

Public involvement for selection of the Proposed Action 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 alternatives. The second meeting held March 18, 2015 presented four alignments and solicited input from the public on their preference of alignments.
- Project Management Team (PMT) meetings held monthly beginning in September 2014 with City of Aurora. The PMT consists 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.
- Technical Working Group (TWG) meetings held monthly beginning in September 2014 with City of Aurora, Arapahoe County, Colorado Department of Transportation (CDOT), FHWA, Buckley Air Force Base (AFB), Urban Drainage and Flood Control District (UDFCD), and E-470. The TWG consists 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.
- Numerous 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.

- Additional coordination meetings between CDOT, FHWA, and the City of Aurora.

A full list of meetings is included in the *EA Template Appendix B*.

2.3 Visual Attributes of the Proposed Action

This section describes and illustrates the visual attributes of the Proposed Action, based on the concept design **Appendix A2 Conceptual Design Plans**. Illustrations of the proposed roadway, bridge, intersections, drainage features, pedestrian paths, and trail connections are shown in **Figure 3**, **Figure 4**, and **Figure 5**. These graphics are based on concept roadway and structural design, and do not show the specific final aesthetic treatments, styles, and colors that may be used. They simulate the general appearance and scale of the project as they would appear to motorists, pedestrians, and bicyclists. Final aesthetic treatments, materials, and colors for the roadway, bridge and intersections may change as final design progresses.

This series of perspective and cross section view illustrations were prepared as a part of the VIA study process to show existing conditions and the visual attributes of the Proposed Action. The ground level illustrations utilized Google Earth views, site photos, concept design, and computer paint programs, to create realistic images of proposed project features. Bird's-eye view images utilize Google Earth 3-D. Images were adjusted to establish a realistic perspective view. Proposed roadway features were then "painted" on images, by cross referencing with known ground feature dimensions, and applying traditional perspective rendering composition techniques.

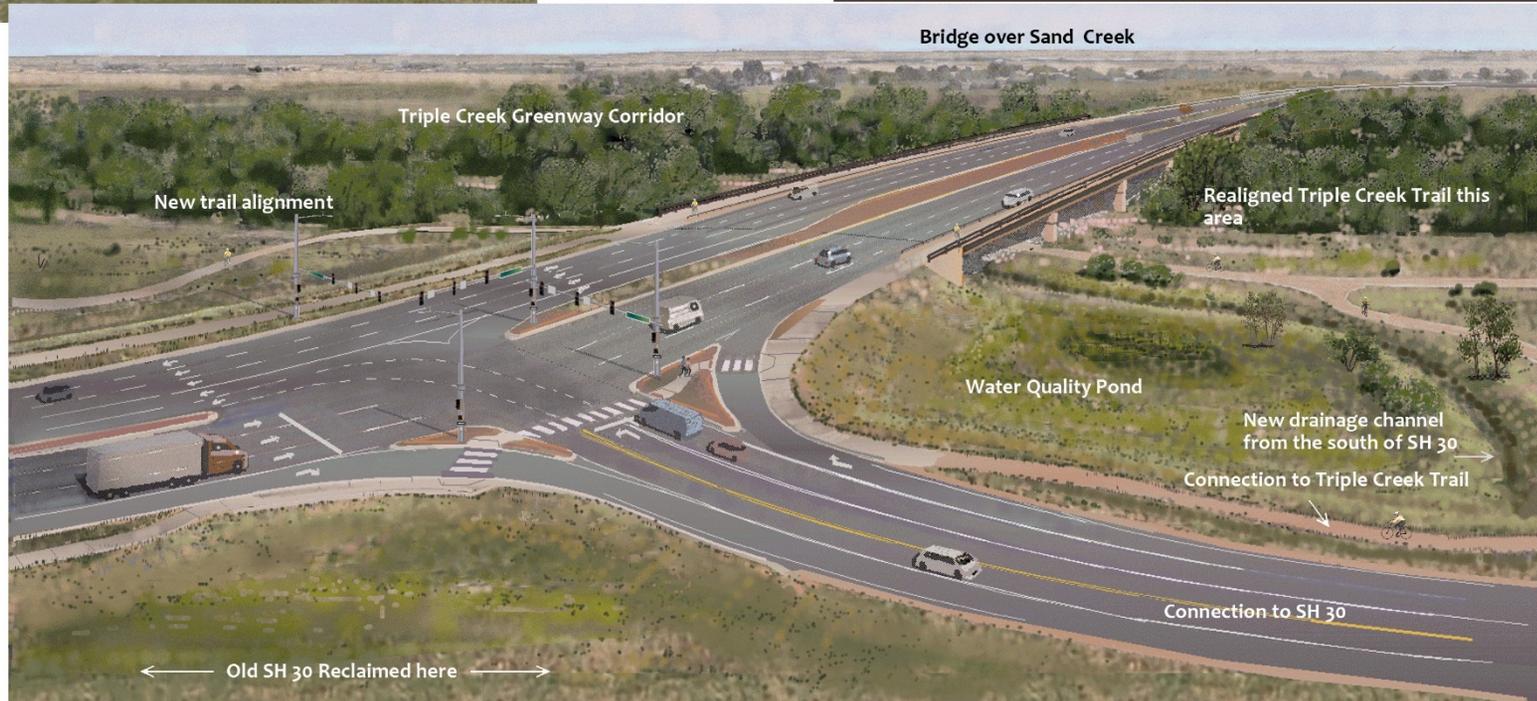
2.3.1 Roadway

The ultimate cross section of the Proposed Action would include a six-lane road with an open median, and sidewalks on both the north and south sides. The overall typical cross section would be approximately 144 feet in width. The curvilinear Proposed Action alignment follows the natural contours of the open prairie terrain between SH 30/6th Avenue and E-470, which would minimize grading for cut and fill slopes. The alignment crosses perpendicular to the Triple Creek Greenway Corridor, and generally follows a clearing established by an existing pipeline that ranges from approximately 8 feet to 20 feet.

2.3.2 SH 30/6th Avenue Intersection, Bridge, and Triple Creek Trail Connection

The SH 30/6th Avenue intersection would be a three-legged intersection, as illustrated in a bird's-eye view to the northeast in **Figure 3**. The intersection would be located within an open grassland landscape, that gradually slopes from SH 30/6th Avenue to the Triple Creek Greenway Corridor. The elevation change from the existing grades at the SH 30/6th Avenue intersection connection (elevation 5506 feet) to Sand Creek (approximate elevation 5470 feet) is approximately 36 feet. Grading for the intersection west of bridge would include a cut slope of approximately 10 feet, and a fill slope of approximately 18 feet. The bridge abutments and wing walls would range in height up to approximately 20 feet. The Triple Creek Trail would be realigned to cross under the bridge. Intersection signals would also introduce new vertical elements into this setting.

Figure 3 Simulated View of SH 30/6th Avenue Intersection and Bridge Concept



Simulated bird's eye view of bridge over Sand Creek and SH 30/6th Avenue intersection

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2.3.3 Water Quality Ponds and Drainage

The Proposed Action includes two water quality ponds located to the east and west of the Sand Creek bridge. A new drainage channel would extend from Buckley AFB to Sand Creek, following an alignment through the SH 30/6th Avenue intersection and under the Sand Creek Bridge. **Figure 3** is a bird's-eye view to the northeast, illustrating the scale, form, and materials of the concept design of the SH 30/6th Avenue intersection, bridge and Triple Creek Trail connection.

The six-lane bridge structure with multiuse pedestrian and bicycle accommodations would cross over Sand Creek and the floodway/floodplain within Triple Creek Greenway Corridor. The bridge would be approximately 680 feet in length and approximately 150 feet in width, with a clearance of approximately 12 feet above Sand Creek. The bridge elevation would be approximately 24 feet above the existing terrain. Material for the bridge would be concrete. The bridge alignment would result in vegetation clearing along both sides of the bridge structure, for a length of approximately 680 feet. The proposed bridge alignment would follow the existing 8-foot to 20-foot vegetation clearing along an existing water pipeline corridor. This would leave the remainder of the Triple Creek Greenway Corridor tree canopy intact from the Confluence Ponds Open Space to Tower Road. The Confluence Ponds are former aggregate mine remnant ponds that are expected to be preserved for their unique natural resource and riparian habitat qualities (**Appendix A16 Parks, Recreation, Open Space and Section 4(f) and 6(f) Analysis Technical Report**, page 5).

The Triple Creek Trail follows along the south side of Sand Creek, and ends within the Coal Creek Arena. The Triple Creek Greenway Corridor and trail serve equestrian, bicycle and pedestrian users. The existing trail would be realigned to cross under the bridge, and a 10-foot sidewalk on both sides of the bridge structure would provide for connections to the trail.

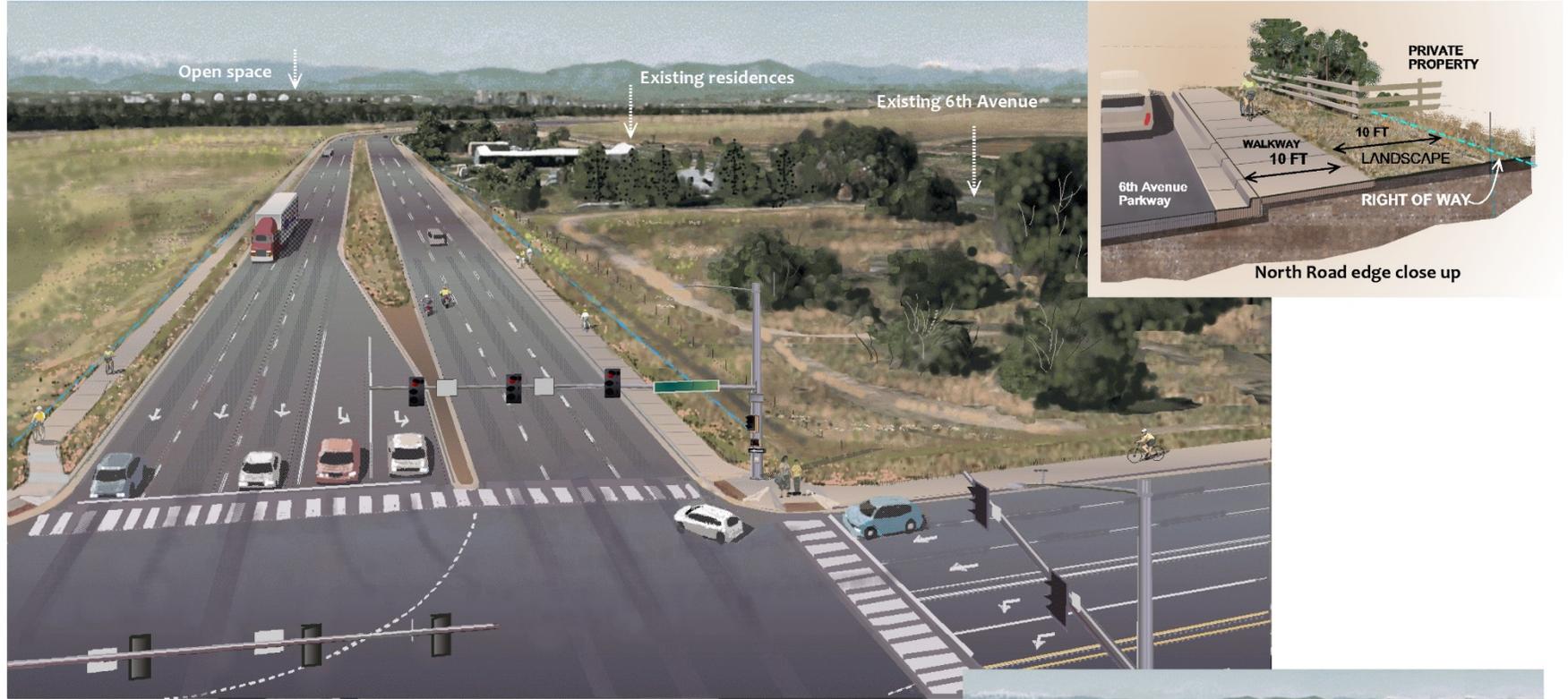
2.3.4 Picadilly Road Intersection

The Proposed Action would intersect with Picadilly Road to form a new six-lane intersection within an open grassland and agricultural setting. **Figure 4** is a bird's-eye view to the west, illustrating the scale, form and materials of the concept design of the Picadilly Road intersection.

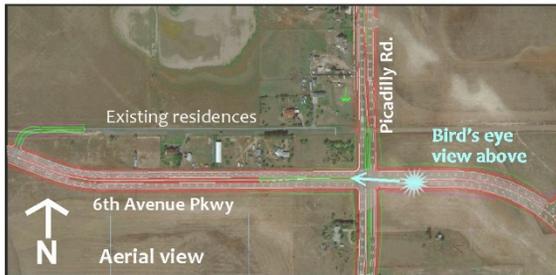
2.3.5 E-470/6th Avenue Parkway Interchange Connection

The Proposed Action would tie into the existing interchange providing the full connection east to existing 6th Avenue Parkway, and connect with the existing 6-lane section to the east of Gun Club Road. **Figure 5** is a bird's-eye view to the west, illustrating the scale, form and materials of the concept design of the E-470/6th Avenue Parkway intersection.

Figure 4 Simulated View of Picadilly Road Intersection Concept



Simulated view of 6th Avenue Parkway/ Picadilly Road intersection



Bird's eye view to the west of 6th Avenue Parkway and Picadilly Road intersection.
 Picadilly Road will also be widened to six lanes and improved as a separate project. This would be a signalized intersection with crosswalks and sidewalks for both roads. Note road edge condition on sketch at right.

FM 2 9 16



Existing conditions same view as above

Figure 5 Simulated View of E-470/6th Avenue Parkway Intersection Concept



2.4 Area of Visual Effect and Landscape Units

The AVE is the area in which the project would be visible, including the influence of topography, vegetation, and structures. The modeling and mapping of the project's visibility shown on **Figure 6** involved the use of Geographic Information System (GIS) applications, using Light Detection and Ranging (LiDAR) topography. LiDAR, a remote sensing technique, uses light from a pulsed laser to measure variable distances to the ground's surface. The system uses these light pulses, combined with global positioning system (GPS) coordinate information, to generate three-dimensional coordinates that can be used to derive information about the Earth's surface characteristics. One-foot contours derived from LiDAR were used to generate a regional terrain surface model, and compute visibility for the Proposed Action viewshed.

Figure 6 illustrates the view from the road with the traveler viewshed included. The visibility of the 6th Avenue corridor is based on concept design grading/elevation of road surface. This GIS analysis is consistent with VIA guidelines in establishing the AVE. It also shows the traveler viewshed, based on the 40 miles per hour (mph) design speed (**Section 3.2.4**).

The AVE and landscape units shown on **Figure 7** establish a comprehensive framework for the inventory and the evaluation of visual impacts. The visual resources AVE, or visual study area, expands on the EA study area in order to consider the influences of project visibility. The study team defined the AVE through a combination of field reconnaissance studies, reviews of Triple Creek Greenway Corridor documentation, public comments, and visibility mapping through GIS applications. The AVE is bounded by SH 30/6th Avenue and East Alameda Avenue to the south; North Aspen Street to the west, E-470 to the east, and Aurora Sports Park and residential development to the north.

