



# Visual Resources Technical Report - I-270 Corridor Improvements Environmental Impact Statement

Federal Project No.: STU 2706-043

CDOT Project Code: 25611

Identification Number: FHWA-CO-EIS-24-001

July 2025



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## Acronyms and Abbreviations

| Acronym | Definition                            |
|---------|---------------------------------------|
| AVE     | Area of Visual Effect                 |
| BNSF    | BNSF Railway                          |
| CDOT    | Colorado Department of Transportation |
| EIS     | Environmental Impact Statement        |
| FHWA    | Federal Highway Administration        |
| I-25    | Interstate 25                         |
| I-270   | Interstate 270                        |
| I-70    | Interstate 70                         |
| I-76    | Interstate 76                         |
| ITS     | Intelligent Transportation Systems    |
| mph     | miles per hour                        |
| NEPA    | National Environmental Policy Act     |
| project | I-270 Corridor Improvements Project   |
| ROW     | Right of Way                          |
| RTD     | Regional Transportation District      |
| SB 40   | Colorado Senate Bill 40               |
| UPRR    | Union Pacific Railroad                |
| VIA     | Visual Impact Assessment              |

## 1.0 Introduction

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The Federal Highway Administration (FHWA) and Colorado Department of Transportation (CDOT) are preparing an Environmental Impact Statement (EIS) to evaluate potential improvements to the Interstate 270 (I-270) corridor. FHWA and CDOT are the lead agencies for this National Environmental Policy Act (NEPA) process, which was initiated in 2020, initially anticipating an Environmental Assessment. Moving into 2023, CDOT determined a more detailed environmental review was needed and requested that an EIS be prepared.

This technical report evaluates and documents potential impacts to visual resources and recommended mitigation measures for visual resources. It supports the analysis and conclusions in the EIS.

### 1.1 Project Description

I-270 in Colorado is a controlled-access interstate highway with two through lanes in each direction between Interstate 25 (I-25) and Interstate 70 (I-70) in central Denver and Commerce City (Figure 1). It has a posted speed limit of 55 miles per hour (mph). The project limits include the I-270 interchanges with Interstate 76 (I-76), York Street, Vasquez Boulevard, and Quebec Street. The project will tie into the I-25 and I-70 system interchanges, but improvements to these interchanges are part of projects on I-25 and I-70 and will be designed and approved separately.

The purpose of the I-270 Corridor Improvements Project is to implement transportation solutions that modernize the I-270 corridor to accommodate existing and forecasted transportation demands. The project needs are:

- Traveler safety on the corridor,
- Travel time and reliability on the corridor,
- Transit on the corridor,
- Bicycle and pedestrian connectivity across I-270, and
- Freight operations on the corridor.

In addition to addressing project needs, CDOT, FHWA, and Cooperating and Participating Agencies have established a key project goal: to minimize environmental and community impacts resulting from the project.



**Figure 1. I-270 Corridor Improvements Project Limits**


## 2.0 Draft Alternatives

CDOT developed a range of potential alternatives for I-270 improvements. The alternatives ranged from no improvements to minimal infrastructure improvements without added highway capacity to alternatives that added one or two travel lanes in each direction, which could be operated as transit, general-purpose, or Express Lanes.

A two-level alternatives evaluation process was used to screen the alternatives based on the project's purpose and need and goal, and two build alternatives were carried forward for detailed analysis in the EIS:

- Three General-Purpose Lanes Alternative
- Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative

The No Action Alternative is also fully evaluated as a baseline for comparison.

Additional information on the alternatives development and evaluation process is included in the Alternatives Development Technical Report.

## 2.1 No Action Alternative

The No Action Alternative evaluates operations of I-270 if a build alternative would not occur along the corridor. It does not address the project purpose and need but is carried forward as a baseline for comparison. This alternative would maintain the existing highway configuration of two general-purpose travel lanes in each direction. Bridges and pavement would be maintained and repaired continuously, but underlying infrastructure deficiencies would remain.

The No Action Alternative would include substantial ongoing maintenance and the rehabilitation of 19 existing structures, including seven locations that have structures that are or will be reaching the end of their useful life. The age of the structure, recent bridge inspections, and current ongoing maintenance costs, both planned and emergency maintenance, determine if a structure is or will be reaching the end of its useful life. The seven structure locations along the I-270 corridor that are or will be reaching the end of their useful life are as follows:

- Vasquez Bridge over Sand Creek (E-17-AT)
- York Street Bridge over I-270 (E-17-IC)
- I-270 over South Platte River Eastbound and Westbound Bridges (E-17-IE & E-17-ID)
- I-270 over Burlington Ditch Eastbound and Westbound Bridges (E-17-IG & E-17-IF)
- I-270 over Brighton Boulevard, Union Pacific Railroad (UPRR) and BNSF Railway (BNSF) Eastbound and Westbound Bridges (E-17-II & E-17-IH)
- I-270 over 60th Avenue & BNSF Eastbound and Westbound Bridges (E-17-IK & E-17-IJ)
- I-270 over East 56th Avenue Eastbound and Westbound (E-17-IO & E-17-IN)

The cross section would remain unchanged along I-270 under the No Action Alternative. The No Action Alternative cross sections are shown on Figure 2 and Figure 3.

Figure 2. No Action Alternative (west of Vasquez Boulevard)

