

## 3.5 VISUAL AND AESTHETIC QUALITIES

### 3.5.1 Introduction to Analysis

#### 3.5.1.1 Summary of Results

The Preferred Alternative would represent a minimal change to the visual character of the existing rail corridor. Visual impacts would be caused by the addition of expanded rail lines, fill/retaining walls, noise barriers, parking, fences, stations, and commuter rail service. Implementation of the alignment between Denver Union Station (DUS) and the South Westminster/71<sup>st</sup> Avenue Station would result in new structures, retaining walls, track, catenary equipment, and fencing. Because the additional track would be constructed in existing BNSF Railway Company right-of-way (ROW), visual impacts between stations would be minimal. The change in the landscape is not likely to affect viewer awareness in comparison to the existing rail services. Noise analysis recommends the construction of a barrier to mitigate elevated noise levels at three locations: from West 74<sup>th</sup> Avenue to West 75<sup>th</sup> Avenue; from South Boulder Road to Sunnyside Street; and from Ken Pratt Boulevard to Boston Avenue. Construction of noise barriers would result in visual change.

In general, the use of diesel multiple unit (DMU) technology over most of the corridor creates less of a visual change than electric multiple unit (EMU) technology used between DUS and South Westminster/71<sup>st</sup> Avenue Station, as it does not necessitate overhead catenary wires. There would be fencing along the length of the proposed alignment, but the Regional Transportation District (RTD) has worked with local municipalities to provide for the least invasive fencing options and to ensure that fencing is compatible with surrounding land uses. See discussion of the Northwest Rail (NWR) Fencing Subcommittee in Chapter 5.0, Public Comment and Agency Coordination for more details. Stations along the proposed alignment would be constructed in areas that are compatible with existing development.

The roadway and transit projects included in the No Action Alternative would likely result in direct, indirect, temporary construction, and cumulative impacts to visual resources. The extent of these impacts will be evaluated in the environmental documents being prepared for these projects.

#### 3.5.1.2 Purpose

The addition of a rail transit project is a major investment in the future of a community, with the potential to shape future land uses within the project study area. The visual impact of the NWR Corridor Project has been identified as a concern by the public, especially with respect to fencing and the architecture of the proposed stations. This section discusses these visual changes.

### 3.5.2 Affected Environment

Visual resources are the natural and cultural features of the landscape that can be seen and contribute to the public's enjoyment of an environment. Visual sensitivity is based on the number and types of users, viewers, or sensitive receptors typically found in the project study area. Generally, viewers in parks and residential areas are assumed to be the most sensitive to visual and aesthetic impacts, and viewers in industrial areas would be the least sensitive.

Visual quality is evaluated based on a consideration of landscape qualities related to natural and man-made features, specifically:

- Natural features including topography, water courses, rock outcrops, and natural vegetation.
- The positive and negative effects on visual quality due to man-made alterations to the environment and built structures.
- Visual composition, including an assessment of the complexity and vividness of patterns that exist in the landscape.

The project study area follows the BNSF Railway Company line from DUS to Longmont, passing through North Denver, Adams County, City of Westminster, City and County of Broomfield, City of Louisville, the City of Boulder, Boulder County, and the City of Longmont. The views and visual features of the existing rail corridor range from industrial and railroad-related uses, new development, established suburban and urban commercial and residential development, open space, and rural/large lot residential development. Overall, the most prominent feature in the existing rail corridor is the view of the mountains, which are highly visible in the northern areas of the project study area. The text below describes visual quality for each section of the project study area. Visual sensitivity generally increases towards the northern sections of the project study area where views of natural landscapes remain intact and have not been heavily disrupted by development. In the Boulder and Longmont sections, views of the mountains remain high quality and contiguous. Table 3.5-1 presents a summary of the visual quality of each section within the project study area.

TABLE 3.5-1. VISUAL QUALITY SUMMARY FOR THE PROJECT STUDY AREA

Section	Overall Visual Quality Score <sup>1</sup>	Visual Elements	Viewer Types
Denver	Low-Medium	Denver Union Station; industrial; railyards; infill residential development; Platte River Greenway	Industrial workers; residents; recreational users
Adams	Low	Clear Creek; industrial; single family residences	Workers; residents; recreational users
Westminster	Medium	Westminster Mall; single family residences; Big Dry Creek; Walnut Creek shopping area	Commuters; residents; recreational users
Broomfield	Medium	Large vacant parcels; office complexes; sports facilities	Workers; commuters; recreational users; residents
Louisville	High	Historic downtown Louisville; large undeveloped parcels; agriculture	Residents and workers
Boulder	Medium-High and High	Undeveloped lands; open space; Flatirons; Boulder Transit Village	Commuters; residents; workers; recreational users

**TABLE 3.5-1. VISUAL QUALITY SUMMARY FOR THE PROJECT STUDY AREA**

Section	Overall Visual Quality Score <sup>1</sup>	Visual Elements	Viewer Types
Longmont	High	Open space; large undeveloped parcels; agriculture; downtown Niwot; downtown Longmont	Commuters; residents; workers; recreational users

Source: NWR Corridor Project Team, 2009.