The study team identified two interrelated landscape units within the AVE, based on patterns of natural and manmade landscape features and viewsheds:

- Triple Creek Greenway Corridor Landscape Unit
- Upland Area Landscape Unit

Descriptions of the visual character, views, and the visual quality of these landscape units are documented in **Section 3.0**; and VIA on visual quality is provided in **Section 4.0**.

Figure 6 Project Visibility and Traveler Viewshed Map

(Note: Visibility does not include vegetation screening; the Triple Creek Greenway Corridor (TCGC) Landscape Unit is within the yellow dotted polygon, and the Upland Area Landscape Unit extends outward from the TCGC within the Area of Visual Effect.)

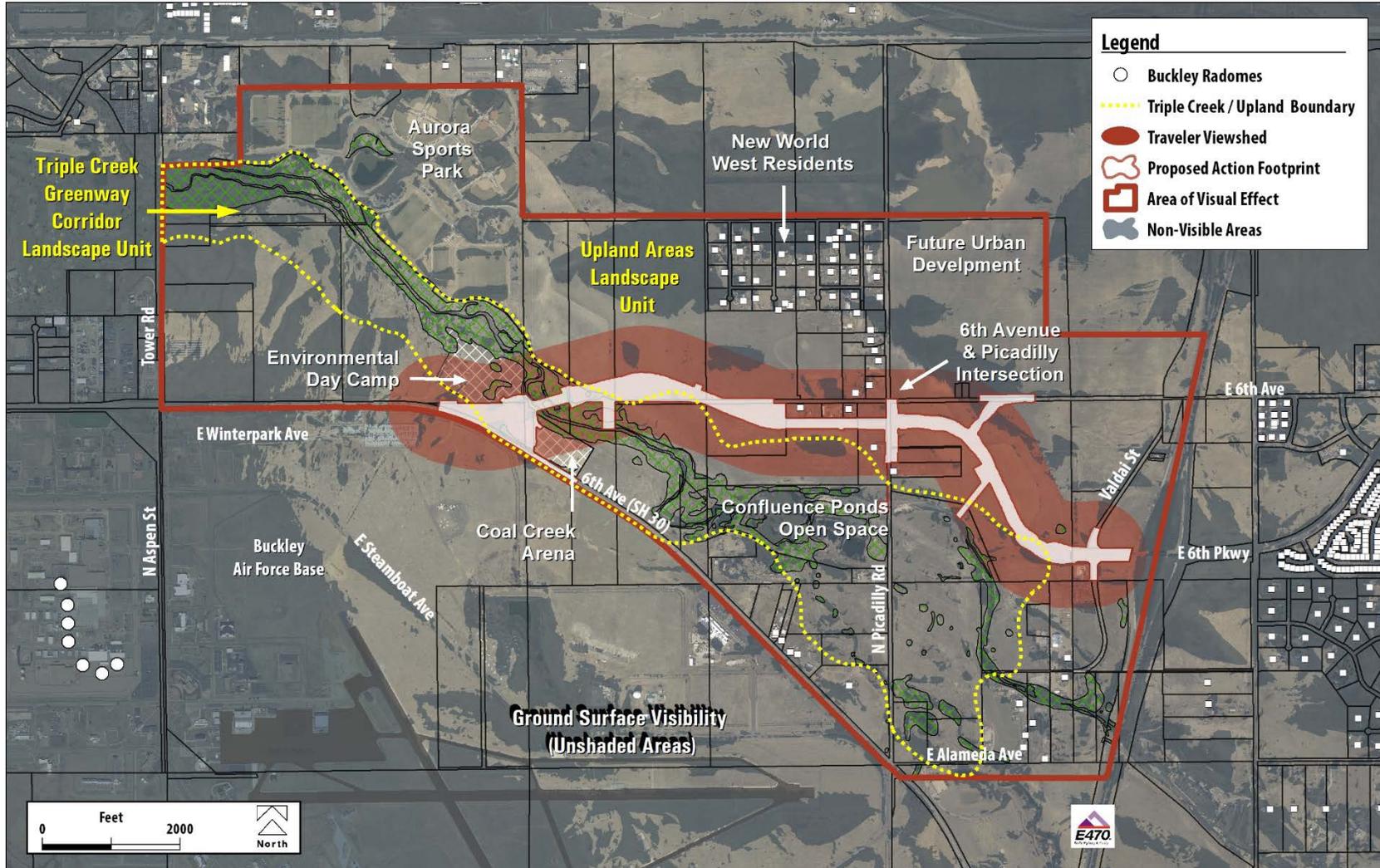
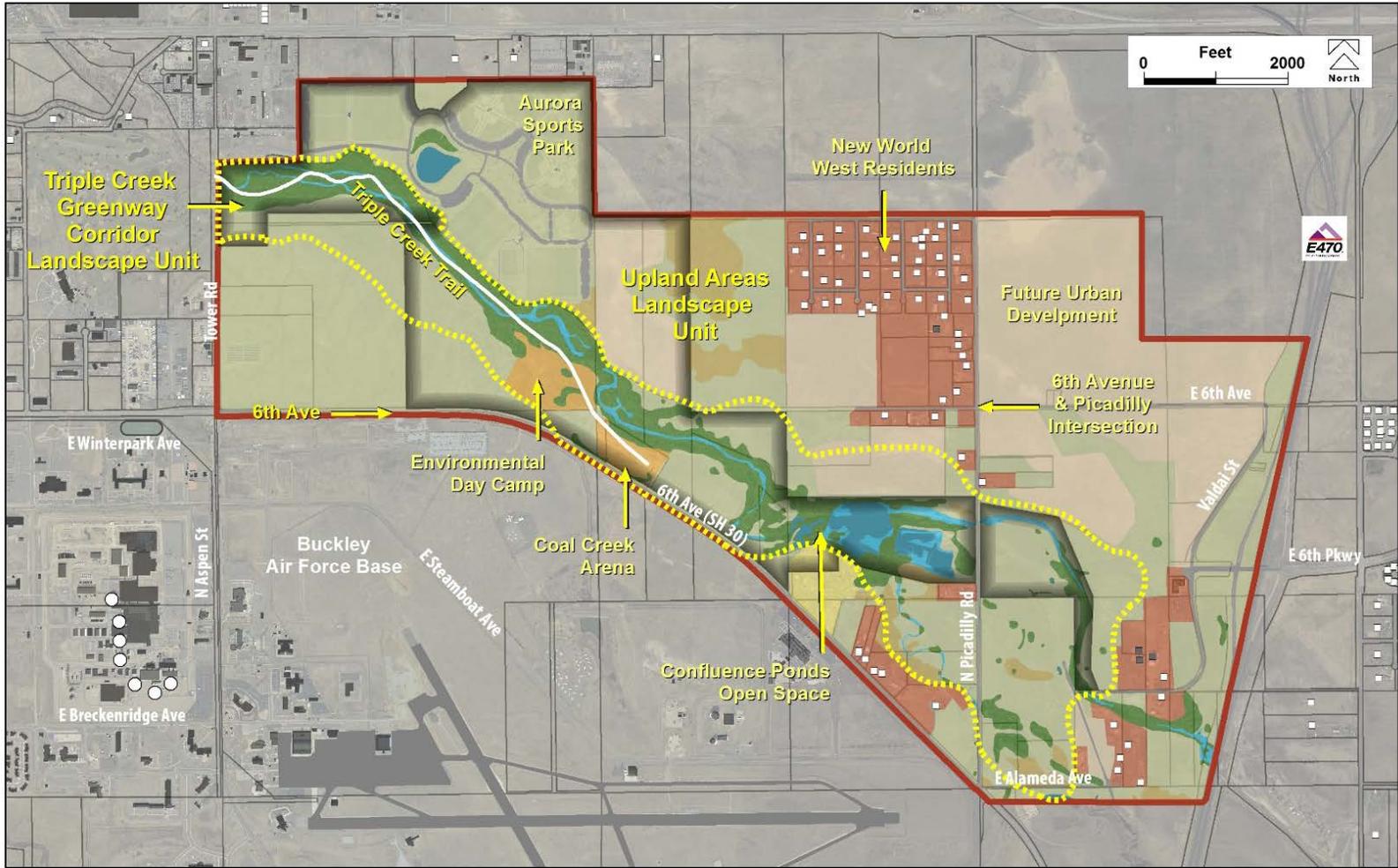


Figure 7 Area of Visual Effect and Landscape Units Map



Legend

- | | | | |
|-------------------------------|---|---------------------|------------------|
| Area of Visual Effect | Buckley Radomes (Visually Prominent Features) | Residential | Roadway |
| Triple Creek/Upland Boundary | Park and Open Space Land Cover Type | Cottonwood/Riparian | Shrub Mix |
| General Residential Locations | Property Boundaries | Agriculture | Ponds |
| Horse Stables | Large Building Footprints | Grassland | Manufacturing |
| | | Creek | Day Camp / Arena |

3. AFFECTED ENVIRONMENT

3.1 *Regional Context of the AVE*

The AVE is a sparsely developed “island” of shortgrass prairie and riparian wetland open space located within the eastern extent of the Colorado Front Range urban zone. The regional context of the AVE is tied to the patterns of development within the combined Tollgate and Sand Creek watersheds (**Figure 8**). The rivers, creeks, and canals within the Front Range combine to form a network of connected scenic corridors for recreation use and wildlife habitat within the urban setting. These corridors have also played a strategic role in defining the historic and contemporary patterns of growth and recreation uses in the region. The Triple Creek Greenway Corridor is connected with this regional network of greenway corridors, which includes the Sand Creek Greenway Trail, High Line Canal Trail, South Platte River Trail, and Cherry Creek Trail. The City of Aurora and Arapahoe County are in the process of establishing the Triple Creek Corridor to connect the Sand Creek Regional Greenway at the High Line Canal with the Aurora Reservoir. When completed, the combined greenways will form an uninterrupted 27-mile corridor from the Aurora Reservoir to the South Platte River.

The following sections describe the project features that would have the greatest visual effects, anticipated future conditions, and visual resources considered to be at risk.

3.1.1 *Project Features with the Greatest Visual Effects*

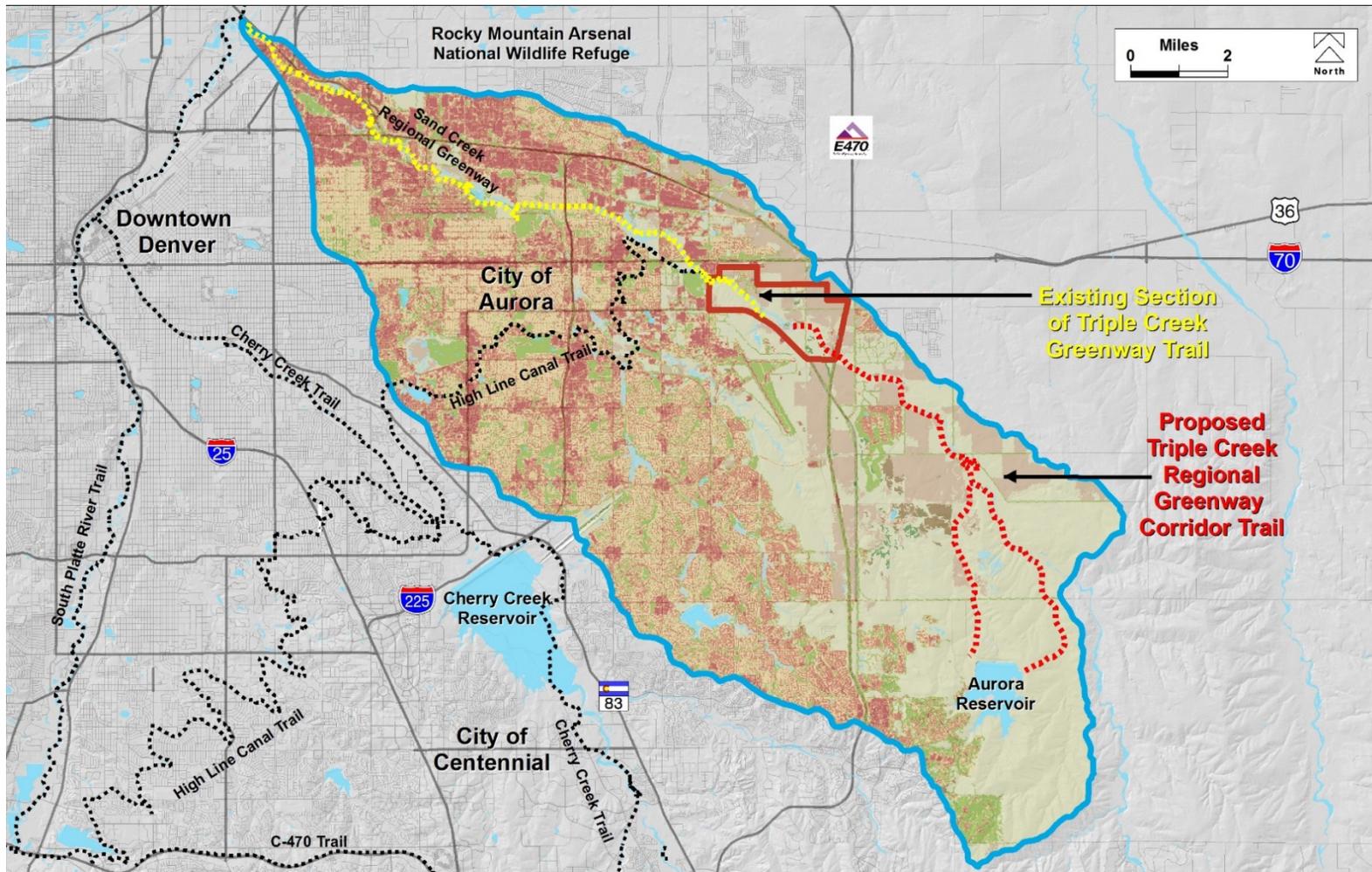
The features of the Proposed Action that would have the greatest potential to affect the character and quality of the visual resources within the AVE include the construction of the following project elements:

- Removal of vegetation (including short grass prairie) for construction of the 6th Avenue Parkway Extension roadway from SH 30 to E-470
- Structural elements, and cut and fill slopes associated with the 680-foot bridge over Sand Creek
- SH 30/6th Avenue Parkway Extension intersection
- Picadilly Road intersection with 6th Avenue Parkway
- Clearing of cottonwood riparian wetlands within the Triple Creek Greenway Corridor

3.1.2 *Anticipated Future Conditions of the Visual Resources in the AVE*

The foreseeable conditions of the Triple Creek Greenway Corridor Landscape Unit will remain a sustainable pattern of open space resources, due to the open space acquisitions by the City of Aurora (see **Appendix A16 Parks, Recreation, Open Space and Section 4(f) and 6(f) Analysis Technical Report**). In contrast, the Upland Area Landscape Unit is slated to transition from a rural agrarian landscape to urban development. The planned widening of Picadilly Road and future development planned in the upland area will greatly increase the density and diversity of development patterns.