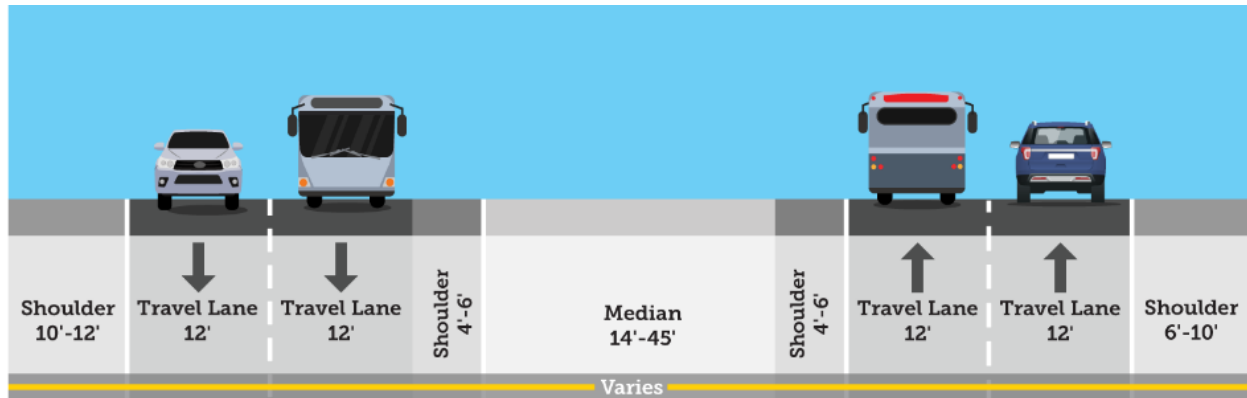
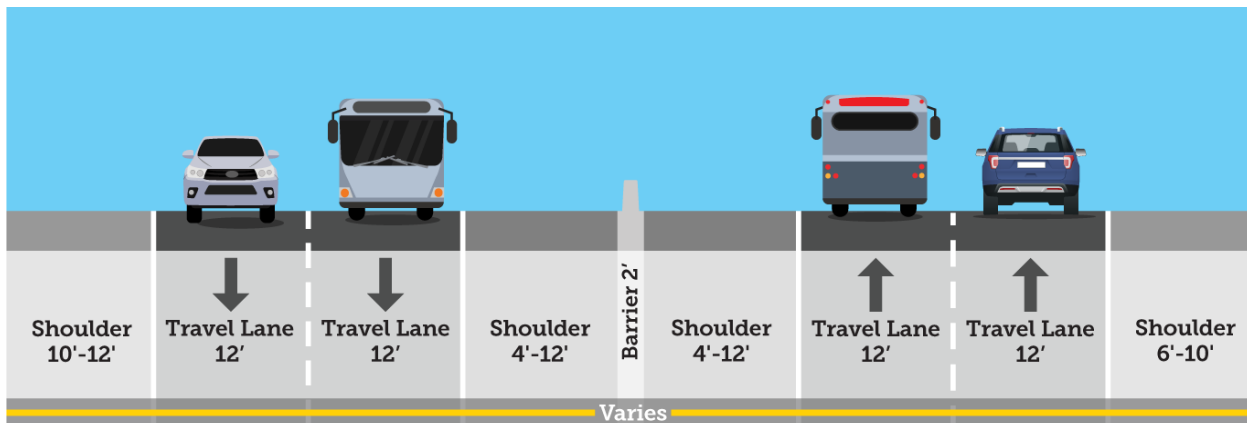


Figure 3. No Action Alternative (east of Vasquez Boulevard)



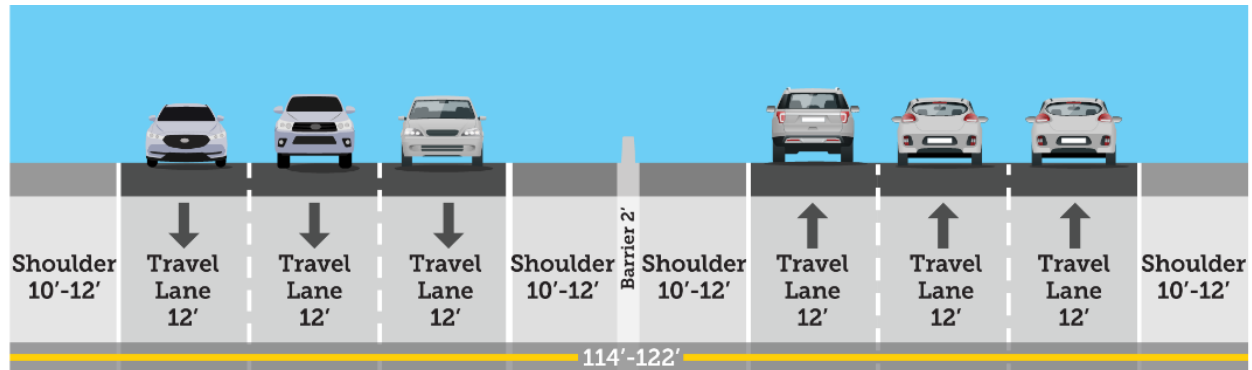
## 2.2 Build Alternatives

The build alternatives include improving the operational and physical conditions of the I-270 highway; reconfiguring interchanges and ramps; enhancing transit on the corridor; improving bicycle and pedestrian access across I-270; replacing deficient bridges and other infrastructure; and providing modern drainage, water quality, intelligent transportation systems (ITS), and other supporting infrastructure. Both add one new travel lane in each direction and have similar footprints, varying primarily by how the additional travel operates.

### 2.2.1 Three General-Purpose Lanes Alternative

This alternative would reconstruct I-270 to provide three general-purpose lanes in each direction as shown in Figure 4.

**Figure 4. Three General-Purpose Lanes Alternative**



This alternative includes:

#### **Mainline Improvements**

- Providing three general-purpose lanes in each direction
- Widening shoulders to meet current standards
- Restriping of the westbound I-270 to northbound I-25 off-ramp to provide dual-exit lane capacity
- Adding emergency turnouts and turnaround
- Adding one continuous auxiliary lane in each direction between the I-76 and Vasquez Boulevard on-ramps and off-ramps

#### **Interchange Improvements**

- Adding an eastbound collector ramp to consolidate incoming movements from the I-76 on-ramps
- Separating the westbound I-270 York Street and I-76 off-ramps
- Improving the Vasquez Boulevard interchange design with improved westbound on-ramp acceleration lanes and the eastbound off-ramp deceleration lanes
- Improving the Quebec Street interchange ramp acceleration and deceleration lengths

#### **Bridge Improvements**

- Reconstructing bridges that are at, or will be reaching, the end of their useful life. Bridges carrying travel lanes on I-270 include widening to accommodate additional lanes
  - Replacing the existing York Street bridge over I-270 to meet current bridge standards, accommodate an additional travel lane in each direction on York Street, include a 10-foot multi-use path and a 5-foot sidewalk, and enhance lighting
  - Replacing the existing I-270 bridges over the South Platte River Trail to meet current bridge standards, accommodate this project's bicycle and pedestrian improvements on the South Platte River Trail, and enhance lighting
  - Replacing the existing I-270 bridges over the Burlington Ditch to meet current bridge standards, accommodate future bicycle and pedestrian improvements, and enhance lighting



