5.8 Visual Resources and Aesthetic Qualities

This section discusses the visual resources and aesthetic qualities in the study area and explains why they are important to the project. The impacts of the project alternatives on these resources also are evaluated and proposed mitigation measures are discussed to offset any potential adverse effects.

Since the Supplemental Draft EIS was published in August 2014, additional analyses and content review have been performed for many of the resources discussed in this document. These updates, along with changes resulting from the comments received on the Supplemental Draft EIS, have been incorporated into this Final EIS. In this section, the updates include the following items:

- An Aesthetic and Design Guidelines plan for the corridor was developed. This document is included as Attachment O to the Final EIS.
- Section was reorganized to better describe impacts from the alternatives.

5.8.1 What are visual resources and why are they important to this project?

FHWA defines visual resources in the memorandum, “Esthetics and Visual Quality Guidance Information” as, “those physical features that make up the visible landscape, including land, water, and vegetative and man-made elements. These elements are the stimuli upon which actual visual experience is based.” (FHWA, 1986, page 5)

NEPA and CEQ regulations identify aesthetics as one of the elements in the human environment that must be considered in determining the effects of a proposed project. Visual resources make up the aesthetic qualities of an area. They are important to this project, especially between Brighton Boulevard and Colorado Boulevard, because the existing viaduct has a dominant visual presence in the area and any changes to it will result in changes in the surrounding environment.
5.8.2 What study area and evaluation process were used to analyze visual resources?

The study area for visual resources is composed of two parts: (1) the view from the highway, and (2) the view of the highway from surrounding neighborhoods.

An inventory of visual resources seen from key observation points (vantage points) within the study area was developed through field survey and public scoping meetings. These resources were evaluated to determine their aesthetic quality—either positive or negative—and then reviewed to identify potential impacts from the project alternatives. Computer simulations, photos, aerial imagery, site visits, and draft engineering drawings assisted in this evaluation.

In compliance with FHWA visual impact assessment guidance (FHWA, 1986, page 136), the visual quality or aesthetic quality of each resource is noted, rated, and compared to the existing conditions based on the following terms from FHWA guidelines:

- **Vividness.** How memorable and distinctive the landscape component is.
- **Intactness.** How much visual integrity the natural and human-built landscape has, and its freedom from encroaching elements.
- **Unity.** How much visual coherence and compositional harmony the landscape has, considered as a whole.

Potential impacts are noted when the view of a visual resource is blocked or impeded, the view is changed, and if light and glare would adversely affect the day or night view.

Following this assessment, each of the project alternatives was assessed for potential impacts from light and glare to visual resources.

5.8.3 What are the existing visual resources along I-70?

The general visual character along I-70 is urban, dominated by commercial and industrial warehouses, transportation facilities, and residential structures. Visual resources are those that are visible to travelers on I-70 and those that are visible from the surrounding neighborhoods. Due to the visual character of the corridor being urban, the number of visual resources is too numerous to identify every resource.
As a result, the locations of some of these resources are shown in **Exhibit 5.8-1** and are explained in detail in this section. These resources have been identified through public involvement and include views from the highway and views of the highway, depending on their location.

**Exhibit 5.8-1   Visual Resources along I-70**

![Visual Resources along I-70](image)

**I-70 East highway**

The highway has a large footprint and is a dominant landscape feature. Concrete traffic lanes, overpasses, barriers, and moving vehicles dominate the visual character of I-70, which is typical of urban highways. Throughout the project corridor, I-70 is either elevated on a bridge structure (the viaduct) or at grade. The viaduct portion begins at the I-25 interchange and extends eastward to just west of the Colorado Boulevard interchange. The at-grade portion of the highway extends from just west of the Colorado Boulevard interchange to the eastern edge of the project corridor at Tower Road.

![I-70 at Colorado Boulevard looking west](image)
The visual presence of the roadway is greater where it is elevated because it is more noticeable from afar and more dominant from nearby as compared to the at-grade section. The presence of the highway also is distinctly greater to nearby residential neighborhoods. Most nearby residents dislike the viaduct visually because it dominates views. This is considered an aesthetic disadvantage to the neighborhood.

**Rocky Mountains**

Travelers going west on I-70, and some residents in the surrounding neighborhoods, can view the Front Range of the Rocky Mountains. The mountains are visible at the far west on a clear day and are considered a desirable visual resource in the area.