Figure 8 Trails, Land Use, and Regional Context for Tollgate Creek/Sand Creek Watershed



Legend

- Combined Tollgate Creek/Sand Creek Watersheds
- Area of Visual Effect
- Existing Regional Trails
- Existing Sand Creek Greenway
- Proposed Regional Trail

Land Use Within Tollgate Creek / SandCreek Watershed Legend

- | | | |
|---|--|---|
| Barren Land | Developed, High Intensity | Developed Open Space |
| Agricultural | Developed, Low Intensity | Wetlands/Open Water |
| Forest | Developed, Medium Intensity | Herbaceous and Shrub/Scrub |

3.1.3 Future Visual Resources Considered to be at Risk

The existing open horizon lines and the rural scale of development within the adjacent uplands provide visual continuity to the prairie setting of the corridor. The open space protection will continue to preserve the visual resources of the Triple Creek Greenway Corridor for the scenic enjoyment of the general public. The anticipated urbanization of the upland areas within the AVE may influence the extended “prairie-like sense of place” for the Triple Creek Greenway Corridor, due to potential encroachment into the viewshed, and changes to the natural horizon line.

3.2 Visual Resources Inventory

This section includes an overview of inventory criteria, and descriptions of the visual resources of the AVE, and the Triple Creek Greenway Corridor, and Upland Area Landscape Units.

3.2.1 Inventory Criteria

The visual resources inventory includes the visual character, viewers, and visual quality of the landscape units within the AVE. The inventory is organized by the affected natural, cultural, and project environments. The visual inventory applies the following criteria:

- **Visual Character:** The form, line, color and texture of the natural, cultural and project environment features define the visual character of the landscape units.
- **Viewers:** The inventory of viewers include “neighbors” who have “views of the road,” and travelers who have “views from the road and adjacent trails.” Neighbors and travelers are further subdivided into categories that help to establish viewer preferences and their sensitivity to changes in visual resources are determined as part of the inventory phase of the VIA, and viewer sensitivity is determined later, in the analysis phase.
- **Visual Quality:** What viewers like and dislike about the visual character of the AVE is defined as its visual quality. A “Professional Observational Approach” was applied, with input through public meetings and stakeholders, to determine if:
 - The natural harmony of the existing scene is “harmonious” or “inharmonious”
 - The composition of the scene's cultural order, “orderly” or “disorderly”
 - The coherence of the project environment components is “coherent” or “incoherent”
- **Natural Environment:** Elements of the natural environment inventory include landforms, vegetation, water, animals and atmospheric conditions.
- **Cultural Environment:** Visual attributes of cultural resources include the visual character of its buildings, infrastructure, and structures.
- **Project Environment:** Visual attributes of the project environment include highway geometrics, grading, constructed elements, vegetative cover, and other ancillary visual elements found in the corridor of a modern highway. Because the Proposed Action is to establish an extension of 6th Avenue, the project environment is absent within the AVE, with the exception of the Proposed Action intersections at SH 30/6th Avenue, Picadilly Road, and E-470.

3.2.2 Visual Character

The visual character of the landscape units within the AVE set the context for the visual resources inventory. The VIA guidelines provide criteria for the inventory of natural, cultural, and project environment features that collectively define the visual character and sense of place of the project setting. The pattern of visual resources within the AVE are mapped in **Figure 9**. The rural agricultural character of the shortgrass prairie dominates the upland area, while the continuous canopy of cottonwood and riparian vegetation along Sand Creek defines the lowlands of the AVE. A representative cross section in **Figure 9** illustrates the visual continuity of upland and lowland landscapes within the AVE. Visual continuity is formed by the transition of shortgrass prairie terraces extending from Sand Creek into the upland prairie, and the horizon along eastern edge of the terraces gives a visual sense of vastness and continued open prairie.

While agricultural practices, rural development, and the introduction of various types of infrastructure within and surrounding the AVE have modified the prairie setting over time, the overall rural visual character remains “*natural*” or naturalized. This is because the pattern and scale of cultural features contribute to the *prairie landscape* sense of place that defines the visual character of the AVE. Detailed descriptions of the visual character of the natural, cultural and project environments are described for each landscape unit in the following sections, and illustrated in **Appendix A**.

Triple Creek Greenway Corridor Landscape Unit Visual Character

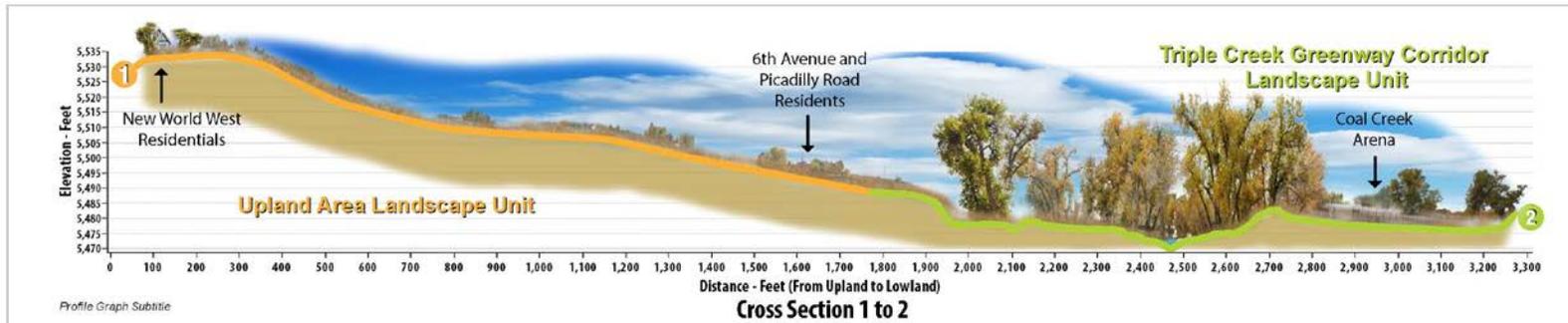
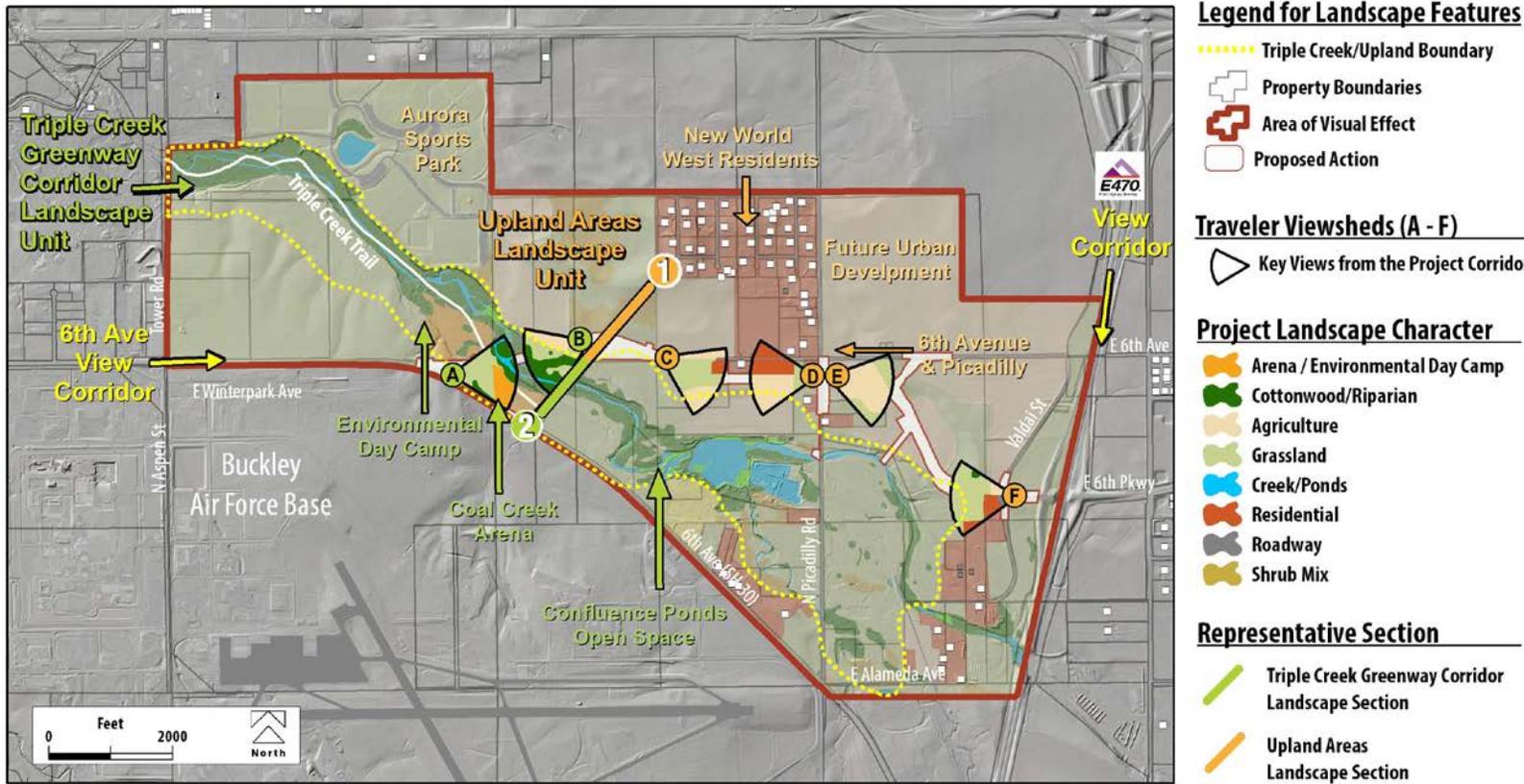
The patterns of landforms, vegetation, and water within the Triple Creek Greenway Corridor form a high degree of visual continuity, particularly along the eastern or upland side of the landscape unit, where natural character of the landscape remains the most intact. Sand Creek meanders through broad cottonwood – riparian stream corridor. A subtle sequence of terraces forms an elevation change of 25 to 30 feet from Sand Creek to the adjacent uplands to the east, thus creating a sense of visual enclosure within the landscape unit. There is a general absence of manmade features along Sand Creek. The vertical consistency of the cottonwood gallery canopy, combined with the presence of water in Sand Creek and Confluence Ponds Open Space, create a vivid and memorable landscape within the rural setting of the AVE, and within the broader Denver Front Range urban context.

Concentrations of migratory birds, waterfowl populations, eagles, and raptors within the Confluence Ponds Open Space habitat create a unique seasonal wildlife attraction within the corridor. The visual character of these landscape elements create a uniquely “prairie-like historic landscape” sense of place.

The composition of natural environment features within the Triple Creek Greenway Corridor form a continuous “canopied landscape” type (Litton, 1968). The natural features that contribute to the “canopied landscape” composition include:

- Mature cottonwood galleries creating vertical consistency and a memorable landscape
- Sequence of terraces with contiguous tree canopies and open understory
- Braided creek channels
- Arching branches and irregular canopies shapes establishing spatial definition and visual interest

Figure 9 Visual Character Map and Typical Cross Section



Cultural environment features that influence the visual character of the Triple Creek Greenway Corridor include:

- Visual encroachment from SH 30/6th Avenue
- Buckley AFB radomes
- Distant development

Project Environment features that influence the visual character of the Triple Creek Greenway Corridor include:

- Influence of the curvilinear 6th Avenue/SH 30 alignment
- Influence of 6th Avenue /SH 30 fill slopes

Appendix A provides representative photographs, with descriptions of the form, line, color, and texture associated with natural, cultural, and project environments of the Triple Creek Landscape unit.

Upland Area Landscape Unit Visual Character

The upland area west of Picadilly Road retains the characteristics of a rural shortgrass prairie and agricultural landscape extending from the Triple Creek Greenway Corridor. The rural scale of development creates a sense of open prairie. The visual character is anticipated to change from rural to urban within much of the upland area, due to multiple mixed-use development plans. In particular, the area east of Picadilly Road is in transition to becoming urbanized, adjacent to E-470. A multipurpose campus is also planned west of Picadilly Road (see **Appendix A12 Land Use Technical Report**). **Appendix A** provides representative photographs, with descriptions of the form, line, color, and texture associated with natural, cultural, and project environments of the Upland Area Landscape unit.

The composition of natural features within the Upland Area form a “Panoramic Landscape” type (Litton, 1968). Resources that contribute to the composition of the natural environment of the uplands include:

- Visually unbounded eastern plains landscape with views of the Triple Creek Greenway
- Subtle prairie terraces extending into the Triple Creek Greenway Corridor

Cultural environment features that influence the visual character of the Triple Creek Greenway Corridor include:

- Traditional patterns of low density rural roadside and field edge residences
- The open and generally undeveloped agricultural landscape setting is memorable within the surrounding urban region

Project Environment features that influence the visual character of the Upland Area include:

- Light manufacturing adjacent to 6th Avenue
- Buckley AFB radomes visible on horizon

3.2.3 Viewers

The viewers within the AVE are represented by two groups: *neighbors* and *travelers*. Project neighbors are those people who may have “views of the road,” while travelers are those people with “views from the road.” The inventory of views of the Proposed Action corridor includes residential and recreational neighbors. The groups of travelers include commuters with views from the road; and pedestrians and bicyclists, who would have views from the sidewalk on each side of the road. Detailed descriptions of viewers and viewsheds are provided in the following sections for each landscape unit.

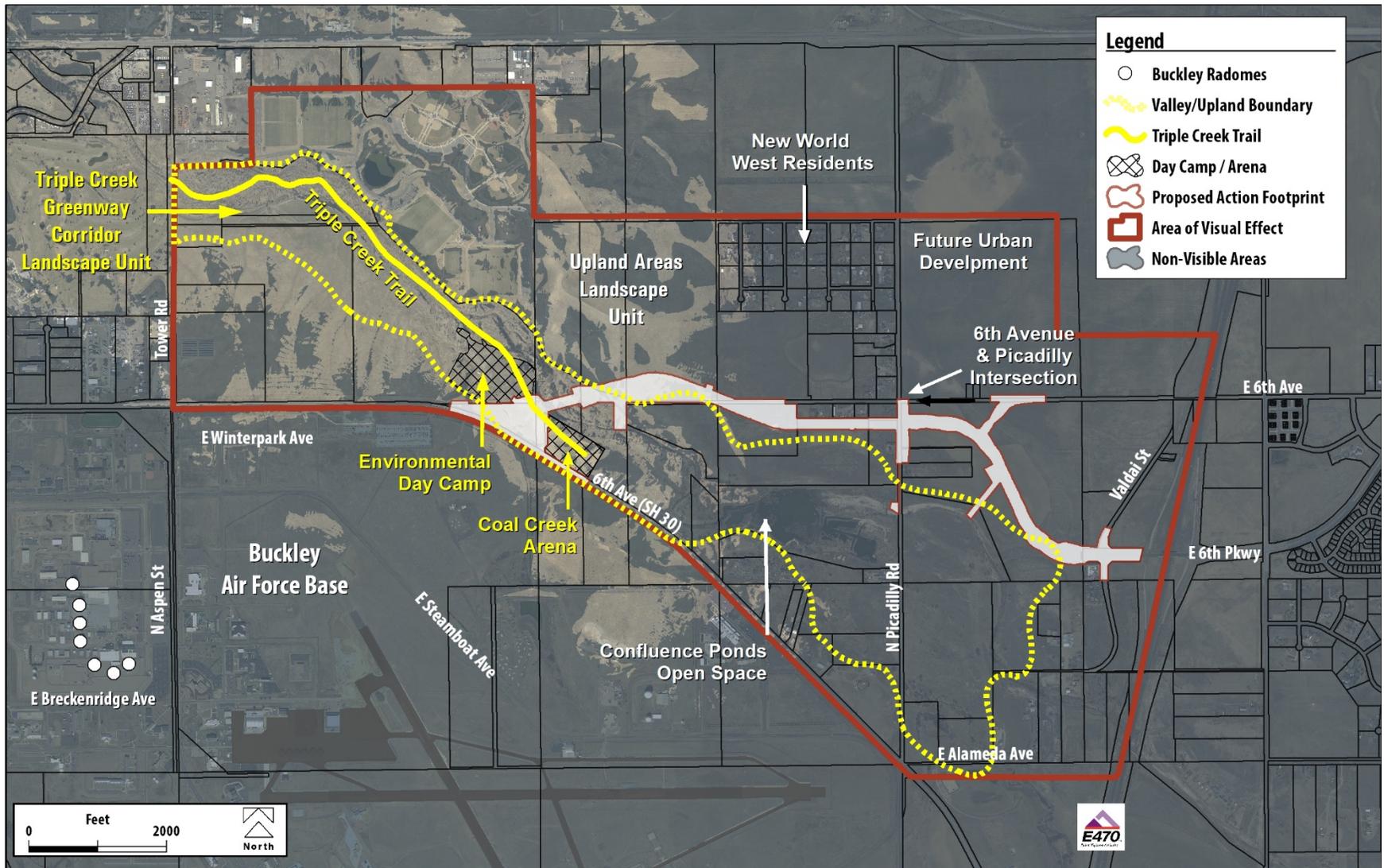
Triple Creek Greenway Corridor Landscape Unit Views