- Replacing the existing I-270 bridges over Brighton Boulevard to meet current bridge standards, accommodate this project's bicycle and pedestrian improvements on Brighton Boulevard and future bicycle and pedestrian improvements by others, and enhance lighting
- Replacing the existing I-270 bridges over East 60th Avenue and the BNSF crossing to meet current bridge standards, accommodate future bicycle and pedestrian improvements, and enhance lighting
- Replacing the existing I-270 bridges over East 56th Avenue to meet current bridge standards, accommodate this project's bicycle and pedestrian improvements, and enhance lighting
- Replacing the existing Vasquez Boulevard bridge over Sand Creek to meet current bridge standards and accommodate this project's bicycle and pedestrian improvements

### **Bicycle and Pedestrian Improvements**

- Improving the York Street I-270 ramp terminal intersections with crosswalks, curb ramps, and pedestrian indicators at the ramp terminal traffic signals
- Adding a new 5-foot sidewalk on the west side and reconstructing a 6-foot sidewalk on the east side of Brighton Boulevard under I-270
- Reconstructing East 56th Avenue under I-270 and adding an on-street bicycle lane, a 10-foot multi-use path, and 6-foot sidewalk connecting to existing sidewalks
- Improving the intersection at East 56th Avenue and South Sandcreek Drive to include curb ramps, crosswalks, and lighting that meet current standards
- Improving the intersection at East 56th Avenue and Eudora Street to include curb ramps, crosswalks, and lighting that meet current standards
- Adding attached sidewalks on the west side of South Sandcreek Drive. The new sidewalks would be 8 feet wide from Quebec Street to East 47th Avenue Drive and 6 feet wide from East 47th Avenue Drive to East 49th Avenue, with a pedestrian crosswalk across East 47th Avenue Drive connecting the two segments
- Improving wayfinding at key locations, guiding bicyclists and pedestrians to the nearest Regional Transportation Districts (RTD) bus stops, major road connections, or distances to the next trailhead to avoid out-of-direction travel

### **Trail Improvements**

- Reconfiguring the South Platte River Trail crossing under I-270 to improve bicycle and pedestrian visibility around tight curves and increase vertical clearance from the I-270 overpass
- Improving bicycle and pedestrian visibility on the Sand Creek Trail by straightening out tight curves, adding a center stripe, and enhancing lighting at the Vasquez Boulevard bridge over the Sand Creek Trail
- Adding a multi-use path with bicycle and pedestrian underpasses crossing under two free-flow interchange ramps on the east side of Vasquez Boulevard through the interchange with enhanced lighting
- Adding a multi-use path on the east and west sides of the Vasquez Boulevard bridge over Sand Creek, connecting users from the East 56th Avenue and Vasquez Boulevard intersection to a new connection to the Sand Creek Trail

- Adding a multi-use trail spur, connecting the proposed north-south Vasquez Boulevard multi-use trail to the East 56th Avenue and South Sandcreek Drive intersection
- Adding a multi-use path in the southeast corner of East 56th Avenue and South Sandcreek Drive
- Adding a 10-foot-wide bicycle and pedestrian overpass over I-270 and South Sandcreek Drive approximately halfway between East 56th Avenue and Quebec Street

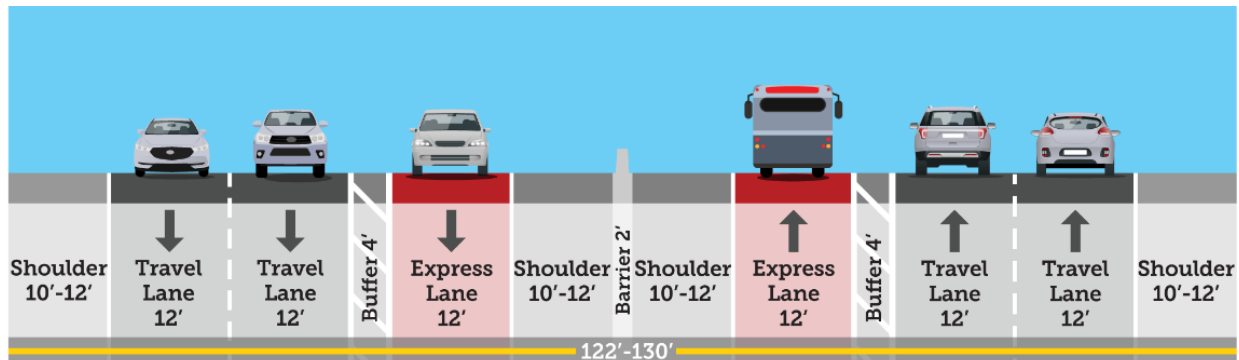
### Transit Improvements

- Adding four new bus stops with connecting sidewalks and curb ramps on Quebec Street and South Sandcreek Drive near the I-270/Quebec Street interchange to improve access to RTD routes 88 and 37

### 2.2.2 Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative

This alternative would reconstruct I-270 with two general-purpose lanes and one Express Lane in each direction as shown in Figure 5. Transit vehicles and high-occupancy vehicles (three or more people) could travel in the Express Lane, free of charge. Other travelers, including freight trucks, who choose to pay a fee could also use the new Express Lane.

**Figure 5. Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative**



This alternative includes:

### Mainline Improvements

- Providing two general-purpose lanes and one Express Lane in each direction that accommodates transit
- Remainder of mainline improvements identified in the Three General-Purpose Lanes Alternative

### Interchange Improvements

This alternative includes the same interchange improvements identified in the Three General-Purpose Lanes Alternative.

## Bridge Improvements

This alternative includes the same bridge improvements identified in the Three General-Purpose Lanes Alternative.

## Bicycle, Pedestrian, Trail, and Transit Improvements

This alternative includes the same bicycle, pedestrian, trail, and transit enhancements identified in the Three General-Purpose Lanes Alternative.

## 3.0 Context

No federal, state, or local regulations affecting visual resources apply. The project follows the CDOT Visual Impact Assessment (VIA) Guidelines (Colorado Department of Transportation 2020).

In addition, the Highway Beautification Act of 1965 will be considered. The Highway Beautification Act of 1965 was a law signed by President Lyndon B. Johnson to limit billboards, junkyards, and other visual clutter along American highways. The Highway Beautification Act of 1965 aimed to improve the appearance of highways by controlling outdoor advertising, removing certain signs, and encouraging scenic development.

Also, the *Commerce City Comprehensive Plan* includes directives to improve visual quality to and from I-270 in specific “focus areas,” as follows (City of Commerce City 2010):

- Southern Industrial (all of Commerce City south of I-270): “Improve image along I-270.”
- Tiffany (between I-270 and 56th Avenue, and Quebec Street, and Park Industrial Center entrance): “Work with CDOT and private owners to improve appearance of I-270 corridor; improve appearance from I-270.”
- Adams City (generally between I-270 and I-76, and Brighton Boulevard, and South Platte River): “Improve the area’s image seen from I-270.”
- Clermont (triangular area bordered by I-270, Brighton Boulevard, and Vasquez Boulevard): “Image from I-270 needs improvement.”