**Downtown skyline**

Downtown Denver is located approximately five miles southwest of the I-70 viaduct. The downtown skyline is visible only to the travelers on I-70 near or on the viaduct. The viaduct and the larger industrial buildings block this view from the residential neighborhoods in the area. The view of the downtown skyline is a desirable resource that should be preserved and enhanced.

**I-25 interchange**

The I-25 and I-70 interchange is located at the western edge of the project corridor. This interchange also is known locally as the “mousetrap” due to sharp turns of the original design. The visual characteristic of this resource is that of a typical highway-to-highway interchange, so it is not considered a negative or positive visual resource.
**Nestlé Purina PetCare Company**

The Nestlé Purina PetCare Company operates a large manufacturing facility in the center of the Elyria and Swansea Neighborhood. This facility is located to the south, adjacent to the existing I-70 viaduct, and dominates the skyline of the area with its large white concrete façade.

This building has been a major landmark in the area for decades. Due to its shape and condition, however, it is not considered a desirable visual resource. Other commercial facilities along the corridor have a similar visual quality, including Manna Pro Corporation, Univar, Safeway Distribution Center, and numerous other warehouses and distribution buildings.

**Swansea Elementary School**

Swansea Elementary School serves grades pre-kindergarten through fifth in the Denver Public Schools District and is located in the Elyria and Swansea Neighborhood just north of the I-70 viaduct. The school is one of the few public facilities in this neighborhood and is highly valued by the residents. The school also is only visible from surrounding residences north and south of I-70. The school’s playground provides a view of mature trees and playground facilities for residents.

**I-70 viaduct**

The construction of the I-70 viaduct in 1964 bisected the Elyria and Swansea Neighborhood. This aging viaduct is considered structurally deficient and functionally obsolete by CDOT and FHWA standards. The viaduct is a dominant visual feature in Elyria and Swansea. The viaduct is considered undesirable by residents, as it visually divides the neighborhood.
**Sand Creek Greenway corridor**

The existing I-70 alignment, immediately east of Quebec Street, crosses over the Sand Creek Greenway corridor. The Sand Creek Greenway corridor is a natural area and open space that includes an urban greenway trail. The corridor has an aesthetically high value, though it is difficult to see from the highway.

**Central Park Boulevard interchange**

The Central Park Boulevard and I-70 interchange is located in the eastern portion of the project corridor. The visual characteristic of this resource is that of a typical highway-to-major street interchange, so it is considered a neutral visual resource.

**I-225 interchange**

The I-225 and I-70 interchange is located in the eastern portion of the project corridor. The visual characteristic of this resource is that of a typical highway-to-highway interchange, so it is not considered a negative or positive visual resource.
Impacts to aesthetic qualities were assessed for views of the highway from the surrounding area and views from the highway that drivers will experience. Various tools were used for this assessment, including visual simulations, vantage point views, and aesthetic quality rating criteria. The conclusions made through this assessment are the basis for identifying the impacts from alternatives.

**Changes to views from the highway**

For the No-Action Alternative and the Revised Viaduct Alternative, vehicles traveling eastbound on I-70 between Brighton Boulevard and Colorado Boulevard will experience a view similar to the existing conditions. Traveling westbound on I-70, the views will be slightly different depending on the north or south options.

Vehicles traveling west on the highway with the North Option of each alternative will experience a view similar to existing conditions, with the Nestlé Purina PetCare Company’s building remaining on the south side of the highway and a view of the mountains to the far west. The new noise walls on the viaduct, however, will obstruct views of the downtown skyline.

Vehicles traveling west on the highway with the South Option of each alternative will have a different view compared to existing conditions due to removal of the Nestlé Purina PetCare Company facility. The new viaduct’s noise walls also will obstruct views of the downtown skyline.

The views for vehicles traveling eastbound and westbound with the Partial Cover Lowered Alternative will be entirely different from the existing conditions. Between the UPRR tracks and Colorado Boulevard, vehicles traveling on I-70 in either direction will be below the existing ground level with retaining walls on each side, resulting in completely different views for drivers on the highway as compared to the existing conditions. The view under the covered area is constrained by the cover...
and the height of the walls separating eastbound and westbound traffic.

Other features that will be part of the I-70 East project include new or rebuilt water quality ponds, detention basins, retaining walls, and so on. These features will change the terrain and, therefore, the visual environment along the project corridor that people on or off the highway are accustomed to seeing. These other features will be designed in accordance with the Aesthetic and Design Guidelines, as seen in Attachment O of this document.