The visual experience of the Triple Creek Greenway Corridor for visitors is diverse, with four distinct viewing opportunities within the landscape unit, including the Triple Creek Trail, Coal Creek Arena, the Confluence Ponds Open Space, and the Environmental Day Camp. The project team selected these viewpoints in coordination with the City Parks, Recreation & Open Space planner, due to their regional importance, and Section 4(f) and 6(f) protection. **Figure 10** illustrates the viewshed of the Triple Creek Trail, based on GIS visibility modeling calculated from points every 100 feet along the trail. The high sensitivity of these viewpoints, as described below, is responsive to the intrinsic natural and scenic values of the designated open space landscape, especially in context to the regionally urbanized setting. The following is a description of the recreational “neighbors” within the Triple Creek Greenway Corridor:

- **Triple Creek Trail** – Current trail termini connects from Tower Road to the Coal Creek Arena that provides pedestrian, bike, and equestrian access for enjoyment of the natural, scenic, educational, and recreational values of the open space corridor. Recreation users would have open foreground views of the SH 30/6th Avenue intersection.
- **Coal Creek Arena** – The visual experience associated with equestrian events is enhanced by the adjacent open space setting and trail connection. Views are generally contained within the lowland setting adjacent to Sand Creek. Equestrian visitors would have open foreground views of the SH 30/6th Avenue intersection and bridge structure.
- **Environmental Day Camp** – This area was previously an outdoor education site and is located along the Sand Creek north of the SH 30/6th Avenue intersection and bridge. Views from the day camp are partially screened by deciduous trees. The City of Aurora currently manages this site as Open Space.
- **Confluence Ponds Open Space** – The naturalized ponds are preserved for natural, scenic, open space, educational, and recreational values, especially bird watching. The ponds are dominant focal point within the Triple Creek Greenway Corridor, and the viewshed of the upland area and horizon line creates a sense of vastness. Views from the pond area are partially screened by deciduous trees. The City of Aurora currently manages the ponds as Open Space.

Figure 10 Triple Creek Trail Viewshed Map

(Visibility does not include vegetation screening.)



Upland Area Landscape Unit Viewers

The following is a description of the residential and recreational “neighbors” within the Upland Area Landscape Unit:

Residential Neighbors

- **Rural Residents** –Views from residents adjacent to East 6th Avenue and Picadilly Road are open to the horizon and surrounding upland prairie landscape. The upper canopies of trees along the Triple Creek Greenway Corridor are focal points within the residential viewsheds.
- **New World West Subdivision** – The New World West subdivision north of 6th Avenue and west of Picadilly Road has open views of the horizon and surrounding upland prairie landscape from residents along southern and western edges. The visual contrast of the proposed roadway and Picadilly Road intersection would be moderate within open foreground views.
- **Planned Development east of Picadilly Road** – The views from future planned urban development east of Picadilly Road would likely be a mixture of internally oriented and outward views of the upland area.

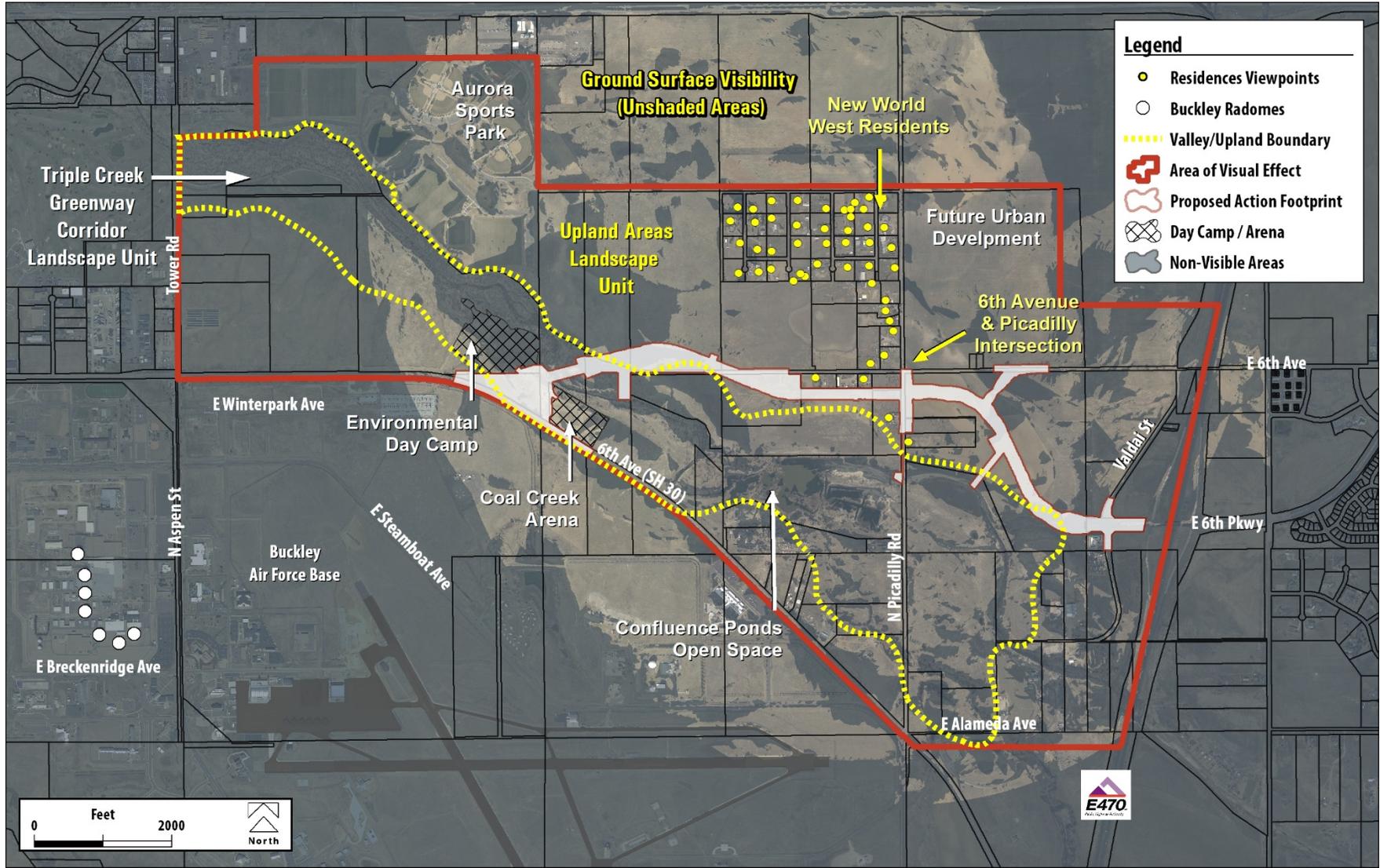
Recreational Neighbors

- **Aurora Sports Park** – The Aurora Sports Park is an expansive recreation complex on generally level terrain adjacent to the Triple Creek Greenway Corridor. Outward views are generally contained by a combination of surrounding terrain and vegetation screening, resulting in an internally oriented viewshed.

Figure 11 illustrates the viewshed from the New World West residents, East 6th Avenue and Picadilly Road residents. The New World West residents are located north of the proposed project corridor with broad views of the surrounding agricultural and prairie landscape. The Triple Creek Greenway Corridor is the focal point of their viewshed. The tree clearing created by the existing pipeline through the Triple Creek Greenway Corridor is visible within New World West residential viewshed. On a lower terrace, the Picadilly Road and East 6th Avenue residents also have panoramic views to the south and west that focus on the Triple Creek Greenway Corridor.

Figure 11 Residential Viewsheds Map

(Visibility does not include vegetation screening.)



3.2.4 Visual Quality

With the dominant pattern of rural and open space landscapes within the AVE, the visual quality inventory includes descriptions of the natural landscape features within residential, recreation, and project corridor viewsheds. The VIA guidelines emphasize the relationships between viewers and the landscape, and their perception of natural harmony, cultural order, and project coherence. Viewers inherently evaluate the natural harmony of an existing scene, and determine if the composition is *harmonious* or *inharmonious*. Cultural order may be viewed as *orderly* or *disorderly* in context to the landscape composition, and the components of the project environment may be viewed as *coherent* or *incoherent*. The following sections describe the visual quality of the landscape units.

- The cultural order of the Triple Creek Greenway Corridor is considered *orderly* along the eastern side of greenway, with the transition into open upland fields; and *disorderly* along the western edge, due to the influence of the SH 30/6th Avenue corridor and Buckley AFB. The cultural order of the uplands is considered generally *orderly*, due to the patterns of agricultural fields and rural residents.
- The coherence of the project environment is limited to the intersections with SH 30/6th Avenue, Picadilly Road, and E-470, and is considered visually *incoherent*.

Triple Creek Greenway Corridor Visual Quality

The natural visual character and visual quality of the Triple Creek Greenway Corridor are preserved for the scenic enjoyment of the public through open space designations. The Triple Creek Trail, Environmental Day Camp, and Coal Creek Arena are protected under Section 4(f), and 6(f) within the Triple Creek Greenway Corridor and conservation easement restrictions that apply to some of the City's open space parcels (see **Appendix A16 Parks, Recreation, Open Space and Section 4(f) and 6(f) Analysis Technical Report**).

The western side of the landscape unit is modified by the visual influence of SH 30/6th Avenue, manufacturing, and Buckley AFB facilities. The transition to the roadway corridor, adjacent fill slopes, and eroded landscape along the existing SH 30/6th Avenue appear *disorderly* within the context of the Triple Creek Greenway Corridor.

Radomes on Buckley AFB are generally screened from view within the densely vegetated interior of the Triple Creek Greenway Corridor, however the radomes are partially visible along the western edge of the corridor. In open view, the individual clusters of radomes resemble giant white golf balls, ranging in height from approximately 75 to 110 feet. The visual influence of the radomes has a dominance view in the middle ground influencing the natural recreation experience of the trail.

The patterns and composition of cottonwood trees and grassland, with a riparian vegetation understory along Sand Creek, as well as the visual influence of an existing pipeline corridor, are illustrated in **Appendix A. Table 1** characterizes the visual quality of Triple Creek Greenway Corridor Landscape unit.

- The natural harmony of the Triple Creek Greenway Corridor is considered *harmonious* along the eastern edge of the greenway; and *inharmonious* along the western edge, due to the influence of the SH 30/6th Avenue corridor.
- The cultural order of the Triple Creek Greenway Corridor is considered *orderly* along the eastern side of greenway, with the transition into open upland fields; and *disorderly* along the western edge, due to the influence of the SH 30/6th Avenue corridor and Buckley AFB.
- The coherence of the project environment at the intersection with SH 30/6th Avenue is considered visually *incoherent*.

Upland Landscape Unit Visual Quality

The visual quality of the upland area landscape unit characterized in **Table 2**.

- The upland area is generally considered *harmonious*, due the rural patterns of development.
- The cultural order of the uplands is considered generally *orderly*, due to the patterns of agricultural fields and rural residents.
- The visual coherence of the project environment at Picadilly Road and E-470 are generally considered visually *incoherent*.

3.2.5 “Views from the Road”

The visual character of the Proposed Action is represented by the curvilinear corridor alignment across the upland prairie and Triple Creek Greenway Corridor landscapes, within which all of the elements that constitute a modern highway will be placed. The project geometrics, structures, grading, are described and illustrated in **Section 2.3**.

Commuters driving the curvilinear alignment of the Proposed Action through the Triple Creek Greenway Corridor and Upland Area Landscape Units would experience a range of forested and open of landscape views. **Figure 9** includes an overlay of the proposed roadway alignment with selected viewpoints that illustrate the existing character of the roadway corridor environment. Photographs from each selected roadway view point are shown in **Figure 12**. With the 40 mph design speed, the typical width of the viewshed from the road would be approximately 73 degrees. The width of the roadway viewshed at 40 mph would be approximately 1500 feet, and viewing distance would be approximately 1050 feet.

Viewsheds visible at 40 mph west of Triple Creek Greenway Corridor include Triple Creek Trail and Coal Creek Area. Picadilly Road Intersection Residents and planned development east of Picadilly Road would be the visible viewsheds east of Triple Creek Greenway Corridor. GIS visibility modeling from points every 100 feet along the highway alignment in each direction, established the comprehensive roadway corridor viewshed shown on **Figure 6**, with the 1500 feet roadway viewshed highlighted on either side of the alignment. Photographs A through F in **Figure 12** illustrate the visual character of the Proposed Action Corridor.