## 4.0 Methods

The VIA follows CDOT guidelines

(<https://www.codot.gov/programs/environmental/landscape-architecture/visual-resources/visual-impact-assessment-guidelines>). The VIA documents visual attributes of alternatives, the landscape context, and regulatory requirements.

## 5.0 Existing Conditions

### 5.1 Landscape Observations

The study area is within an area described as Front Range Urban, in CDOT’s Guidelines. The topography is primarily flat, with no adjacent landforms. Front Range mountains are visible in the distance to the west and north but are faint and low on the horizon. The landscape character reflects predominantly industrial and transportation uses. Buildings are generally one-story to two-story, blocky forms of utilitarian industrial design (no or few windows or aesthetic treatments) and differing colors without visual coherence. Expansive parking lots

house numerous commercial trucks and earth-moving equipment behind 6-foot, chain-link fences. Several associated transportation features are prevalent, such as large green overhead directional signs, guardrails, light fixtures, on-ramps and off-ramps, overpasses, and jersey barriers. Weeds are also evident in the grassed median. Traffic is often congested, creating views of tightly spaced commercial trucks and commuter vehicles. Intermittent, small, deciduous trees occasionally occupy the clear zones.

Traveling west to east, the six-lane highway narrows to four lanes, where it crosses 70th Avenue. The highway itself is a strong visual element, creating a wide swath of gray asphalt pavement. An elevated ramp that connects with the I-76 interchange roughly parallels I-270 to the south, creating a strong horizontal form. I-270 crosses over Clear Creek, which is not readily visible from the highway. At this point, elevated views are generally of the highway's horizon line.

Where I-76 and the southbound on-ramp are prominent, linear forms, I-270 passes under I-76. I-270 then rises from a road cut, where deciduous trees to the south add a natural element for a short distance, replaced by a stone wall until I-270 crosses under York Street. I-270 continues through a grassy road cut, which generally blocks views to either side. The highway reaches level ground with views of Welby Reservoir to the north behind a tall, chain-link fence and clusters of deciduous trees to the south. The landscape is more open and undeveloped but unremarkable in this area. Large, lattice-style transmission towers are prominent, vertical elements traveling north-south across the highway, and transmission lines create multiple horizontal lines across the sky.

I-270 crosses the South Platte River, which is approximately 110 feet wide in this area. Sand Creek branches from the river south of the highway. Where the Sand Creek Greenway path begins paralleling I-270 to the south, a multiuse bridge gently curves over both waterways. A narrow swath of deciduous trees and riparian vegetation line these waterways. The landscape remains somewhat open, as the highway gently climbs toward Vasquez Boulevard, passing over Burlington Ditch/O'Brien Canal and under an elevated railroad track, marking the entrance to Commerce City.

The Suncor Energy Inc. refinery becomes visible to the south. This sprawling facility is a notable visual feature, with multiple cylindrical storage tanks of varying heights and girths; low warehouse-type buildings; parking lots; and an extensive number of pipelines and prominent, vertical towers densely clustered together, forming several visual "islands." On the opposite side of the highway, Land O'Lakes Purina Feed's tall, blocky structures; several bright blue, industrial crane parts; parked commercial trucks; and wide white storage tanks crowd closer to I-270 and are dominant visual features. In this area, two railroad tracks cross under I-270, cutting a linear swath through the refinery and adjacent industrial areas.

The highway passes over Vasquez Boulevard, a major cloverleaf interchange. The buildings of downtown Denver can be seen in the distance to the south, but they are low on the horizon line. The highway continues to parallel Sand Creek east of Brighton Boulevard, curving slightly to follow the creek's alignment. The creek is flanked by a narrow riparian area, and deciduous trees line the creek's greenway, interjecting some minor natural features along the remaining length of the highway that are mostly overwhelmed by the industrial and transportation setting.

I-270 then passes a residential area, South Rose Hill. These residences face the north side of Sandcreek Drive, which parallels the north side of the highway for approximately 900 feet. These houses are small, one-story, single-family structures, some of which are behind 6-foot-high wooden privacy fences of differing construction. Deciduous trees in this neighborhood are visible from I-270. Views to the south of the neighborhood are expansive, with distant views of the Denver skyline and Front Range mountains.

Continuing south, the general pattern of industrial uses to the north and Sand Creek to the south continues until the highway reaches Quebec Street, where a northbound highway entrance ramp creates an opaque “wall” to the north. I-270 passes under Quebec Street, and the landscape opens somewhat where I-270’s traffic lanes diverge then merge with I-70.

## 5.2 Influence of the Roadway on the Natural and Cultural Setting

The highway is a prominent, constructed feature in an area with few natural elements. As a constructed feature within a highly industrial area, I-270 fits within the context of the surrounding urban environment. Industrial uses crowd the adjacent areas to the interstate, particularly south of Brighton Boulevard. I-270 generally follows the course of Sand Creek south of Vasquez Boulevard, following the gentle curves of the creek. However, the creek itself is not visible from the highway, although riparian vegetation indicates its presence. Because of extensively developed surroundings, no other natural surface relief remains in the area.

## 5.3 Landscape Context and Development Patterns

The existing landscape context is primarily urban and industrial. The landscape adheres to historical development patterns that started in the 1930s and 1940s, when burgeoning industrial uses emerged along the railroad as Denver’s industrial development spread north along Brighton Boulevard. Heavy industries, such as refineries, grain elevators, and flour mills became established in the area. In 1942, the U.S. Army created the Rocky Mountain Arsenal, a chemical weapons facility, which operated into the 1960s. Then it was converted into a chemical facility for Shell Petroleum and later converted into a wildlife refuge in 1992. The *Commerce City Comprehensive Plan* calls for a continuation of industrial uses along the I-270 area and includes goals to retain the existing general industrial use, particularly south of I-270 (City of Commerce City 2010). Therefore, these development patterns are likely to continue into the future.