With the Managed Lanes Option, vehicles traveling on I-70 experience slightly different views from the General-Purpose Lanes Option because of the direct connections from the managed lanes to other facilities at I-270, I-225, and Peña Boulevard.

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

As part of the analysis, vantage points were selected between Brighton Boulevard and Colorado Boulevard to prepare visual simulations for the project alternatives. The vantage points were selected in this area because the major changes to the visual resources occur between Brighton Boulevard and Colorado Boulevard. The field of view of the visual simulations is limited to match the human-eye view, but the overall visual analysis considers the entire view. Exhibit 5.8-2 shows the location and direction of the vantage points for which visual simulations have been prepared. Although the exhibits simulate the potential future view, they do not show the specific final aesthetic treatments, styles, and colors that may be used.

Exhibit 5.8-2 Vantage Points
Vantage Point 1—Elyria and Swansea Neighborhood north of I-70

The first vantage point is identified on the west side of the UPRR tracks on Vine Street in the residential area of the Elyria and Swansea Neighborhood. The Vantage Point 1 visual simulations are pointed southeast toward one of the tallest buildings and a major landmark in the area, the Nestlé Purina PetCare Company facility.

The Revised Viaduct, North Option will not substantially change the visual character of this vantage point. A new bridge structure with larger column spacing—as envisioned in preliminary designs—will slightly improve the aesthetic quality of this area compared to the existing conditions.

The Revised Viaduct, South Option also replaces the bridge structure but removes the Nestlé Purina PetCare Company facility, resulting in a greater visual change in the area. Removing this building potentially opens up some views to the downtown Denver skyline; however, it will be limited from this vantage point because of the viaduct structure.

With the Partial Cover Lowered Alternative, the area will be less visually dominated by the highway structure. Safety barriers will introduce a new, though smaller, visual obstacle to the area.

The Managed Lanes Option for the Revised Viaduct Alternative and Partial Cover Lowered Alternative will require construction and installation of new infrastructure on the highway in the form of overhead gantries and new signage. This addition will create new visual impacts along the project corridor.

**Exhibit 5.8-3** shows the visual simulations of Vantage Point 1 for Build Alternatives compared to the existing conditions.
Exhibit 5.8-3 Vantage Point 1: Elyria and Swansea Neighborhood North of I-70

Existing conditions

Revised Viaduct Alternative, North Option

Revised Viaduct Alternative, South Option

Partial Cover Lowered Alternative
Vantage Point 2—Swansea Elementary School

The second vantage point is on Elizabeth Street, adjacent to Swansea Elementary School, on the north side of the highway. The Vantage Point 2 visual simulations are pointed southwest toward Swansea Elementary School, which is one of the major landmarks in the neighborhood.

The Revised Viaduct Alternative, North Option and Partial Cover Lowered Alternative propose changes and updates to the school property because they move the highway closer to the school and require acquisition of a portion of the school property. Exhibit 5.8-4 shows the changes in the visual character for Build Alternatives compared to the existing conditions. The new space under the viaduct would be designed in context with input from the community and Denver and will follow the *Aesthetic and Design Guidelines* prepared for the corridor, provided in Attachment O of this document.

The Managed Lanes Option for the Revised Viaduct Alternative and Partial Cover Lowered Alternative will require construction and installation of new infrastructure on the highway in the form of overhead gantries and new signage. This addition will create new visual impacts along the project corridor.

The overall visual character and aesthetic quality of this area will improve as a result of the new facility with all of the alternatives as envisioned in the preliminary designs. Although the visible mass of the structure increases with the Revised Viaduct Alternative, this alternative improves the aesthetic quality by replacing the old viaduct with new infrastructure. The Partial Cover Lowered Alternative improves the aesthetic quality of the area more than the No-Action and Revised Viaduct Alternatives because it reduces the roadway’s visual dominance in the area by removing the existing viaduct and introducing a new public space.
Exhibit 5.8-4  Vantage Point 2: Swansea Elementary School

Existing conditions

Revised Viaduct Alternative, North Option

Revised Viaduct Alternative, South Option

Partial Cover Lowered Alternative
Vantage Point 3—Elyria and Swansea Neighborhood south of I-70

The third vantage point is south of the existing highway on Fillmore Street in the Elyria and Swansea Neighborhood. The Vantage Point 3 visual simulations point north toward the highway.