Table 1 Visual Quality – Triple Creek Greenway Corridor

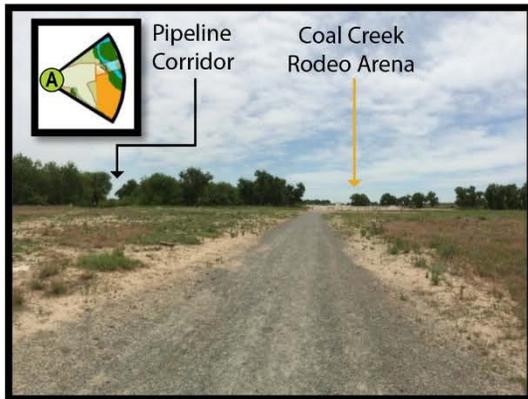
Visual Resources: Triple Creek Greenway Corridor						
Visual Quality Analysis						
Viewers	Natural Environment		Cultural Environment		Project Environment	
	 Harmonious	 Inharmonious	 Orderly	 Disorderly	 Coherent	 Incoherent
	Natural Harmony		Cultural Order		Project Coherence (Proposed Action Corridor)	
Triple Creek Trail / Open Space Use		Consistent with open space setting		Influence of SH 30 and Buckley AFB diminish the cultural order		Pipeline clearing and influence of SH 30 reduce Project Corridor coherence
Coal Creek Arena		Consistent with open space setting		Consistent with open space setting		Consistent with open space setting
Environmental Day Camp		Influence of SH 30 and fill slopes, and eroded soils diminish natural harmony		Influence of SH 30 traffic diminishes cultural order		Influence of SH 30 traffic diminishes Project Corridor coherence
Confluence Pond		Consistent with open space setting		Consistent with open space setting		Consistent with open space setting
EB Views from the Road Corridor		Consistent with open space setting		Consistent with open space setting		Consistent with open space setting
WB views from the Road Corridor		Views modified by influence of SH 30 and Buckley AFB		Views modified by influence of SH 30 and Buckley AFB		The historic prairie landscape image is diminished by SH 30 corridor, and skylining of Buckley AFB features, and distant development

Table 2 Visual Quality – Upland Area Landscape Unit

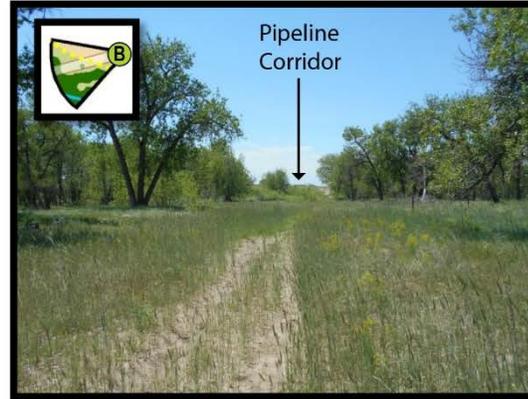
Visual Resources: Upland Area Landscape Unit						
Visual Quality Analysis						
Viewers	Natural Environment		Cultural Environment		Project Environment	
	 Harmonious	 Inharmonious	 Orderly	 Disorderly	 Coherent	 Incoherent
	Natural Harmony		Cultural Order		Project Coherence (Proposed Action Corridor)	
East 6 th Avenue & Picadilly Residents		Expansive agricultural landscape setting with adjacent open space corridor		Rural development patterns integrated with field and road edges		Scale of existing road Picadilly and East 6 th Avenue corridors are consistent with existing rural setting
New World West Residents		Consistent with existing rural setting		Low density rural subdivision bounded by agriculture and open space		Planned intersection represents initial urbanization of rural landscape
Future Urban Development		Represents a change from rural to suburban/urban environment		Represents a change from rural to suburban/urban environment		Views are diminished by distant development patterns
EB Views from the Road Corridor		Consistent with existing rural setting		Consistent with existing rural setting		Views are dominated by open expanses of agricultural fields that blend with the Triple Creek Greenway Corridor
WB views from the Road Corridor		Consistent with existing rural setting and view of Triple Creek Greenway Corridor		Consistent with existing rural setting and view of Triple Creek Greenway Corridor		

Figure 12 Traveler Viewshed of the Proposed Action

(see **Figure 9** for locations of viewpoints A – F)



A. View east of proposed intersection at 6th Parkway and SH 30/6th Avenue.



B. View southwest of pipeline corridor from the edge of Triple Creek Greenway Corridor.



C. View east of corridor from the edge of 6th Avenue.



D. View west of proposed corridor at 6th and Picadilly intersection.



E. View east of proposed corridor at 6th Avenue and Picadilly Intersection



F. View west of proposed project corridor from Valdai Street and E-470 Public Highway Authority building.

4. IMPACT EVALUATION

4.1 Evaluation Process and Criteria

This section of the visual resources technical report describes the criteria and evaluation of the visual impacts of the Proposed Action to the visual character, viewers, and visual quality of the Triple Creek Greenway Corridor and Upland Area Landscape Units. For the analysis phase of the FHWA VIA process, the study team evaluated the changes to the visual resources within each landscape unit in three steps, to identify:

- Visual compatibility of the Proposed Action with the visual character (compatible or incompatible)
- Viewer sensitivity to changes (sensitive or insensitive)
- Degree of visual impacts to visual quality (adverse, neutral or beneficial)

4.2 Evaluation Criteria

4.2.1 Compatibility with Visual Character

The visual compatibility, or contrast, of the Proposed Action with the visual character of the landscape is based on the ability of the environment to absorb the visual changes of the proposed project. The study team analyzed the visual contrast of the proposed roadway, bridge, and intersections described in **Section 2.3** with natural and cultural environment features within each landscape unit. The analysis considers the contrast of the form, line, color, texture, scale, and materials of each project element with landforms, vegetation, water, and development (existing and future). The degree of visual contrast is characterized in the following three levels:

- *Strong* visual contrast – Proposed Action would attract attention and dominate landscape features
- *Moderate* visual contrast – Proposed Action begins to attract attention, but remains subordinate to landscape features
- *Weak* visual contrast – Proposed Action would not attract attention or reduce the diversity and continuity of landscape features

Determining the visual compatibility of the project (compatible or incompatible) with visual character of the natural, cultural, and project environments are tied to the levels of visual contrast:

- *Compatible* – Moderate or weak levels of visual contrast to natural environment and cultural environment features are considered compatible with the visual character of the landscape units
- *Incompatible* – A strong or moderate-strong levels of contrast to natural environment and cultural environment features are considered incompatible with the visual character of the landscape units

4.2.2 Viewer Sensitivity

The sensitivity of viewers would be *sensitive* or *insensitive* to changes in the visual character of the natural, cultural and project environments within each landscape unit, based on evaluation of viewer *exposure* and *awareness* of the project. Viewer Exposure criteria include proximity, extent, and duration:

- Viewer *proximity* is measured by three distance zones
 - Foreground – 0.25 to 0.5 mile
 - Middleground – 3 to 5 miles
 - Background – Extends from the middleground zone to the limit of project visibility within the AVE
- *Extent* refers to the number of people that will be viewing the scene or object
- *View duration* measures how long viewers may view the scene or object

Viewer *awareness* criteria include attention, focus, and protection:

- *Attention* correlates with how routine or unique the scene is to a viewer
- *Focus* refers to differentiating details in the landscape
- *Protection* is provided by restrictions placed on visual resources by agencies, or by custom

4.2.3 Impact to Visual Quality

The focus of the FHWA VIA is determining the degree of impacts to the visual quality of each landscape unit (beneficial, adverse, or neutral). The process for assessing visual impacts incorporates the visual compatibility and viewer sensitivity assessments to determine the degree of visual impact to visual quality.

The evaluation of visual impacts of the Proposed Action focuses the visual compatibility, visual contrast with key viewpoints, and viewer response to changes in visual quality associated within the Triple Creek Greenway Corridor and Upland Area Landscape Units.

The following sections describe the VIA for the Triple Creek Greenway Corridor Landscape Units.

4.3 Triple Creek Greenway Corridor Landscape Unit Evaluation

This section includes the evaluations of visual character compatibility, viewer sensitivity, and impacts to visual quality.

4.3.1 Visual Character Compatibility Evaluation

The project scale, forms, and materials in the concept design of the SH 30/6th Avenue intersection and bridge shown in **Figure 3**, illustrate the opportunity for “visual absorption” within the forested setting within the Triple Creek Greenway Corridor. The road profile of the 6th Avenue Extension Parkway follows a gradual drop in grade (approximately 18 feet) from SH 30/6th Avenue to the east side of Sand Creek, as shown on **Figure 13**. The elevation change from SH 30/6th Avenue to the Sand Creek channel is approximately 36 feet.

The visual compatibility evaluation of the Triple Creek Greenway Corridor is summarized in **Table 3**. The scale, form and materials of the following project elements would be visually *incompatible* with the visual character of the Triple Creek Greenway Corridor:

- Roadway (section of 6th Avenue Parkway within Triple Creek Greenway Corridor open space east of Sand Creek)
 - Natural environment—would contrast with the natural lines, colors and textures of prairie landform terraces and short grass vegetation
 - Cultural Environment—would contrast with the viewsheds from rural residents
- Bridge
 - Natural Environment—would visually contrast and dominate the natural forms, lines, colors and textures of the Sand Creek terraces, and cottonwood and riparian wetland vegetation
 - Cultural Environment—would change the visual experience and viewsheds from the Triple Creek Trail and Coal Creek Arena for both equestrian and recreation users
- 6th Avenue Intersection
 - Natural Environment— would visually dominate the landforms and horizon line at the edge of the Triple Creek Greenway Corridor
 - Cultural Environment— would change the visual experience and viewsheds of recreation and equestrian trail and Coal Creek Arena users
- Ponds and Drainage Channel
 - Natural Environment—would visually contrast with the natural forms, lines, colors and textures of the Sand Creek terraces,
 - Cultural Environment—would contrast with the viewsheds of recreation and equestrian trail users

Figure 13 Simulated View of Cross Section of Roadway and Bridge Across Triple Creek Greenway Corridor



Existing 6th Avenue elevation at the west end of the project area is elevation 5506 ft.

Existing grade, dashed line. Note cut slope this area

Proposed roadway grade

6th Avenue Bridge over Sand Creek. Top of bridge is elevation 5496

Note that the existing cottonwood trees on either side of the bridge are 40 -60 feet tall while the bridge is about 25 ft tall.

Existing grade, dashed line. Note roadway embankment slope this area

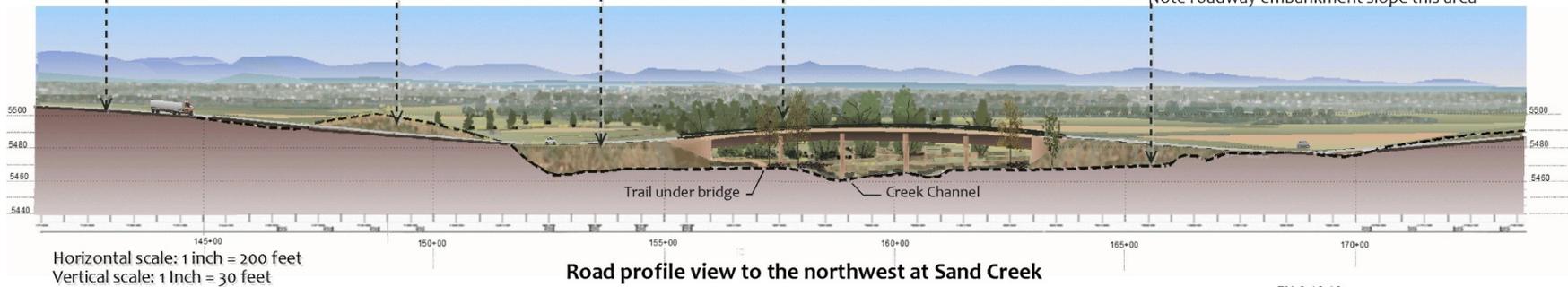


Table 3 Visual Character Compatibility Matrix – Triple Creek Greenway Corridor Landscape Unit

		Visual Character Compatibility Matrix Triple Creek Greenway Corridor Landscape Unit						
	Compatible							
	Incompatible							
W	Weak Contrast							
M	Moderate Contrast							
S	Strong Contrast	Natural Environment		Cultural Environment		Project Environment		
	Screened							
Project Visual Character	Criteria	Project Elements	Landform	Vegetation	Water	Triple Creek Trail	Coal Creek Arena	SH 30/ 6 th Ave
	Project Scale	Roadway	S	S	W			
		Bridge	S	S	M-S	S	M-S	
		6 th Avenue Intersection	S	W	W	S	M-S	M
		Ponds / Drainage	M-S	M	W	M-S	M	M
	Project Form	Roadway	S	S				
		Bridge	S	S	M-S	S	M-S	
		6 th Avenue Intersection	S	W	W	S	M-S	M
	Project Materials	Roadway	M	S	W			
		Bridge	M	S	M-S	S	M-S	
		6 th Avenue Intersection	M	W	W	S	M-S	M
	Project Visual Character	Roadway	S	S	W			
		Bridge	S	S	M-S	S	M-S	
		6 th Avenue Intersection	S	M	W	S	M-S	M
		Ponds / Drainage	M-S	M	M			M

4.3.2 Viewer Sensitivity Evaluation

The viewer sensitivity evaluation of the Triple Creek Greenway Corridor is summarized in **Table 4**. Views from Triple Creek Trail, Coal Creek Arena, Environmental Day Camp, and Confluence Ponds Open Space are considered visually *sensitive*. Viewsheds are generally enclosed or screened, and are internally focused on the Sand Creek cottonwood and riparian corridor. The project would be within the foreground of the trail and equestrian-related viewsheds. Trail and informal views within the open space are considered *sensitive*, due to their attention and focus on the natural harmony of landscape features within their viewsheds. Views from the Coal Creek Arena are also considered sensitive to changes to the natural harmony of landscape features, due to the natural setting at the edge of the cottonwood and riparian wetland corridor.

Section 4(f) and 6(f) Protection

The Triple Creek Trail, Coal Creek Arena, Environmental Day Camp are protected resources known as “Section 4(f) properties” located within the study area. Section 4(f) of the U.S. Department of Transportation (USDOT) Act of 1966, as amended, and codified in 49 United States Code § 303, declares that “It is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.”

There are also public parks and recreation areas acquired, developed, or improved with grant funds provided by the federal LWCF are protected under Section 6(f) of the Act from conversion to uses other than public outdoor recreation.

Figure 10 illustrates the visibility from the Triple Creek Trail.

Table 4 Viewer Sensitivity Matrix – Triple Creek Greenway Corridor Landscape Unit

Viewer Sensitivity – Triple Creek Greenway Corridor Landscape Unit					
	Sensitive	Foreground Viewpoint / Viewer Groups	Natural Harmony	Cultural Order	Project Coherence
	Insensitive				
	Vegetation Screening				
Viewer Exposure	Proximity, Extent and Duration	Sand Creek Trail			
		Coal Creek Arena			
		Confluence Ponds			
		Environmental Day Camp			
		View from 6 th Ave Parkway			
Viewer Awareness	Attention, Focus and Protection	Sand Creek Trail			
		Coal Creek Arena			
		Confluence Ponds			
		Environmental Day Camp			
		View from 6 th Ave Parkway			

4.3.3 Impacts to Visual Quality

The visual impact assessment of the Triple Creek Greenway Corridor is a synthesis of the visual resources evaluations, including visual character compatibility and viewer sensitivity, to identify visual impacts to the visual quality of the landscape unit. The natural landscape image of the Triple Creek Greenway Corridor is maintained by the unbroken transition into the rural upland terraces, however, the visual influence of SH 30/6th Avenue and pipeline corridor combine to modify the natural visual character at the SH 30/6th Avenue intersection location.

Visual impacts of the Proposed Action to the Triple Creek Greenway Corridor landscape unit are summarized in **Table 5**. The following summarizes *adverse* visual impacts to the visual quality of the landscape unit:

- Triple Creek Trail—The proposed SH 30/6th Avenue intersection and bridge would contrast with the local visual character and continuity of the riparian corridor cottonwood galleries within the Triple Creek Greenway Corridor, and would visually dominate the Triple Creek Trail viewshed, resulting in *adverse* impacts to the visual quality of recreation and equestrian views. **Figure 14** illustrates the view of the intersection and bridge from the Triple Creek Trail, and **Figure 15** illustrates the view traveling west along the roadway toward the bridge.
- Coal Creek Arena—The proposed SH 30/6th Avenue intersection and bridge would also contrast with the visual character of the Coal Creek Arena setting, and result in *adverse* impacts to the visual quality of equestrian-related views.

Views of the intersection and bridge from the Environmental Day Camp are partially screened by vegetation. Views of the roadway and Picadilly intersection from the Confluence Ponds Open Space area are screened by local vegetation.