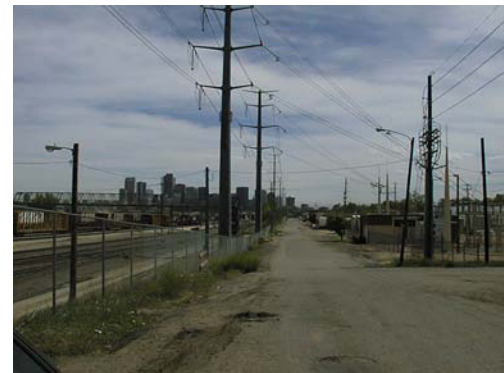
Notes:

<sup>1</sup>The Federal Highway Administration (FHWA) *Visual Impact Assessment Manual* (FHWA, 1990) includes definitions of vividness, intactness, and unity. With this methodology, each sub area is ranked by these visual elements and averaged for an overall score (1=low and 7=very high).

A description of the visual characteristics for each of the sections is given below.

### 3.5.2.1 Denver Section

This section of the proposed alignment runs from approximately DUS to Interstate-76 (I-76) and includes three landscape zones. From West 20<sup>th</sup> Avenue to I-25, the landscape is highly urban with an existing high density neighborhood, a proposed mixed-use commercial district, the City of Cuernavaca Park, and the Platte River Greenway.



*Existing industrial uses and railyards in Denver*

Located between I-25 and West 44<sup>th</sup> Avenue, the landscape consists of light industrial and some residential uses west of the existing rail alignment (west of Inca Street). In this area, the proposed alignment crosses over West 38<sup>th</sup> Avenue, a heavily used road that connects northwest Denver to downtown Denver. The tracks are visible where they cross over West 38<sup>th</sup> Avenue. The proposed alignment runs through light and heavy industrial land uses immediately east of the rail yards.

North of I-70, the visual landscape consists of railroad tracks and bordering industrial properties. Existing railroad tracks dominate the immediate landscape as the width of tracks ROW ranges from approximately 200 to 800 feet.

At the present time, this section contains a minimal number of viewers, as the majority of land uses are dedicated to both light and heavy industry. The redevelopment of DUS and the Central Platte Valley would generate a larger number of future viewers of the proposed alignment and would improve the visual quality in the area.

Chapter 10, Section 10-56 of the City and County of Denver Municipal Code provides for the protection of formally established natural and cultural viewsheds. None of the project elements would be located within the established viewsheds.

### 3.5.2.2 Adams Section

This section of the proposed alignment crosses through primarily industrial and railroad related land uses. There are few scenic resources in the southern areas of this section and limited numbers of viewers beyond the immediate vicinity of the proposed alignment. A number of residences back up to the proposed alignment in the northern reaches of the section.



*Existing industrial uses and railroad in Adams County*

### 3.5.2.3 Westminster Section

The proposed alignment in this section is surrounded predominantly by residences in the south. Farther north, the proposed alignment enters an area with less dense residential development that opens up to provide views of the mountains to the west. The proposed alignment crosses Big Dry Creek, a natural riparian corridor. Commercial and residential developments have been constructed through this area, which serve to disrupt the pristine aspects of the natural landscape.



*Behind Westminster Mall*

### 3.5.2.4 Broomfield Section

The Broomfield Section offers relatively unobstructed views of the mountains to the west due to the undeveloped nature of this area. Recently constructed residential developments have altered existing views, so the views of the mountains are no longer uninterrupted.



*Broomfield Industrial Sports Complex*

### 3.5.2.5 Louisville Section

This section offers various scenic views, alternating between historic and cultural views to natural landscapes. The proposed alignment passes through undeveloped lands and open space, with several sweeping, unobstructed views of the mountains. The proposed alignment also passes through historic Louisville, where the town has taken great care to maintain the visual integrity of the historic resources.