The Managed Lanes Option for the Revised Viaduct Alternative and Partial Cover Lowered Alternative will require construction and installation of new infrastructure on the highway in the form of overhead gantries and new signage. This addition will create new visual impacts along the project corridor.

The overall visual character and aesthetic quality of this area will improve as a result of the new facility with all of the alternatives. Although the visible mass of the structure increases with the Revised Viaduct Alternative, this alternative improves the aesthetic quality by replacing the old viaduct with new infrastructure. With the Partial Cover Lowered Alternative, similar to the first and second vantage points, the highway will be below the existing ground level, making it less visible in this area. Safety barriers will introduce a new, though smaller, visual obstacle to the area.

**Exhibit 5.8-5** shows the visual simulation of the Build Alternatives compared to the existing conditions.
Exhibit 5.8-5 Vantage Point 3: Elyria and Swansea Neighborhood South of I-70

Existing conditions

Revised Viaduct Alternative, North Option

Revised Viaduct Alternative, South Option

Partial Cover Lowered Alternative
Aesthetic quality assessment

The effects to the aesthetic quality caused by impacts to visual resources were assessed by comparing the existing conditions to the project alternatives. The comparison reviewed each alternative for vividness, intactness, and unity of the visual character of the area. Each of the project alternative would provide visual continuity for the corridor and compliment aesthetic treatments through the use of wall colors, textures, and forms to unite the corridor. **Exhibit 5.8-6** summarizes the aesthetic quality effects of each alternative compared to the existing conditions. The following criteria were used to rate the aesthetic quality of alternatives:

- **Vividness**
  - Low: Mundane or nondescript landscape
  - Moderate: Some features with striking attributes
  - High: Presence of dominant feature

- **Intactness**
  - Low: Built features placed without sensitivity to or in conflict with existing setting
  - Moderate: Built features placed somewhat in response to existing setting
  - High: Natural and built components in balance and harmony with each other and their relationship to the landscape

- **Unity**
  - Low: Reduced integrity due to prevalence of incompatible structures including conflicting scales, colors, or purposes
  - Moderate: Presence of some features not compatible with the existing landscape
  - High: The visual elements of the environment join together to form a harmonious visual pattern

Visually successful projects generally have a high balance of this criteria.
Exhibit 5.8-6  Aesthetic Quality Effects Summary

<table>
<thead>
<tr>
<th>Alternative/Option</th>
<th>Vividness</th>
<th>Intactness</th>
<th>Unity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing Conditions</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>No-Action Alternative, North Option</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>No-Action Alternative, South Option</td>
<td>Moderate</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Revised Viaduct Alternative, North Option</td>
<td>High</td>
<td>Low</td>
<td>Moderate</td>
</tr>
<tr>
<td>Revised Viaduct Alternative, South Option</td>
<td>Moderate</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Partial Cover Lowered Alternative</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
</tbody>
</table>

The existing conditions between Brighton Boulevard and Colorado Boulevard have a high vividness rating. The highway structure and several large industrial buildings on the south side of the highway are dominant and memorable features for the viewers. The existing condition is rated low for intactness because the presence of the highway and industrial buildings conflict with the residential setting. Unity is rated low because the visual elements of the area do not form a harmonious pattern.

The visual character for the No-Action Alternative, North Option is similar to the existing visual character because the structure will be rebuilt similarly to the existing viaduct, but only slightly modified to comply with the current safety and engineering standards. Intactness is rated low because the presence of the highway and industrial buildings conflict with the residential setting. Unity is rated low because there will be no improvements to the community with this alternative and the visual elements of the area do not form a harmonious pattern.

Vividness for the No-Action Alternative, South Option is moderate because this option will remove the tallest structure in the area (Nestlé Purina PetCare Company), eliminating one of the dominant features. Intactness is rated low because the presence of the highway and industrial buildings conflict with the residential setting. Unity is rated low because the highway still will be visible from the surrounding neighborhoods and there will be no changes or beautification to the school and the neighborhoods north of the highway and visual elements of the area do not form a harmonious pattern.