The views from the 6th Avenue Parkway through the Triple Creek Greenway Corridor would be a *positive* experience for highway travelers, and for pedestrians and bicyclists using the adjacent path.

Opportunities to Reduce Visual Contrast

While the initial visual contrast of the project would be *incompatible* with the visual character of the landscape unit, there are opportunities to visually integrate the intersection and bridge within the local setting, and create a visually *compatible* relationship between the built and natural landscape. Mitigation measures included in **Section 6** would reduce visual contrast by:

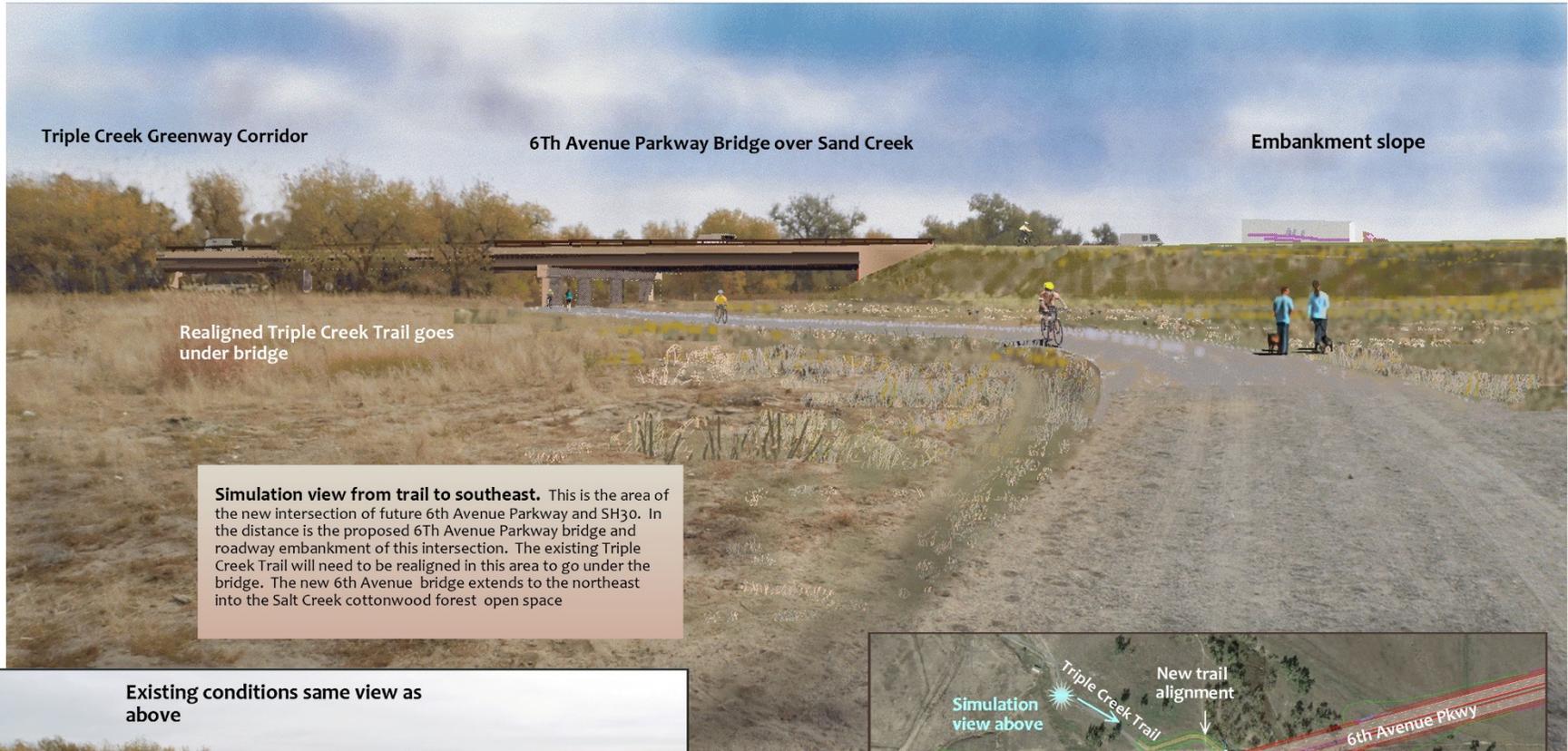
- Establishing a natural transition of cut and fill slope grading into natural contours
- Restoring existing ground disturbance within the area surrounding the intersection footprint, and establishing natural patterns of native vegetation to visually integrate the interchange with the surrounding open space area
- Establishing a natural vegetation edge through the Triple Creek Greenway
- Applying aesthetic color, materials, forms and finishes concepts to the structured elements of the intersection and bridge

In the broader context, the project would be visually absorbed within the Triple Creek Greenway Corridor.

Table 5 Impacts to Visual Quality Matrix – Triple Creek Greenway Corridor Landscape Unit

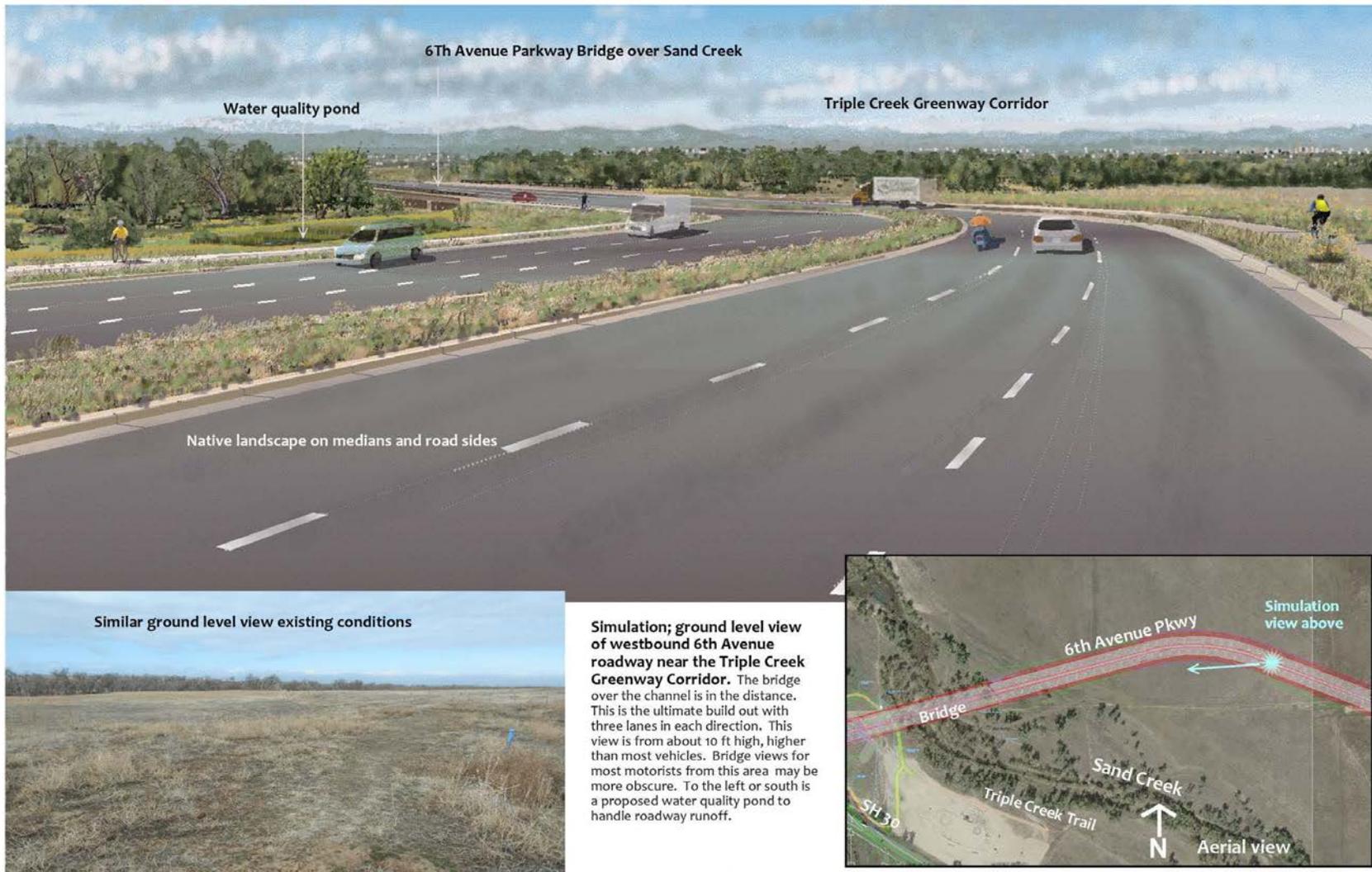
				Impacts to Visual Quality Triple Creek Greenway Corridor Landscape Unit														
				Viewer Sensitivity														
				Sensitive						Insensitive								
				Exposure						Awareness								
Visual Compatibility	Incompatible	Criteria	Project Elements / Visual Compatibility of the Project	Visual Contrast	Sand Creek Trail / Open Space Use	Coal Creek Arena	Environmental Day Camp	Confluence Pond	Multi-Modal Views from 6 th Ave Parkway	Sand Creek Trail / Open Space Use	Coal Creek Arena	Environmental Day Camp	Confluence Pond	Multi-modal Views from 6 th Avenue Parkway				
					S	Natural Harmony	Roadway	S										
							Bridge	S										
							Intersection	S										
	Ponds and drainage	M-S																
	Compatible	Cultural Order	Roadway	W														
			Bridge	S														
			Intersection	S														
			Ponds and drainage	W														
	Project Coherence			W														
	W/M	Visual Quality	Roadway	S														
			Bridge	S														
			Intersection	S														
			Ponds and drainage	M														
	Visual Impact Levels		Visual Contrast Levels		S	Strong			M	W			Weak					
	Adverse		Neutral			Beneficial/Positive				Screened			No Visual Impact					

Figure 14 Simulated View from Triple Creek Trail



FM 2 10 16

Figure 15 Simulated View of 6th Avenue Parkway and Bridge from Roadway



Simulation; ground level view of westbound 6th Avenue roadway near the Triple Creek Greenway Corridor. The bridge over the channel is in the distance. This is the ultimate build out with three lanes in each direction. This view is from about 10 ft high, higher than most vehicles. Bridge views for most motorists from this area may be more obscure. To the left or south is a proposed water quality pond to handle roadway runoff.

FM 2 4 16

4.3.4 Section 4(f) and 6(f) Impacts

Section 4(f) impacts are very minor for the Proposed Action and would not affect existing recreational use of either the Environmental Day Camp or the Coal Creek Arena – thereby qualifying as an exception under Section 4(f). A portion of the Triple Creek Trail would be impacted and will be realigned to provide passage beneath the Proposed Action Alternative bridge. Coordination on impacts, minimization and mitigation for the Section 4(f) impacts has occurred with City of Aurora PROS, the Official with Jurisdiction. For detailed information on Section 4(f) impacts reference **Appendix A16 Parks, Recreation, Open Space and Section 4(f) and 6(f) Analysis Technical Report**.

Conversion of Section 6(f) impacts for the projects include those on Parcels 138 and 137 and will be mitigated in-kind in accordance with Section 6(f)(3) of the Land and Water Conservation Fund act, which requires land of comparable value and equivalent usefulness and location. The City of Aurora has identified such land and is currently negotiating size and value of the parcel as it relates to the impacted area.

Mitigation for the visual impacts to Triple Creek Trail are coordinated with the Section 4(f) and 6(f) evaluations documented in **Appendix A16 Parks, Recreation, Open Space and Section 4(f) and 6(f) Analysis Technical Report**.

4.4 Upland Area Landscape Unit Evaluation

This section includes the evaluations of visual character compatibility, viewer sensitivity, and impacts to visual quality.

4.4.1 Visual Character Compatibility Evaluation

The visual compatibility evaluation of the natural and cultural environments of Upland Area Landscape Unit is summarized in **Table 6**. The scale, form and materials of the following project elements would be visually *incompatible* with the visual character of the Upland Area:

- Roadway
 - Natural and Cultural Environments—The scale, forms and materials of the proposed roadway and Picadilly intersection would result in *strong* levels of visual and contrast would be visually *incompatible* with the rural residential setting adjacent to the East 6th Avenue and Picadilly Road area, as illustrated in **Figure 4**.
 - Project Environment—The Proposed Action would establish a new 6-lane urban intersection, in contrast to existing 2-lane road.

The visual character of the eastern portion of the study area is in transition from rural to urban, resulting in varying levels of visual compatibility with the Proposed Action. In the broader Upland Area context, the proposed road, and Picadilly and E-470 intersections have the potential to be visually integrated and *compatible* with future patterns of urban development. The E-470 Intersection is illustrated in **Figure 5**.

Table 6 Visual Character Compatibility Matrix – Upland Area Landscape Unit

		Visual Character Compatibility Matrix							
		Upland Area Landscape Unit							
	Compatible								
	Incompatible								
W	Weak Contrast								
M	Moderate Contrast								
S	Strong Contrast								
	Screened	Natural Environment		Cultural Environment		Project Environment			
Project Visual Character	Criteria	Project Elements	Landform	Vegetation	Rural Residents	Future Development	Picadilly Rd	E-470	
	Project Scale	Roadway		M-S	S	S	M	S	W
		Picadilly Intersection		M	S	S	M	S	W
		E-470 Intersection		M	W	W	M	W	W
	Project Form	Roadway		M-S	S	S	M	M	W
		Picadilly Intersection		M	S	S	M	M	W
		E-470 Intersection		M	W	W	M	W	W
	Project Materials	Roadway		M-S	S	S	M	M	W
		Picadilly Intersection		M	S	S	M	M	W
		E-470 Intersection		M	W	W	M	W	W
	Project Visual Character	Roadway		M-S	S	S	M	S	W
		Picadilly Intersection		M	S	S	M	S	W
		E-470 Intersection		M	W	W	M	W	W

4.4.2 Viewer Sensitivity Evaluation

The viewer sensitivity evaluation of the Upland Area is summarized in **Table 7**. Views from the East 6th Avenue and New World Subdivision residents within the Upland Area are open and panoramic, and the project would be within the foreground of their viewsheds. Residential views are considered *sensitive*, due to their proximity, and their focus and attention on the surrounding rural landscape. The 6th Avenue Parkway Extension roadway alignment and Picadilly Road intersection would dominate the open foreground views of rural residences along East 6th Avenue and Picadilly Road.

Table 7 Viewer Sensitivity Matrix – Upland Area Landscape Unit

Viewer Sensitivity – Upland Area Landscape Unit					
	Sensitive	Foreground Viewpoint / Viewer Groups	Natural Harmony	Cultural Order	Project Coherence
	Insensitive				
	Vegetation Screening				
Viewer Exposure	Proximity, Extent and Duration	E. 6 th Ave & Picadilly Residents	Yellow	Yellow	Yellow
		New World West Residents	Yellow	Yellow	Yellow
		Future Urban Development	Light Green	Light Green	Light Green
		Aurora Sports Park	Light Green	Light Green	Light Green
		View from 6 th Ave Parkway	Light Green	Light Green	Light Green
Viewer Awareness	Attention, Focus and Protection	E. 6 th Ave & Picadilly Residents	Yellow	Yellow	Yellow
		New World West Residents	Yellow	Yellow	Yellow
		Future Urban Development	Light Green	Light Green	Light Green
		Aurora Sports Park	Light Green	Light Green	Light Green
		View from 6 th Ave Parkway	Light Green	Light Green	Light Green

4.4.3 Impacts to Visual Quality

Visual Impacts of the Proposed Action to the Upland Area Landscape Unit are summarized in **Table 8**, which provides a synthesis of the visual resources evaluations to identify visual impacts to the visual quality of the landscape unit. The following summarizes *adverse* visual impacts to the visual quality of the landscape unit:

- The Proposed Action roadway alignment and Picadilly Road intersection would dominate the open foreground views of rural residences along East 6th Avenue and Picadilly Road. The scale of the road corridor and intersection would result in *adverse* visual impacts as illustrated in **Figure 4**. The visual contrast of the vegetation clearing through the Triple Creek Greenway Corridor would be visible from the New World Subdivision residents. Mitigation measures included in **Section 5** would reduce the landform and vegetation contrast of the road corridor and interchanges within the Upland Area Landscape Unit.