*Downtown Louisville*

### 3.5.2.6 Boulder Section

The proposed alignment passes through both urban and rural settings in this section. The easternmost and northernmost portions of the Boulder Section, which are also the most rural, provide sweeping views of the Flatirons and greater Rocky Mountains. The portion of the proposed alignment that passes through the urbanized City of Boulder and Boulder County also provides views of the Flatirons. However, these views blend the urban features with the surrounding natural landscapes.



*Southeast Boulder*

### 3.5.2.7 Longmont Section

The majority of the proposed alignment crosses sparsely developed land between the Cities of Boulder and Longmont along SH 119. Views of the mountains are intact. Within the City of Longmont, the proposed alignment passes through larger-scale development, limiting the views of the mountains.



*Boulder Transit Village*

## 3.5.3 Impact Evaluation

### 3.5.3.1 Methodology

The visual impact analysis was adapted from the *Visual Impact Assessment for Highway Projects* manual (FHWA 1990). Impact assessment is based on site visits, examination of aerial mapping, review of local planning documents, and review of draft engineering designs for the Preferred Alternative.

For the purposes of this analysis, implementation of the Preferred Alternative would have an impact on visual resources if the project:

- Blocks or impedes views of scenic value.
- Damages the natural environment and/or the built environment.
- Changes the existing visual character or quality of the site by adding inappropriate design elements.
- Creates a new source of substantial light or glare.

Multiple visual simulations have been developed to demonstrate potential for visual change throughout the project study area. These graphics simulate the potential future view; however, they do not show the



*Diagonal Highway (SH 119)*



*Location of Proposed Downtown Longmont Station*

specific final aesthetic treatments, styles, and colors that may be used. The final aesthetic treatments and colors for walls, stations, fencing, etc., may change as final design develops.

### 3.5.3.2 Results

#### No Action Alternative

##### *Direct, Indirect, Temporary Construction, and Cumulative Impacts*

The roadway and transit projects included in the No Action Alternative would likely result in direct, indirect, temporary construction, and cumulative impacts to visual resources. The extent of these impacts will be evaluated in the environmental documents being prepared for these projects.

#### Preferred Alternative

##### *Direct Impacts*

##### *NWR Corridor Alignment*

The majority of the project would be constructed in existing BNSF Railway Company ROW. In areas where retaining walls, bridges, or noise walls would be proposed, these structures would have the potential to block views of visual resources. Noise barriers, though required only along three segments, would generate a high degree of visual change. Individuals, neighborhoods, or businesses wishing to request a change to or elimination of a noise barrier must follow RTD's Noise Barrier Change Policy. Refer to Section 3.8.1 Noise for detailed information on noise analysis and noise barriers.

The widening of the existing rail corridor from one track to two and the provision of fencing along the entire rail corridor would constitute the largest permanent change along the proposed alignment, though it would generate a low degree of visual change.

RTD developed fencing recommendations through an extensive outreach process with local jurisdictions to provide fencing that is compatible with the surrounding land uses. RTD will continue ongoing coordination with the local jurisdictions regarding fencing, including the use of existing fencing at specific locations along the proposed alignment. More information regarding fencing can be found in Chapter 2.0, Alternatives Considered.

Impacts are detailed by section below.

##### *Denver Section*

The Denver Section is included in Phase 1.

##### *Adams Section*

A portion of the Adams Section up to Bradburn Boulevard is included in Phase 1. From Bradburn Boulevard to the north, the addition of a second track would not pose a visual impact because the majority of views of proposed alignment would be seen from the industrial and railroad uses that already back to the rail line, and are therefore areas with low viewer sensitivity.

Based on the noise analysis results, it is recommended that noise barriers be constructed to mitigate moderate train horn noise. Along this segment, the barriers would be 10 feet high and 500 feet in length. This segment of noise barrier would extend from West 74<sup>th</sup> Avenue to West 75<sup>th</sup> Avenue. The noise barriers would be located between the existing alignment and the backyards of the residences backing up to the rail line. The noise barriers would create a visual break between the edge of the backyards and the rail line, but in many cases, fences

are already in place to screen the view of the trains. The visual quality would remain relatively low.

#### Westminster Section

The degree of visual integrity would not be substantially altered by the widening of the existing rail corridor from one track to two tracks. Visual quality would remain moderate. Figure 3.5-1 illustrates the visual change resulting from implementation of the Preferred Alternative at Big Dry Creek.

#### Broomfield Section

The Preferred Alternative would pass through primarily industrial or vacant lands, areas with low visual sensitivity. Views of the historic agricultural silo located near the proposed alignment would not be visually impacted. The visual quality of the Broomfield Section would remain moderate.