The Revised Viaduct Alternative, North Option has a high vividness rating. The highway structure and several large industrial buildings on the south side of the highway are dominant and memorable features for the viewers.
Intactness is rated low because the presence of the highway and industrial buildings conflict with the residential setting. Unity is rated as moderate because of the modifications to the Swansea Elementary School site and additional amenities under the viaduct. The new structure also could incorporate more creative and visually pleasant design elements. These will help to create a somewhat harmonious visual pattern. Because the viaduct will still be visible from the community, though, and the expansion to the north brings the highway closer to the school, it results in a visual feature that is not compatible with the rest of the landscape.

The aesthetic quality for the Revised Viaduct Alternative, South Option is similar to the No-Action Alternative, South Option, discussed earlier in this subsection.

The Partial Cover Lowered Alternative offers high vividness, intactness, and unity. The lowered highway will have noise walls or safety barriers that can incorporate artistic designs which are meaningful to the neighborhood, and the proposed cover will introduce a new urban gathering or park space in the neighborhood, which results in creating a memorable feature for the viewer and, therefore, high vividness for this alternative.

Unity and intactness also are rated high because the presence of the highway will no longer be visible from the surrounding neighborhoods. A new park in the area that covers the highway and proposed modifications to the school property also will contribute to the high unity and intactness of this alternative because the natural and built components will be in balance and harmony with their surroundings and with each other.

**Summary of impacts to visual resources and aesthetic qualities**

Impacts to visual resources caused by the project alternatives result in changes to the aesthetic quality of the corridor. **Exhibit 5.8-7** describes the general type of improvement by the project alternatives and visual resources that will be affected.

The majority of impacts to visual resources occur from Brighton Boulevard to Colorado Boulevard in the Elyria and Swansea Neighborhood; therefore, the visual assessment focuses on this area. The following discussions identify effects to visual resources in this area by the project alternative and option and discuss the minor visual impacts associated with the Managed Lanes Option.
### Exhibit 5.8-7 Effects to Visual Resources by Type of Improvement

<table>
<thead>
<tr>
<th>Description of Improvements</th>
<th>Positive and Negative Visual Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Widening:</strong> Widening the highway to accommodate additional traffic</td>
<td>Highway widening increases visible mass, which is considered a negative effect. The South Expansion Option for the Revised Viaduct Alternative and the No-Action Alternative will result in removal of the Nestlé Purina PetCare Company structure, which is considered a positive visual effect.</td>
</tr>
<tr>
<td><strong>Lowering the highway below grade:</strong> Moving the highway below existing grade between Brighton Boulevard and Colorado Boulevard</td>
<td>Lowering I-70 removes the existing viaduct between Brighton Boulevard and Colorado Boulevard and eliminates a dominant skyline obstruction. The visual presence of the highway will be decreased in this area, which is considered a positive effect.</td>
</tr>
<tr>
<td><strong>Walls:</strong> The project alternatives may include noise walls measuring 10 feet to 20 feet tall or safety barriers adjacent to the roadway</td>
<td>Noise walls block views from surrounding land uses and increase the highway’s visible mass, which is considered a negative effect. Noise walls or safety barriers also present opportunities for context-sensitive mitigation and artistic treatments, which is considered a positive effect. Retaining walls present opportunities for context-sensitive mitigation and artistic treatments, which is considered a positive effect.</td>
</tr>
<tr>
<td><strong>Interchange and structures:</strong> Bridges average 25 to 40 feet in height. Proposed improvements at interchanges may increase the existing vertical profile of interchange structures by as much as 12 feet.</td>
<td>Bridges and interchanges have the potential to block views from surrounding land uses, which could be considered a negative effect. Bridges and interchanges offer opportunities for context-sensitive mitigation and architecturally pleasing treatments, which could be considered a positive effect.</td>
</tr>
<tr>
<td><strong>Light and glare:</strong> Additional lighting will be added for safety and to avoid the &quot;black hole effect&quot; of lowering the highway below grade</td>
<td>Adding a new light source in the area could change the visual appearance of the area. However, since the project corridor is an urban setting, the additional lighting from the highway will not cause major negative impacts to aesthetic qualities.</td>
</tr>
</tbody>
</table>

There are minor impacts to visual resources between Colorado Boulevard and Tower Road. The only changes to the visual resources in this area resulting from the Build Alternatives are the increase in highway width, which results in a wider paved area and removal of vegetation adjacent to the existing highway. However, clearing and grubbing in this area will be a minimal change and will not result in a substantive impact to the visual character of the area. Direct connections at I-270, I-225, and Peña Boulevard with the Managed Lanes Option pose new visual barriers in these sections, but this is not considered a substantive impact since they do not block a valuable visual resource.
No-Action Alternative