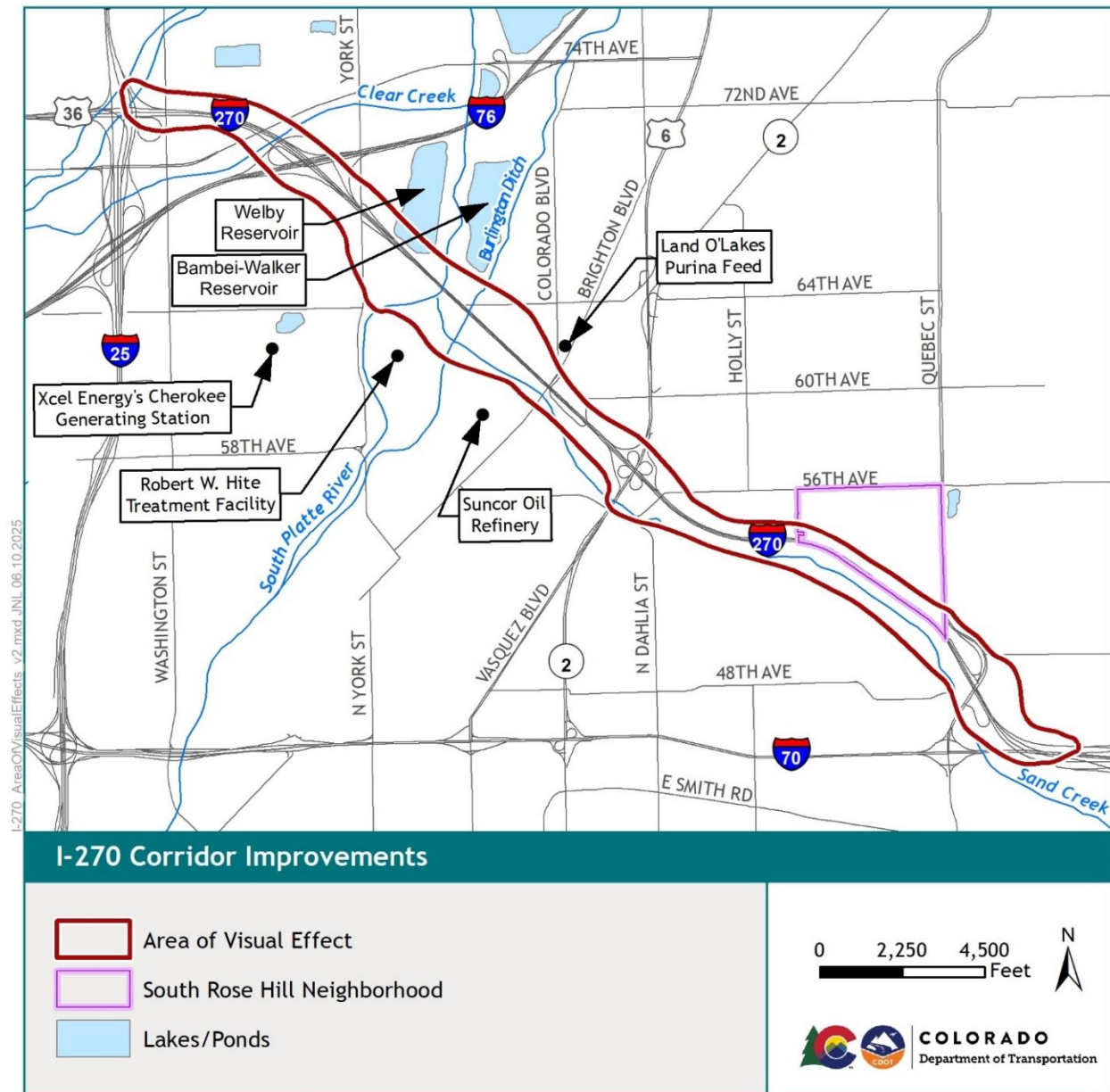
## 5.4 Area of Visual Effect

This analysis considers views in the foreground (up to 0.25 miles to 0.5 miles), middle ground (extending 3 miles to 5 miles), and background (extending to infinity), as defined by CDOT’s Guidelines. These definitions help define the visual study area for the project, known as the Area of Visual Effect (AVE). The AVE includes Front Range panoramas, as defined in CDOT’s Guidelines as “visually prominent features” that are “visible from the project area but separated by great distance” (CDOT 2019a). Landscape units establish the context for the visual inventory and are a spatially defined landscape with a visually distinctive identity or “sense of place” (CDOT 2019a). Because of the study area’s mostly homogenous landscape character, one landscape unit was defined for the study area, common with the AVE boundary.



The AVE for this project, which was developed in Esri ArcGIS 10.7.1, identified areas that are visible from I-270 up to and including the middle ground, according to elevation data from the National Elevation Dataset, provided by the U.S. Geological Survey. Figure 6 depicts the AVE for the project. This visibility mapping process used ground contour data and height information for buildings and vegetation. Green areas on Figure 6 depict the extent of views for travelers on I-270. Using these data, a line roughly defines the visual extent of “visually distinctive natural and cultural features and dominant focal points” (CDOT 2019a). In some open areas, buildings are not located as close to I-270, allowing for more expansive views, such as near the South Platte River. In such locations, the AVE deviates slightly farther from the highway. However, these areas also include prominent, visual intrusions, such as warehouses, a refinery, and large transmission line structures. Figure 7 depicts areas along I-270 and potentially affected roads within the AVE that offer travelers background views of the mountains or downtown Denver skyline. This information helped plan locations of highway elements that could potentially obstruct distant views.

**Figure 6. Area of Visual Effect**



Mountain views are constant for westbound travelers along the entire length of I-270. However, the quality of those views varies; the view quality is indicated as high, medium, and low is shown on Figure 7, which also includes representative photos of each view type. Elements affecting view quality primarily include viewing direction and obstacles, such as overpasses. Views of downtown Denver for eastbound travelers are infrequent and typically of low quality because of distance and obstruction by industrial features. These views are also to the south and out of the direct line of sight for drivers, who would be looking southeast. Therefore, views of downtown Denver are limited primarily to vehicle passengers.

Representative views of the study area are shown on Figure 8, which is within a regional context, as identified in CDOT's Guidelines as Front Range Urban. I-270 travels through predominantly industrial and transportation land uses, which characterize the surrounding landscape and views. Warehouses, parking lots occupied by freight vehicles, and construction cranes are typical, visual components. The Suncor Energy Inc. refinery, south of I-270 and east of Brighton Boulevard, is a notable industrial feature because of its widespread footprint and conspicuous vertical features, which remain prominent at night because of extensive lighting. Highway lights, lights from motor vehicles, as well as other adjacent industrial and commercial facilities impact the night sky. I-270 itself is a noticeable visual element, consisting of four paved travel lanes, major interchanges, and prominent signage suspended on overhead gantries. A large volume of traffic, often at a standstill during rush hours, includes a high number of large freight vehicles and automobiles. Two railroads cross under I-270 just south of Brighton Boulevard, contributing additional transportation features to the landscape. All of these elements primarily occupy foreground views (0.25 miles to 0.5 miles away).