Opportunities to Reduce Visual Contrast

While the initial visual contrast of the project would be *incompatible* with the visual character of the landscape unit, there are opportunities to visually integrate the intersection and bridge within the local setting, by reducing the visual contrast between the built and natural landscape. Mitigation measures included in **Appendix C** would reduce visual contrast by:

- Establishing a natural transition of cut and fill slope grading into natural contours,
- Integrating the natural prairie vegetation within the road median and edges, and
- Providing vegetation screening for adjacent rural residents.

Table 8 Impacts to Visual Quality Matrix – Upland Area Landscape Unit

				Impacts to Visual Quality Upland Area Landscape Unit														
				Viewer Sensitivity														
				<i>Sensitive</i>					<i>Insensitive</i>									
				Exposure					Awareness									
Visual Compatibility	Incompatible	Criteria	Project Elements / Visual Compatibility of the Project	Visual Contrast	E. 6 th Ave & Picadilly Residents	New World West Residents	Future Urban Development	Aurora Sports Park	Views from 6 th Ave Parkway	E. 6 th Ave & Picadilly Residents	New World West Residents	Future Urban Development	Aurora Sports Park	Views from 6 th Ave Parkway				
					S	Natural Harmony	Roadway	S										
							Bridge (tree clearing)	S										
	Picadilly Intersection	S																
	Compatible	Cultural Order	Roadway	S														
			Bridge (tree clearing)	S														
			Picadilly Intersection	S														
	Project Coherence	M																
	W/M	Visual Quality	Roadway	S														
			Bridge (tree clearing)	S														
Picadilly Intersection			S															
Visual Impact Levels		Visual Contrast Levels		S	Strong			M	Moderate		W	Weak						
					Beneficial				Screened			No Visual Impact						
					Adverse				Neutral									

5. MITIGATION MEASURES

The visual resource assessment evaluates the visibility and visual contrast of the proposed project elements within the Triple Creek Greenway Corridor and Upland Area landscape units. It also identifies adverse impacts requiring aesthetic impact mitigation. **Tables 3** through **8** summarize the results of the visual impact assessment, including visual character compatibility, viewer sensitivity, and impacts to visual quality.

Appendix C summarizes mitigation commitments to avoid or reduce the visual contrast of project elements and temporary construction impacts.

Mitigation measures focus on improving visual compatibility and avoiding or minimizing negative effects on visual quality by reducing the visual contrast of project elements within the landscape units. The corridor siting and concept design process have contributed to the avoidance and minimization of impacts to the visual resources of the Triple Creek Corridor and Upland Area in a context sensitive manner.

6. REFERENCES

Arapahoe County and City of Aurora. 2011. Triple Creek Greenway Corridor Study.

Federal Highway Administration (FHWA). 1987. Guidance for Preparing and Processing Environmental and Section 4(f) Documents Technical Advisory T6640.8A. October 30, 1987

FHWA. 2015. *Visual Guidelines for the Visual Impact Assessment of Highway Projects*.

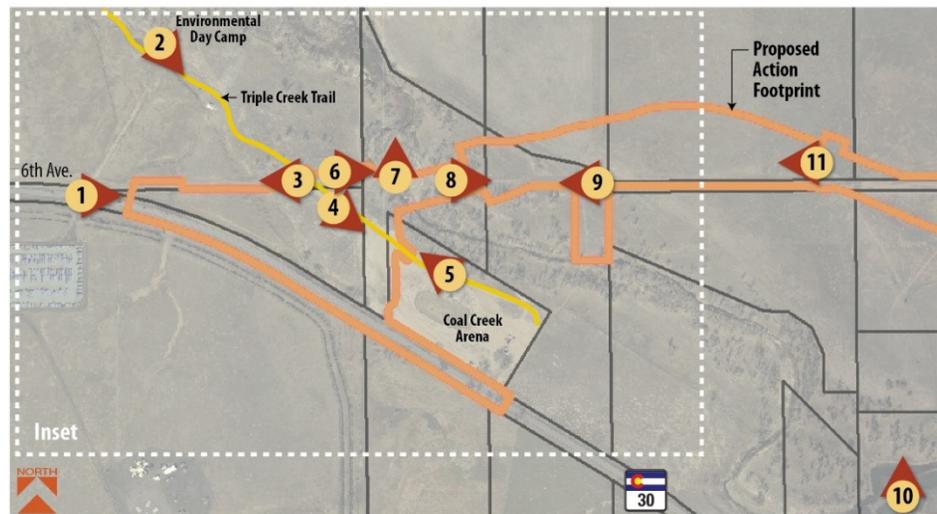
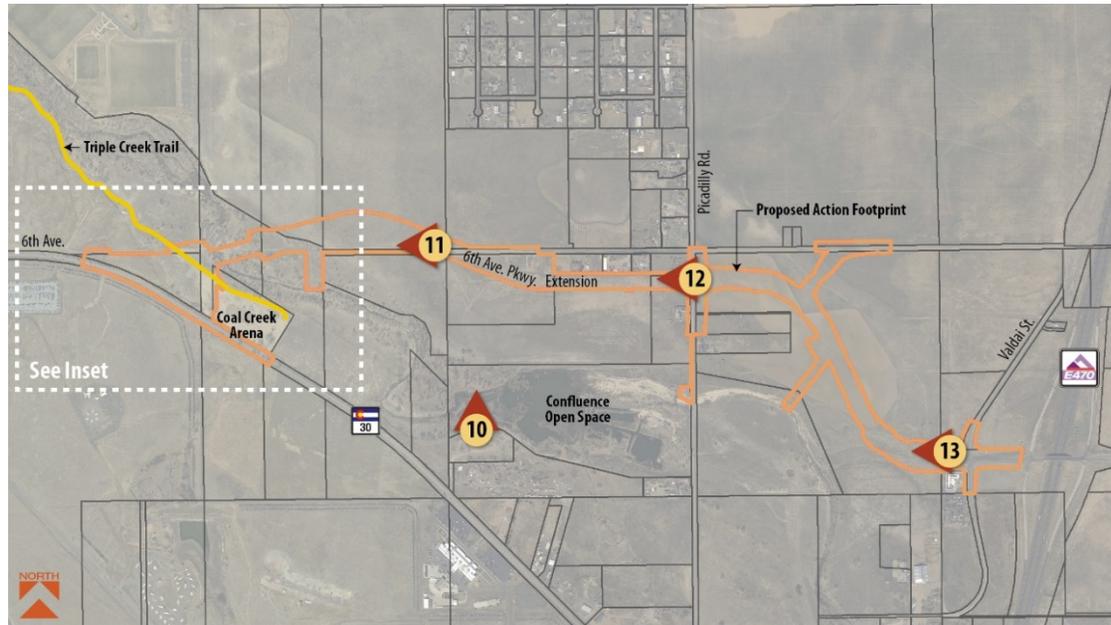
Litton, R. Burton, Jr. 1968. Forest Landscape Description and Inventories – A Basis for Land Planning and Design, (U.S. Department of Agriculture Forest Service Research Paper PSW-49) Pacific Southwest Forest and Range Experiment Station. Berkeley, CA.

Appendix A Visual Character Inventory

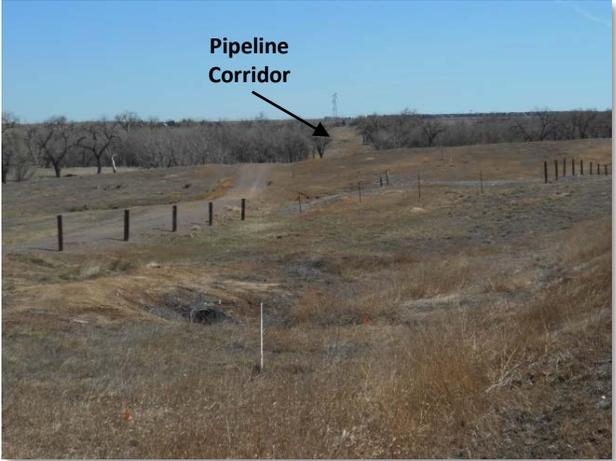
This appendix provides a sequence of photographs to illustrate the visually distinctive resources and visual character of the natural, cultural, and project environments for each landscape unit within the AVE. The photo sequence is generally from west to east, to describe the visual character of the Triple Creek Greenway Corridor and Upland Area Landscape Units. A photo index is included showing the locations of each photo. The selected photos are representative of the Proposed Action corridor landscape, and views from the key viewpoints within each landscape unit. The visual attributes the landscape setting in each photo are described in terms of the form, line, color, and texture. In addition, selected photos illustrate the attributes of the visual character of the Triple Creek Greenway Corridor natural environment associated with land, water, vegetation, animals, and atmospheric conditions.

Photographs of the Triple Creek Greenway Corridor are a 50mm equivalent focal length, to represent the typical foreground viewshed within the open space environment. Photographs in the Upland Area are in a panoramic format, to illustrate the expanse of the upland prairie landscape, and the visual relationship between the upland and lowland settings.

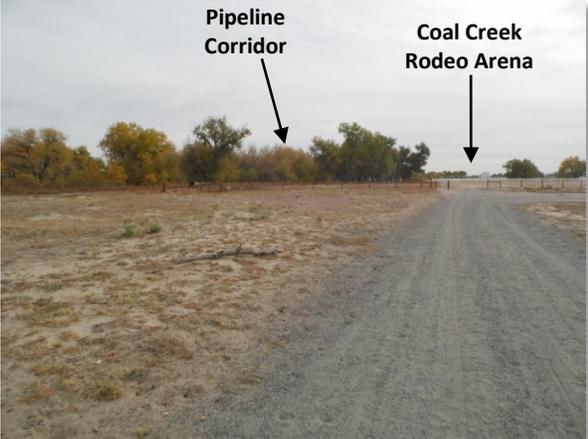
Photo Index



Visual Character Inventory of Landscape Unit Settings

Representative Landscape Settings	Landscape Characterizations of Triple Creek Greenway Corridor (TCGC)	
 <p>Setting 1: View looking east from 6th Avenue /SH 30 toward proposed intersection site</p>	<p>Natural Environment</p>	<p>Form: Panoramic landscape with rolling upland prairie terraces and narrow TCGC lowlands Line: Continuous horizontal skyline established by tree canopies Color: Subtle dark values and blended forest tones contrast with light monochromatic prairie tones Texture: Dense deciduous corridor contrasts with uniform prairie</p>
	<p>Cultural Environment</p>	<p>Form: Uniform with defined edges Line: Converging linear and vertical elements contrast with flowing terraces, and the continuity of TCGC. Distant tower breaks horizon line. Color: Light surfaces contrast with adjacent monochromatic tones Texture: Uniform surfaces contrast with adjacent patterns</p>
	<p>Project Environment</p>	<p>Form: Influence of 6th Avenue /SH 30 highway fill slope Line: Influence of curvilinear 6th Avenue/SH 30 alignment Color: Blends with light monochromatic prairie tones Texture: Blends with modified prairie</p>
 <p>Setting 2: View looking southeast from Environmental Day Camp toward proposed 6th Avenue/SH 30 intersection site</p>	<p>Natural Environment</p>	<p>Form: Expansive terrace with irregular canopies Line: Horizontal plane with rounded horizon line Color: Dark values and blended tones contrast with light monotones Texture: Natural soft and irregular patterns contrast with both dense and patterned trees</p>
	<p>Cultural Environment</p>	<p>Form: Path compatible with terrace setting Line: Curvilinear alignment with soft edge blends with prairie Color: Light muted tone blends with prairie Texture: Rough uniform texture compatible with native prairie</p>
	<p>Project Environment</p>	<p>Form: Absent Line: Absent Color: Absent Texture: Absent</p>

Visual Character Inventory of Landscape Unit Settings

Representative Landscape Settings	Landscape Characterizations of Triple Creek Greenway Corridor (TCGC)	
 <p>Setting 3: View looking southwest from Triple Creek Trail toward proposed 6th Avenue /SH 30 intersection site</p>	Natural Environment	<p>Form: Expansive terrace with irregular canopies, lacking in diversity Line: Horizontal plane with rounded horizon line Color: Dark values and blended tones contrast with eroded earth tones Texture: Dense and patterned trees contrast with irregular pattern of modified prairie</p>
	Cultural Environment	<p>Form: Path compatible with terrace setting Line: Straight alignment with soft edge Color: Light muted tone blends with modified prairie earth tones Texture: Rough uniform texture compatible with modified prairie</p>
	Project Environment	<p>Form: Absent Line: Absent Color: Absent Texture: Absent</p>
 <p>Setting 4: View looking southeast from Triple Creek Trail toward proposed 6th Avenue /SH 30 intersection site</p>	Natural Environment	<p>Form: Simple rolling slope, lacking in diversity Line: Continuous horizon line Color: Monochromatic earth tones Texture: Irregular pattern of modified prairie</p>
	Cultural Environment	<p>Form: 6th Avenue /SH 30 fill slope contrasts with natural prairie terrain Line: Uniform 6th Avenue /SH 30 road grade Color: Blends with light monochromatic prairie tones Texture: Irregular pattern of modified prairie</p>
	Project Environment	<p>Form: Influence of 6th Avenue /SH 30 fill slope Line: Influence of 6th Avenue /SH 30 road grade Color: Blends with light monochromatic prairie tones Texture: Blends with modified prairie patterns</p>

Visual Character Inventory of Landscape Unit Settings

Representative Landscape Settings	Landscape Characterizations of Triple Creek Greenway Corridor (TCGC)	
 <p>Setting 5: View looking north from Coal Creek Arena and Sand Creek Trail toward proposed 6th Avenue /SH 30 intersection and bridge site</p>	<p>Natural Environment</p>	<p>Form: Flat arena terrace and trail at edge of natural riparian corridor Line: Horizontal arena with adjacent irregular canopies Color: Dark values and blended tones contrast with light earth tones Texture: Diverse patterns of native riparian edge contrasts with uniform trail surface</p>
	<p>Cultural Environment</p>	<p>Form: Tubular arena equestrian structures contrast with TCGC forest edge Line: Rectangular shapes typical of equestrian arena Color: White Texture: Smooth equestrian structure surfaces</p>
	<p>Project Environment</p>	<p>Form: Absent Line: Absent Color: Absent Texture: Absent</p>
 <p>Setting 6: View looking east from Triple Creek Trail toward proposed Sand Creek Bridge site</p>	<p>Natural Environment</p>	<p>Form: Clearing contrasts with diverse canopies and complex branching contrast Line: Arching and irregular Color: Dark branching contrasts with riparian understory Texture: Diversity of rugged and uniform patterns</p>
	<p>Cultural Environment</p>	<p>Form: Lacking in natural landscape integrity and uncharacteristic of the canopied forest density of the TCGC Line: Informal trail and clearing edge contrast with natural forest Color: Blended forest and riparian tones contrast with light neutral tones of modified terrain Texture: Modified and irregular</p>
	<p>Project Environment</p>	<p>Form: Absent Line: Absent Color: Absent Texture: Absent</p>