The No-Action Alternative will not dramatically change the overall aesthetic quality of the corridor or study area. Due to the condition of the aging viaduct, the No-Action Alternative includes replacement of the existing viaduct between Brighton Boulevard and Colorado Boulevard without adding capacity. The highway footprint will be wider to meet current design standards, causing a few buildings to be acquired with either the North or South Options. The potential acquisition of taller buildings adjacent to the highway—such as the Nestlé Purina PetCare Company building that currently blocks views—will provide unobstructed views of the highway and the mountains from the surrounding neighborhood. This is not an adverse effect on the existing visual characteristics of the area because it does not change any of the visual elements or the overall visual character of the area.

Build Alternatives

The greatest visual resource impacts of the project alternatives occur where a physical widening of the highway occurs within the established residential neighborhoods.

The Build Alternatives include the Revised Viaduct Alternative and the Partial Cover Lowered Alternative. The effects on the visual resources and aesthetic quality between Brighton Boulevard and Colorado Boulevard vary based on the alternative.
Revised Viaduct Alternative

This alternative replaces the viaduct with a new structure that includes additional capacity and conforms to the new highway and bridge standards. The proposed replacement structure includes a wider footprint and structure, and will require business and residential property acquisition. The proposed structure is approximately 200 feet wide, while the existing structure is only approximately 90 feet wide.

Proposed noise walls range between 12 feet and 18 feet in height and will be located on the north edge of the highway, roughly between Brighton Boulevard and Vasquez Boulevard, and on the south edge of the highway between York Street and Madison Street. The noise walls will further contribute to the highway visual mass.

The replaced structure will be located along the existing highway alignment with either Expansion Option. Since the new structure has a larger footprint, the highway will have a more visible presence in the Elyria and Swansea Neighborhood in contrast to the existing structure.

Partial Cover Lowered Alternative

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

This alternative includes noise walls at ground level that are approximately 16 feet tall. These noise walls will be located on the north edge of the highway between Brighton Boulevard and the UPRR. Safety barriers
will be located along the edge of the lowered highway. As part of this alternative, a cover will be placed on the lowered section of the highway in front of the Swansea Elementary School. The cover will include an urban landscape on top. The length of this cover is proposed to be less than 1,000 feet and its placement on the highway eliminates the need for noise walls or safety barriers in this area.

Managed Lanes Option

The Managed Lanes Option has direct connections to I-270, I-225, and Peña Boulevard. The direct connection structures from the managed lanes to the adjacent highways pose permanent visual barriers. These barriers are not considered to have substantive impacts to the aesthetic qualities of the area, because the area where these direct connections are located in within an existing transportation corridor and are mostly industrial land use and are not considered sensitive neighborhood views.

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

Increased ambient light levels have the potential to impact visual resources. Adding a new light source in the area could change the visual appearance of the area. However, since the project corridor is an urban setting, the additional lighting from the newly constructed highway will not cause major negative impacts to the aesthetic qualities.

Lighting for the Revised Viaduct Alternative and the No-Action Alternative are similar to the existing conditions. For most of the viewers in the area, noise walls block light and glare from the highway. The presence of a lighted structure above ground emphasizes the structure cutting across the surface streets for nighttime views and the visibility of the viaduct. This is considered an intrusive element in the residential area of the Elyria and Swansea Neighborhood.

Elevated light source also is an additional disruptive source of glare for upper windows of buildings that will not be directly affected by lighting of surface streets; however, the taller buildings in the area are industrial, so an elevated light source will not impact them as much as it would impact a residential unit. The residential houses in the area are shorter than the viaduct, so there will be minimal glare impact on them with the No-Action Alternative and Revised Viaduct Alternative.

The lighting of the Partial Cover Lowered Alternative also will be in compliance with the lighting standards. The lighting of the covered section will be designed to avoid the “black hole effect” by using the latest lighting technologies and evaluating factors affecting the performance of the lighting system.

The glare effect for the Partial Cover Lowered Alternative will be different from the Revised Viaduct Alternative. The lighting of the highway will not be as intrusive as the Revised Viaduct Alternative because the highway is not located on an elevated structure and the light sources are below grade and blocked by safety barriers or noise walls. Depending on future plans for the highway cover, additional lighting sources may be introduced by the planned activities on the cover. The future lighting of the highway cover will be designed not to conflict with the lighting of the surrounding area and will blend in with the neighborhood’s existing lighting.