**Figure 7. Distant Views**





Figure 8. Representative Views



I-270 crossing the South Platte River with a pedestrian bridge for the Sand Creek Greenway trail and industrial development in the background, facing southwest.





I-270 and Vasquez Boulevard interchange with industrial and commercial development surrounding the interchange, facing north.



I-270 crossing over the BNSF and UPRR railroads and Brighton Boulevard. Sand Creek and the Sand Creek Greenway trail run along the south side of I-270. Industrial development surrounds the highway, facing northwest.





I-270 crossing over the Burlington Ditch and Sand Creek Regional Greenway trail. The RTD N Line crosses over I-270 and vacant and industrial development surrounds the corridor, facing south.



I-270 crossing over a railroad spur and 60th Avenue with industrial development surrounding the highway, facing northwest.



Typical signage on I-270, facing northwest.



Minor exceptions to this setting interject slight variations into the landscape but are insufficient to change its overall industrial nature. Also within foreground views, these exceptions include the South Platte River, which I-270 crosses—and Sand Creek, which roughly parallels the south side of I-270 from the river to I-70. A narrow riparian area of deciduous trees borders the creek, and it is most visible where it is closest to I-270, generally south of 56th Avenue. In this area, the I-270 profile elevates above the creek; it is seldom visible from the highway; and the riparian vegetation indicates its presence. This vegetation offers a negligible amount of vividness during the late spring and summer seasons, where the leaves' texture and color contrast with surrounding, human-made features that characterize the landscape. During the late fall and winter seasons, the river is likely more visible but not a dominant feature. Approximately 0.5 miles south of 56th Avenue, a south-facing viewing platform provides views of a spillway and the riparian vegetation. Welby Reservoir and Bambei-Walker Reservoir are north of the highway on opposite sides of the South Platte River. A chain-link fence surrounds Welby Reservoir, and it is readily visible from I-270. A former gravel mine (Denver Water 2020), this reservoir can be dry during droughts, as evidenced during project reconnaissance. Front Range mountains are visible in the background (defined as extending to infinity) for westbound travelers, and the downtown Denver skyline is occasionally visible in the middle ground (up to 3 miles to 5 miles) for eastbound travelers, particularly from elevated interchanges.

A handful of residences are north of Welby Reservoir, but most are screened from highway views. A noise wall helps obscure views of I-270 for residents on the west side of the highway. A larger residential area (South Rose Hill) is north of I-270, generally between Newport Street and Krameria Street. Few of these residences have views of I-270, with some views blocked by existing fences. However, I-270 is within 125 feet of those viewers closest to the highway, who have a level line of sight to it. View duration for residents (considered to be sensitive viewers) is high. Other neighbors with views toward I-270 include employees of industrial areas, although the buildings are primarily windowless. Travelers with views from I-270 include truckers and commuters. Because of the area's industrial nature, I-270 rarely has leisure driving; however, tourists may use it to access further destinations and the nearby Rocky Mountain Arsenal National Wildlife Refuge. Heavy congestion increases the duration of views, which include more vehicles and vehicles in closer proximity.

Travelers also include users of the Sand Creek Greenway multiuse trail, who would typically move through the landscape at a slower pace than drivers. Because I-270 is mostly above the creek, the highway's visibility varies along the greenway.

The landscape character reflects a disorderly composition—out of balance with few natural and cultural features present, as they are powerfully overshadowed by industrial and transportation elements. Industrial facilities show no visual interrelation and lack unity of form, line, color, and texture, particularly where large visual intrusions, such as the Suncor Energy Inc. refinery dominate views. The Suncor Energy Inc. refinery, Robert W. Hite Treatment Facility, and Xcel Energy's Cherokee Generating Station occupy substantially large parcels west of I-270 between Franklin Street and Brighton Boulevard, where views from the highway are more open; therefore, giving these facilities heightened, visual prominence. The sprawling Suncor Energy Inc. refinery, with its soaring vertical, lattice-like structures, is distinctive even within the industrial landscape, making an immediate and vivid but not a



positive impression. Similarly, the power station's expansive structures, particularly its tall, red-and-white-striped smokestack and shorter, unpainted smokestacks, are strikingly disparate visual elements, even though the site is 0.75 miles from I-270. Despite these visually pronounced intrusions, the industrial setting lacks vividness because of its overall homogeneity. Although I-270 follows the contours of Sand Creek south of the South Platte River, the highway is not a unified element of the landscape, as the form, line, color, texture, and scale of the roadway elements overpower the presence of the creek, which is already an anomaly in the industrial setting. I-270 does not blend into the landscape, which generally lacks landforms, vegetation, or visually coherent development patterns that the highway could reflect. The discordant setting displays no integrity of composition and therefore, is not intact or unified. For these reasons, the landscape is inharmonious, and vividness is moderately low, resulting in low overall visual quality.

## 6.0 Impacts Assessment

This section documents the extent of visual resources under consideration as part of this project and anticipated impacts.

### 6.1 No Action Alternative

No noticeable visual change would occur in the study area under the No Action Alternative. Existing visual elements would remain. As congestion continues, slow-moving traffic would occupy views both from and toward the highway, further degrading the area's image. No actions would be implemented to improve the area's visual image. Temporary visual intrusions would occur in the form of ongoing and periodic highway maintenance activities.

### 6.2 Three General-Purpose Lanes Alternative

#### 6.2.1 Permanent Impacts

Long-term visual changes would result primarily from widening I-270 by adding new travel and auxiliary lanes, widening bridges and shoulders, reconfiguring existing interchanges, and, to a lesser extent, flattening some curves. Although the highway would occupy a wider footprint and introduce some new highway features, the proposed changes would be compatible with the visual character of the landscape, as they would employ similar lines, colors, and textures, and repeat transportation elements already in the landscape. Visual contrast between the existing landscape and the proposed project would be primarily weak for the same reasons.