Visual Character Inventory of Landscape Unit Settings

Representative Landscape Settings

Landscape Characterizations of Triple Creek Greenway Corridor (TCGC)



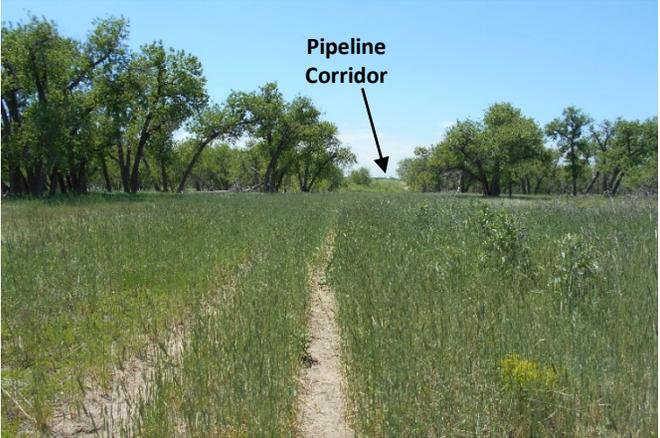
Setting 7: View looking north at Sand Creek stream corridor from proposed Sand Creek bridge site

Natural Environment	<p>Form: Clearing lacks natural landscape integrity and contrasts with enclosed forest canopy</p> <p>Line: Linear clearing contrasts with Sand Creek corridor</p> <p>Color: Blended forest and riparian tones contrast with light neutral tones of modified terrain</p> <p>Texture: Modified and irregular in contrast to adjacent riparian landscape</p>
Cultural Environment	<p>Form: Pipeline clearing and informal trail dominate local setting</p> <p>Line: Unnatural linear edge along pipeline corridor</p> <p>Color: Blended forest and riparian tones contrast with modified terrain</p> <p>Texture: Modified and irregular</p>
Project Environment	<p>Form: Absent</p> <p>Line: Absent</p> <p>Color: Absent</p> <p>Texture: Absent</p>

Visual Character Inventory of Landscape Unit Settings

Representative Landscape Settings	Landscape Characterizations of Triple Creek Greenway Corridor (TCGC)	
	Natural Environment	<p>Form: Arching branches and irregular canopies exhibit greater density during summer months, and more defined shapes and spatial definition during fall and winter months</p> <p>Line: Informal forest edges and open forest floor, with a sense of vastness where the prairie horizon meets the skyline to the east</p> <p>Color: Blended seasonal forest tones</p> <p>Texture: Soft patterns of prairie grasses contrast with coarser patterns of canopied trees. Textures appear coarser and more defined in fall and winter months, and softer and more muted in summer months.</p>
	Cultural Environment	<p>Form: Pipeline clearing is less dominant to the east of Sand Creek</p> <p>Line: Soft and irregular edges along Informal trail</p> <p>Color: Subtle contrast of light trail colors with darker prairie values during summer months, and minimal contrast with neutral prairie values in fall and winter months</p> <p>Texture: Informal trail textures blend in with adjacent seasonal prairie textures</p>
<p>Setting 8: View looking east of Triple Creek Greenway Corridor from proposed Sand Creek bridge site (Fall and summer)</p>	Project Environment	<p>Form: Absent</p> <p>Line: Absent</p> <p>Color: Absent</p> <p>Texture: Absent</p>

Visual Character Inventory of Landscape Unit Settings

Representative Landscape Settings	Landscape Characterizations of Triple Creek Greenway Corridor (TCGC)	
	Natural Environment	<p>Form: Arching branches and irregular canopies with greater spatial definition and density during summer months, and more open shapes and definition during fall and winter months</p> <p>Line: Informal forest edges with open forest floor</p> <p>Color: Blended seasonal forest tones</p> <p>Texture: Soft patterns of prairie grasses contrast with coarser patterns of canopied trees. Textures appear coarser and more defined in fall and winter months, and softer and more muted in summer months.</p>
	Cultural Environment	<p>Form: Pipeline clearing is less dominant to the east of Sand Creek</p> <p>Line: Soft and irregular edges along Informal trail</p> <p>Color: Light trail colors contrast with darker prairie values during summer month, and blend in with neutral prairie values in fall and winter months</p> <p>Texture: Informal trail textures blend in with adjacent seasonal prairie textures</p>
<p>Setting 9: View looking west from pipeline corridor toward proposed 6th Avenue Parkway within Triple Creek Greenway Corridor (Fall and Summer)</p>	Project Environment	<p>Form: Absent</p> <p>Line: Absent</p> <p>Color: Absent</p> <p>Texture: Absent</p>

Visual Character Inventory of Landscape Unit Settings

Representative Landscape Settings

Landscape Characterizations of Triple Creek Greenway Corridor (TCGC)



Setting 10: View looking north from Confluence Ponds toward Proposed Action

Natural Environment

Form: Rounded landforms and irregular tree patterns create a sense of spatial enclosure, and contrast with the reflective water surface
Line: Semicircular
Color: Blended prairie tones with sky reflections
Texture: Contrasting coarse and smooth textures

Cultural Environment

Form: Naturalized gravel quarries
Line: Irregular quarry pit edges
Color: Revegetation blends with adjacent riparian colors and tones
Texture: Pond surfaces contrast with adjacent prairie

Project Environment

Form: Absent
Line: Absent
Color: Absent
Texture: Absent

Visual Character of Triple Creek Greenway Corridor (TCGC) Landscape Unit Settings



Setting 11: View looking west from Triple Creek Greenway boundary toward 6th Avenue Parkway setting

Natural Environment	<p>Form: Rolling prairie terraces extend to TCGC, with a continuous canopied horizon line</p> <p>Line: Dominant and unbroken horizon line</p> <p>Color: Subtle blend of prairie colors contrast with dark deciduous tree values</p> <p>Texture: Uniform patterns of prairie foreground contrast with dense tree-lined horizon</p>
Cultural Environment	<p>Form: Absent</p> <p>Line: Linear contrast of informal trail</p> <p>Color: Light colored trail contrasts with darker prairie values</p> <p>Texture: Informal trail textures contrast with adjacent seasonal prairie textures</p>
Project Environment	<p>Form: Absent</p> <p>Line: Absent</p> <p>Color: Absent</p> <p>Texture: Absent</p>

Visual Character of Upland Corridor Landscape Unit Settings



Setting 12: View looking west from 6th Avenue and Picadilly Road intersection toward Proposed intersection setting

Natural Environment	<p>Form: Flat upland landscape</p> <p>Line: Expansive and unbroken fields</p> <p>Color: Uniform green fields with contrasting dark values of foreground windbreak trees and distant TCGC tree canopies</p> <p>Texture: Uniform</p>
Cultural Environment	<p>Form: Rural residents and tree lines are subordinate in scale with agricultural setting</p> <p>Line: Agricultural fence and wind breaks define a subtle interface between fields and rural residents</p> <p>Color: White and neutral colored buildings</p> <p>Texture: Wind brake trees edges blend in with distant TCGC tree canopies</p>
Project Environment	<p>Form: Absence of vertical elements</p> <p>Line: Picadilly Road</p> <p>Color: Grey</p> <p>Texture: Asphalt</p>

Visual Character of Upland Corridor Landscape Unit Settings



Setting 13: View looking west from E-470 Public Highway Authority Building toward proposed intersection setting

Natural Environment	<p>Form: Rolling prairie terraces extend to TCGC</p> <p>Line: Dominant horizon line</p> <p>Color: Subtle blend of prairie colors contrast with dark deciduous tree values</p> <p>Texture: Uniform patterns of prairie foreground contrast with dense and coarse tree-lined horizon</p>
Cultural Environment	<p>Form: Distant white spheres (radomes at Buckley AFB) break the horizon line</p> <p>Line: Absence of linear features</p> <p>Color: Contrasting white spheres on horizon line</p> <p>Texture: Uniform patterns of prairie foreground contrast with dense tree-lined horizon</p>
Project Environment	<p>Form: E-470 Public Highway Authority intersection at Valdai Street</p> <p>Line: Valdai Street intersection</p> <p>Color: Grey</p> <p>Texture: Asphalt</p>

Selected Visual Character Attributes of the Triple Creek Greenway Corridor (TCGC) Natural Environment



Great-horned Owl



Great-horned Owl

Sand Creek in the Spring

Natural Environment

Land: Typical view of natural terraces along Sand Creek

Water: Narrow meandering Sand Creek channel with undefined edges

Vegetation: Monochromatic spring colors with cottonwood trees and understory of prairie grasses and riparian shrubs

Animals: Diversity of mammals, migratory birds, raptors, bald eagles and water fowl enhance the natural visual character of the TCGC (see Great-horned owl)

Atmospheric Conditions: Vary with the seasonal weather patterns of the Front Range (overcast sky in photo typical of spring)

Selected Visual Character Attributes of the Triple Creek Greenway Corridor (TCGC) Natural Environment



Sand Creek in the Fall

Natural Environment

- Land:** Typical view of natural terraces along Sand Creek
- Water:** Isolated pond within TCGC
- Vegetation:** Bright colors with cottonwood trees in the fall
- Atmospheric Conditions:** Typical clear sky in fall

Selected Visual Character Attributes of the Triple Creek Greenway Corridor (TCGC) Natural Environment



White-tailed Deer in TCGC

Natural Environment

Wildlife: TCGC provides habitat for white-tailed deer and mule deer

Selected Visual Character Attributes of the Triple Creek Greenway Corridor (TCGC) Natural Environment



Shortgrass Prairie

Natural Environment

Land: Panoramic view of prairie terraces above Sand Creek corridor, with Rocky Mountains in the background
Vegetation: Native shortgrass prairie
Atmospheric Conditions: Typical of spring storm along the Front Range

Selected Visual Character Attributes of the Triple Creek Greenway Corridor (TCGC) Natural Environment



Penstemon



Lupine

Prairie Wildflowers

Natural Environment

Vegetation: Diversity of native prairie wildflowers

Appendix B Resource Impact Table

Resource	Context	No Action Alternative	Proposed Action
Visual Resources	<p>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.</p> <p>Triple Creek Greenway Corridor 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>Upland Area Landscape Unit Rural development patterns within the shortgrass prairie uplands create an agrarian landscape appearance with open panoramic views. With future planed development, much of the upland area will transition to an urbanized landscape to the east of the Triple Creek Greenway Corridor.</p>	<p>The Triple Creek Greenway Corridor would retain its natural visual quality as public open space. With future planned development, much of the upland area will transition to an urbanized landscape to the east of the Triple Creek Greenway Corridor.</p>	<p><u>Permanent Impacts</u></p> <p>Triple Creek Greenway Corridor Landscape Unit The visual contrast of the SH 30/6th Ave. intersection, bridge, vegetation clearing, and drainage features, would be:</p> <ul style="list-style-type: none"> ■ Incompatible with the visual character of the Triple Creek Greenway Corridor ■ Within open foreground viewsheds of the Sand Creek Trail ■ Screened from the Environmental Day Camp and Coal Creek Arena viewsheds <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>Upland Area Landscape Unit 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><u>Temporary Impacts</u> Excavation, construction staging, and temporary stockpiles</p>

Appendix C Resource Mitigation Table

Mitigation Category	Visual Impacts	Mitigation Commitments for the 6 th Avenue Extension Project	Responsible Branch	Timing/Phase that Mitigation will be Implemented
Visual Resources/ Aesthetics	Visual contrast of grading	<ul style="list-style-type: none"> ■ Avoid slopes greater than 3:1 to minimize erosion and difficulties with revegetation on steep slopes. ■ Select native plant species that produce dense, fibrous roots to help prevent soil erosion. 	City of Aurora	Design Construction
Visual Resources/ Aesthetics	Visual contrast of Sand Creek bridge structure	<ul style="list-style-type: none"> ■ Select colors, materials, forms, and finishes of bridge and wing walls that blend in and complement landscape features. ■ Avoid reflective surfaces. ■ Coordination of project design with CDOT landscape architect 	City of Aurora	Design Construction
Visual Resources/ Aesthetics	Visual contrast of native vegetation removal in Triple Creek Greenway Corridor	<ul style="list-style-type: none"> ■ Select plants and seed mixes that are consistent with native vegetation types, growth habits and soil types. ■ Plan vegetation clearing edges that create a naturalized line and transition with the landscape setting. ■ Temporary riparian and wetland impacts will be revegetated with appropriate native plants which will mimic adjacent habitats. ■ Mimic surrounding plant density, spacing and species composition. ■ Blend existing natural materials from the site into the project area by saving and reusing stumps, tree logs or native rocks. 	City of Aurora	Design Construction

Mitigation Category	Visual Impacts	Mitigation Commitments for the 6 th Avenue Extension Project	Responsible Branch	Timing/Phase that Mitigation will be Implemented
Visual Resources/ Aesthetics	Visual Contrast of intersection fill slopes	<ul style="list-style-type: none"> ■ 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 ■ Create a naturalized transition with the adjacent landscape setting 		
Visual Resources/ Aesthetics	Visual contrast of native vegetation removal in upland prairie	Create a continuous planting pattern across medians and roadway edges that would blend in with adjacent shortgrass prairie vegetation.	City of Aurora	Design Construction
Visual Resources/ Aesthetics	Visual contrast to residential viewers	Provide appropriate vegetation screening for residents adjacent to roadway and Picadilly intersection		
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
Visual Resources/ Aesthetics	Visual contrast of new building at Coal Creek Arena	Building will be visually consistent with surrounding setting		

Appendix D List of Key Terms

Area of Visual Effect (AVE)

- Area in which views of the project would be visible
- Influenced by intervening topography, vegetation, and structures

Landscape Unit

- A “complete visual environment” or “outdoor room”
- Common patterns of landform, water vegetation, and land use development
- Framework for visual resource inventory and visual assessment

Transactional Perception

- The idea that visual quality is the product of a relationship between the environment and people – what the public actually values about their visual environment, and their perception of visual quality.

Viewshed

- Surface area visible from a given viewpoint, group of viewpoints, or linear feature

Visual Attributes of the Project

- Scale
- Form
- Materials

Visual Character

- Natural environment – land, water, vegetation, animals/wildlife, atmospheric conditions
- Cultural environment – buildings, infrastructure/roads, structures, artifacts and art
- Project environment – geometrics, grading, structures, vegetation, signals and signs

Visual Contrast

- Degree of visual change created between the project and the existing landscape (*weak, moderate, strong*)

Visual Impact

- *Compatibility* with visual character (*compatible* - not contrasting, or *incompatible* - contrasting)
- Sensitivity to viewers (sensitive or insensitive)
- Degree of impact (beneficial, adverse or neutral change to visual quality)

Visual Quality

- Interaction between the visible landscape and the viewing public
- What people like and dislike about the existing visual character of the AVE
- Landscape composition and vividness (memorability of a landscape)

Visual Resources

- Features that define the visual character, visual quality, and experience of viewers