What is the black hole effect?

The black hole effect is the substantial light contrast between outside and inside of a tunnel, causing motorists to slow down. This phenomenon can be minimized by providing adequate lighting at the tunnel entrance or the threshold zone to allow time for the eyes to adapt.
5.8.5 How are negative effects from the project alternatives to visual resources mitigated?

There are minor impacts to visual resources and aesthetic qualities in the study area. The project alternatives will improve the aesthetic quality of the area either by replacing the viaduct with a newer structure that can be designed to complement neighborhood architecture or by removing the viaduct and locating the highway below grade with a landscaped cover between Clayton and Columbine Streets. Any additional improvements to enhance the visual effects of the proposed highway alternatives will be developed through a collaborative process to reflect the needs of individual neighborhoods and local aesthetic context.

Community input is sought from neighborhoods impacted by the Preferred Alternative to retain and develop aesthetic qualities of the corridor. Local communities and participating agencies provided input during the development of a vision for urban design and aesthetics in the corridor. The Aesthetic and Design Guidelines, included as Attachment O, discusses the existing aesthetic characteristics for the corridor and provides a strategy for how to reach the vision established by the community.

The purpose of the Aesthetic and Design Guidelines is to ensure that the project will not result in a disjointed visual setting. Using the guidelines, future engineering and construction efforts can design noise walls, signing, bridges, sidewalks, and landscapes that will lessen the visual impact and allow the design structures associated with the proposed project to blend with the surrounding built environment to complement the visual landscape. The Aesthetic and Design Guidelines describe how the overall corridor will look while embracing the unique qualities of the surrounding neighborhood and communities. Exhibit 5.8-8 lists the impacts and mitigations associated with visual resources and aesthetic qualities.
## Exhibit 5.8-8 Summary of Visual Resources and Aesthetic Qualities Impacts and Mitigations

<table>
<thead>
<tr>
<th>Alternative/Option</th>
<th>Impacts and/or Benefits</th>
<th>Mitigation Measures Applicable to All Alternatives</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No-Action Alternative</strong></td>
<td>• Replacing the existing viaduct with new infrastructure will improve the visual quality&lt;br&gt;• New noise walls on the viaduct can obstruct views of the downtown Denver skyline&lt;br&gt;• Relocating the Nestlé Purina PetCare Company and removing the facility will open up some views to the downtown Denver skyline (South Option only)&lt;br&gt;• New features of the project (e.g., detention ponds, retaining walls) will change the visual environment along the project corridor</td>
<td>Use the Aesthetic and Design Guidelines (see Attachment O) developed during the EIS process with Denver and the community during final design to help CDOT identify appropriate aesthetic design elements to ensure compatibility within the community and each viewshed; CDOT is committed to following the guidelines and continued community involvement during final design and construction.</td>
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<td><strong>Revised Viaduct Alternative</strong></td>
<td>• Replacing the existing viaduct with new infrastructure will improve the visual quality&lt;br&gt;• New noise walls on the viaduct can obstruct views of the downtown Denver skyline&lt;br&gt;• Relocating the Nestlé Purina PetCare Company and removing the facility will open up some views to the downtown Denver skyline (South Option only)&lt;br&gt;• New features of the project (e.g., detention ponds, retaining walls) will change the visual environment along the project corridor</td>
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<td><strong>Partial Cover Lowered Alternative</strong></td>
<td>• Introducing public space to the area and reducing the roadway's visual dominance by removing the existing viaduct will greatly improve the visual quality&lt;br&gt;• Ground-level noise walls or safety barriers are less intrusive to viewers' eyes compared to the No-Action and Revised Viaduct Alternatives, but they also introduce a new visual impact by blocking the view across the highway&lt;br&gt;• Views for drivers traveling eastbound and westbound will be entirely different from the existing conditions&lt;br&gt;• New features of the project (e.g., detention ponds, retaining walls) will change the visual environment along the project corridor</td>
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<td><strong>Managed Lanes Option</strong></td>
<td>• Additional visual barriers will be created with the direct connections at I-270, I-225, and Peña Boulevard&lt;br&gt;• Managed lanes infrastructure will create new visual impacts along the project corridor</td>
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