Horizontally extending the visual impact of I-270 would be most noticeable to travelers driving on I-270 and residents closest to I-270 within the South Rose Hill neighborhood resulting in slight adverse impact to these viewers. Although a new lane, extended ramps, and auxiliary lanes would widen the extent of vehicle lights, this change would be negligible compared to existing conditions and the surrounding industrial environment. Reconfiguring the Vasquez Boulevard interchange would be noticeable, but the ramp alignment would not exceed a 5 percent grade, and other vertical slopes would not exceed a 3:1 grade. Therefore, views toward the mountains may remain unhindered. In addition, the interchange design would reduce the visual impact of this transportation feature and provide slight beneficial impacts. Installing new traffic signals as a result of the reconfiguration would not noticeably

impact views and landscape character. Overall, impacts at Vasquez Boulevard would be both adverse and beneficial but negligible.

A noise wall would be constructed north of I-270 in the South Rose Hill neighborhood if more than 50 percent of the residents indicate support for the wall during the Benefited Receptor Preference Survey. The wall would introduce a new visual impact to adjacent residents. However, this impact would likely be beneficial as it would screen residents from both the existing and project related visual impacts associated with I-270. All proposed retaining walls would be west of Vasquez Boulevard and would primarily affect views for I-270 travelers; adverse impacts would vary based on wall height, which would range from 5 feet to 30 feet. Retaining walls may visually impact views for up to three residents on either side of the highway, in the vicinity of York Street but could also screen views of the highway. New areas of cut and fill would remain within the I-270 right-of-way (ROW) but would be visible at the open areas between the South Platte River and O'Brien Canal. New drainage structures and permanent water quality ponds may introduce some natural elements (water) to the landscape with slight beneficial effects. ITS improvements, particularly variable message signs, and the new pedestrian overpass would add new vertical features that could potentially block distant views, particularly of mountains for westbound travelers.

Trees may be removed from the greenways to accommodate highway expansion, removing natural elements that are uncommon in the area and resulting in a potential adverse impact to trail users. Any impacts to trees would be subject to the tree mitigation plan developed for this project. Minimal changes may be made to the South Platte River Trail and Sand Creek Greenway, the latter of which would remain below the highway's grade, thereby precluding highway views for trail users. The new pedestrian path at Vasquez Boulevard would offer more views of the new I-270 highway infrastructure. Landscaping within the Vasquez Boulevard interchange would introduce some natural elements to the industrial setting with slightly beneficial impacts.

Corridor design guidelines developed for this project would help "improve the industrial image" of the study area, particularly the appearance of the I-270 corridor. Overall, the study area would retain its industrial and transportation visual character, and visual quality in the study area would remain low.

Figure 9 shows a rendering of I-270 for the Three General-Purpose Lanes Alternative. Figure 10 shows a rendering of the new pedestrian overpass, which is part of both build alternatives. Figure 11 shows a rendering of the Dahlia Trailhead, which is also part of both build alternatives.

Figure 9. Three General-Purpose Lanes Alternative Configuration



Figure 10. I-270 Pedestrian Overpass



Note that this is a rendering of a potential design style for the overpass. The ultimate design of the overpass will be determined in final design with stakeholder input.



**Figure 11. Dahlia Trailhead**



### **6.2.2 Temporary Impacts**

Temporary visual impacts would result from views of staging areas to cache construction materials. Temporary visual impacts would also result from views of large, slow-moving, and stationary construction vehicles, as well as construction personnel and temporary construction mitigation measures, such as concrete barriers, orange fencing, construction lighting, temporary earthwork storage, silt fences, and erosion logs.

## **6.3 Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative**

### **6.3.1 Permanent Impacts**

Permanent impacts for the Two-General Purpose Lanes and One Express Lane that Accommodates Transit Alternative are generally the same as the Three General Purpose Lanes Alternative. The additional impacts for this alternative include tolling infrastructure consisting of overhead signage, toll cameras, and a slightly wider footprint to accommodate a buffer between the general-purpose and Express lanes.

Figure 12 shows a rendering of the Two General Purpose-Lanes and One Express Lane that Accommodates Transit Alternative configuration.



**Figure 12. Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative Configuration**



### **6.3.2 Temporary Impacts**

Temporary impacts associated with the Two General-Purpose Lanes and One Express Lane that Accommodates Transit Alternative are the same as those for the Three General-Purpose Lanes Alternative.

## **7.0 Mitigation Measures**

Throughout this project, interdisciplinary coordination has occurred, as the potential for adverse visual impacts has been considered. In accordance with CDOT's Guidelines, the team has considered options to minimize visual impacts. The study team met with representatives from several organizations, including the Sand Creek Greenway as well as members of the general public; including Cultivando, a community nonprofit organization that helped convene a community focus group who met with the study team and provided input. Due to public input, the potential alternatives include landscaping to address comments received that the Vasquez Boulevard interchange area has low visual quality, thereby helping to minimize visual impacts at that area.

In addition, I-270 Corridor Aesthetic Design Guidelines will be prepared for this project to "provide a vision to guide the design of future projects and improvements. It will identify specific areas along the corridor in order to implement the mitigation strategies. The design philosophy captures how an overall corridor will look and may include reducing contrast, maintaining background views of key visual resources, or integrating the project into the surrounding context" (CDOT 2019a). The design guidelines will provide opportunities to both minimize and compensate for adverse visual impacts. These project-specific guidelines will be developed in coordination with the existing I-70 and I-25 Design Guidelines, with reference to

the Central Park (formerly Stapleton) Design Guidelines, US 36 Guidelines, and I-76 Guidelines, to help ensure a cohesive highway design within the larger geographic area. Per discussion with CDOT, a tree mitigation plan will be incorporated into the design guidelines developed for this project. Any tree with a diameter at breast height greater than 4 inches will be inventoried and mitigated, as specified in the plan, with a goal to limit impacts and enhance views. The potential alternatives also include landscaping to address comments received that the Vasquez Boulevard interchange area has low visual quality.

As an overview, CDOT applies SMART (specific, measurable, achievable, realistic, timely) criteria to develop effective NEPA mitigation commitments for visual impacts that are financially feasible and can be included in CDOT's project delivery process. A summary of visual impacts and mitigation measures is shown in Table 1.

**Table 1. Summary of Impacts and Mitigation - Build Alternatives**

| <b>Activity Triggering Mitigation</b> | <b>Location of Activity</b> | <b>Impact</b>                                                                                                          | <b>Mitigation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>Responsible Branch</b>                                | <b>Timing/Phase that Mitigation will be Implemented</b> |
|---------------------------------------|-----------------------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------|
| Highway widening                      | Corridor wide               | Visual impacts associated with highway widening and other infrastructure changes                                       | Corridor Aesthetic Design Guidelines will be developed to guide the design and future corridor improvements. Guidelines will include color, texture, and materials to ensure coherent design along the corridor. Design guidelines will include strategies for addressing slopes steeper than 3:1. Design guidelines will examine local jurisdictions' (Commerce City, Adams County, and Denver) master plans. The public will have an opportunity to provide input into the guidelines. | CDOT Design Engineer and Landscape Architect             | Final Design                                            |
| Installation of new traffic signals   | Vasquez interchange         | Install new traffic signals at Vasquez Boulevard, which would have negligible impacts to views and landscape character | Landscape features will be added at new intersections. Clear zones and sight triangles will be verified for all landscape elements. Landscape elements will meet corridor design guidelines.                                                                                                                                                                                                                                                                                             | CDOT Engineering and Landscape Architect, and Contractor | Final Design and Construction                           |

|                                                                    |                  |                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                       |                                                                |                               |
|--------------------------------------------------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-------------------------------|
| Installation of walls (noise and retaining)                        | York Street area | Install walls, which would primarily affect views for I-270 travelers. Walls may visually impact views for up to three residents on either side of the highway, in the vicinity of York Street, as well as local residents. Installation of walls may provide visual coherence | The material, texture and color of the walls will be per corridor aesthetic design guidelines. Walls should be thoughtful placed offset from sidewalks and trails to consider the pedestrian scale and allow for plantings. Consider terracing retaining walls where adjacent to pedestrian and bicycles trails and sidewalks for comfort and safety. | CDOT Engineering and Landscape Architect, and Contractor       | Final Design and Construction |
| Installation of Intelligent Transportation Systems (ITS) equipment | Project Area     | ITS improvements, particularly variable message signs equipment would introduce new vertical features that could potentially block distant views, particularly of mountains for westbound travelers                                                                            | The CDOT environmental team will work with the ITS designers to identify locations of large vertical structures. Proactive measures will be taken to locate ITS equipment to minimize obstructions of distant mountain and Denver skyline views.                                                                                                      | CDOT Engineering, ITS, and Landscape Architect, and Contractor | Final Design and Construction |



|                  |              |                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                 |                                                          |
|------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------|
| Removal of trees | Project Area | <p>Trees may be removed from the greenways to accommodate highway expansion, removing natural elements that are uncommon in the area</p> | <p>Senate Bill 40 (SB40) Wildlife Certification will be required for this project. Per SB40 requirements, “all practicable effort shall be expended to avoid unnecessary destruction of trees and shrubs in the vicinity of streams and in riparian areas.</p> <p>Trees removed should be considered for use onsite in a manner that improves riparian and in-stream habitat and for bank stabilization purposes. Any riparian trees removed will be replaced, according to the tree mitigation plan that will be developed for this project, which will be based on SB 40. Riparian trees and shrubs will be planted along the waterways replaced in accordance with SB40 Tree Mitigation Plan.</p> <p>Any upland tree identified for removal with a diameter at breast height greater than 4 inches will be inventoried. All upland trees greater than 4 inches in diameter at breast height will be replaced on a 1:1 basis.</p> <p>Use trees adapted to Colorado, low water and salt and pollution tolerant. PD503.1 Landscaping requires the use of native species where no irrigation is available. Kentucky bluegrass should not be used per Colorado’s recent greening of government initiatives. Use of xeriscaping principles, shrub selected for the site conditions.</p> <p>Tree replacement to consider the site and site conditions. Street trees should be adapted to the soils and moisture conditions. Riparian and wetland tree replacement should be with native trees where they are not in conflict with the interstate or trails and sidewalks. All trees should be irrigated or watered for establishment for a period of 3 years.</p> | <p>CDOT Engineering and Landscape Architect, and Contractor</p> | <p>Final Design, Construction, and Post-construction</p> |
|------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------|

|                                                              |                    |                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                              |                                                   |
|--------------------------------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|---------------------------------------------------|
| General construction activities                              | Project Area       | Temporary visual impacts would result from views of staging areas to cache construction materials; from views of large, slow-moving, and stationary construction vehicles; and construction personnel and temporary construction mitigation measures, such as silt fences | Restore staging areas and construction mitigation, such as silt fences, per CDOT Design Specification 106.08, Storage of Materials: "All storage sites shall be restored to their original condition at the Contractor's expense" (CDOT 2019b) and Section 208.4(f), CMs for Stormwater: "If [temporary control measures are] removed, the area in which these control measures were constructed shall be returned to a condition similar to that which existed prior to its disturbance" (CDOT 2019c). Restoration includes but is not limited to seeding in accordance with CDOT Procedural Directive 503.1.<br>Use tree protection to protect trees designated to remain and riparian and wetland areas from construction traffic, staging and storage of materials. | CDOT Engineering and Environmental, Contractor               | Final Design, Construction, and Post-Construction |
| Lighting of construction site                                | Construction areas | Temporary visual impacts from stray light                                                                                                                                                                                                                                 | Minimize stray light in the illumination plan for I-270 to the people in the adjacent communities (this can be done with designing the headlamps to be downcast)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | CDOT Design Engineer and Landscape Architect, and Contractor | Final Design and Construction                     |
| Addition of new lighting or enhancement of existing lighting | Study area         | Visual impacts from stray light                                                                                                                                                                                                                                           | Minimize stray light in the illumination plan for I-270 to the people in the adjacent communities to the extent possible (this can be done with designing the headlamps to be downcast)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CDOT Design Engineer and Landscape Architect, and Contractor | Final Design and Construction                     |

## 8.0 Required Permits and Coordination

There are no required permits or coordination needed for visual resources.

## 9.0 References

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## Attachments

CDOT is dedicated to providing an accessible experience for everyone. While we are continuously improving our standards, some complex items in this document, such as certain figures and images, are difficult to create with fully accessible parameters to all users. If you need help understanding any part of this document, we are here to assist and have resources to provide additional accessibility assistance to any requests. Please email us at [CDOT\\_Accessibility@state.co.us](mailto:CDOT_Accessibility@state.co.us) to request an accommodation, and a member of our I-270 Engineering Program will schedule a time to review the content with you. To learn more about accessibility at CDOT, please visit the [Accessibility at CDOT webpage on the CDOT Website](#).



## Attachment A. Visual Scoping Questionnaire

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NOTE: This attachment is not able to be included with the EIS at this time due to accessibility. If you would like a copy of this attachment or to sit down with a project team member to review this attachment, please contact the project team at [cdot\\_i270@state.co.us](mailto:cdot_i270@state.co.us) or 303-512-4270.