#### Louisville Section

The views of the mountains for commuters on US 36 or the Northwest Parkway would not be impacted by the widening of the existing rail corridor. The noise analysis recommends construction of noise barriers to mitigate moderate train horn noise. The barriers would be 10 feet high and 1,200 feet in length. This segment of noise barrier would extend from South Boulder Road to Sunnyside Street. This noise barrier would constitute a change in the existing visual character, which currently provides sweeping views. The visual quality of the Louisville Section would be degraded from high to moderately-high where the noise barrier would be constructed. In other areas along the corridor, the visual quality would remain high. Figure 3.5-2 illustrates the visual change near the proposed Flatiron Station.

#### Boulder Section

In the northern portion of the Boulder Section, the proposed alignment would cross through rural, undeveloped lands that offer unobstructed views of the mountains to the west. These views would not be impacted for commuters using the Diagonal Highway, as the Preferred Alternative would be constructed to the east of the highway. Residents east of the highway would experience limited visual change associated with increased train frequency and fencing.

Train service is anticipated to occur every 15 minutes during peak periods in the southern portion of the Boulder Section and every 30 minutes during peak periods in the northern portion of the Boulder and Longmont sections. Because the train contains two cars, it is not anticipated that this would generate a large visual impact. The visual change along the Diagonal Highway is illustrated in Figure 3.5-3. The visual quality of the Boulder Section would remain moderate-high.

#### Longmont Section

No additional visual disruption of scenic resources would occur along this section because the surrounding land uses that occur adjacent to existing BNSF Railway Company ROW are generally compatible with transit service. Residents in Niwot would experience limited visual change associated with increased train frequency and additional fencing. The overall scenic quality within the Longmont Section would not be altered because the existing rail line is situated adjacent to strip retail and industrial, with few residential uses within the City of Longmont.

Based on the noise analysis results, it is recommended that noise barriers be constructed to mitigate moderate train horn noise. Along this segment, the barriers would be 10 feet high and 1,500 feet in length. This segment of noise barrier would extend from Ken Pratt Boulevard to Boston Avenue. The noise barriers would be located between the existing alignment and the backyards of the residences, commercial, and industrial properties backing up to the rail line. The noise barriers would create a visual barrier between the edge of the backyards and the rail line, but in many cases, fences are already in place to screen the view of the trains. Although individual properties may experience a visual impact, the change in visual quality is evaluated on a section-wide level, so overall visual quality in the Longmont Section would remain high.

#### Proposed Stations

In some locations where proposed stations would be constructed, the degree of visual alteration would be noticeable. However, proposed stations would be constructed with compatible architectural designs, would be compatible with planned future land uses, and located in areas of previous development. Overhead pedestrian walkways would be included at the following stations, because underpass structures were not feasible: Westminster/88th Avenue, Walnut Creek, Flatiron, and Gunbarrel. Additionally, station platforms, roof shelters, parking, and drop-off areas would constitute other visual changes.

The proposed Westminster/88<sup>th</sup> Avenue Station would be constructed in an area of existing commercial development. The existing surface parking lot used for the Westminster Mall would continue to be used for parking for transit users. Because the area is already densely developed, the station would not constitute a large visual change. The pedestrian bridge over 88<sup>th</sup> Avenue would be an additional visual element, but as it would be located in an urban area, it would not degrade the visual quality.

The proposed Walnut Creek Station is similar to the Westminster/88<sup>th</sup> Avenue Station, in that it would be constructed in an area surrounded by existing commercial development. The proposed station would not constitute a degradation of visual quality nor would it block views towards the west.

The proposed Broomfield Station would be constructed in an area surrounded by industrial and residential uses. The proposed station would not block views towards the west, so it would not degrade visual quality at this location.

The proposed Flatiron Station would be located at the site of an existing RTD park-n-Ride stop, so it is anticipated that there would be little visual change.

The historic nature of Downtown Louisville would be highly visually sensitive because of the proximity of the proposed Downtown Louisville Station to historical structures and residential neighborhoods. The proposed Downtown Louisville Station would be constructed following appropriate design templates to integrate into the historic character of the area. Because the existing rail corridor already crosses through the center of town, the additional train services would not disrupt the visual integrity of the town.

The proposed East Boulder Station would be constructed in an area surrounded by light industrial and institutional uses. The proposed station would be compatible with existing land uses and would not serve to visual degrade the visual quality.

The proposed Boulder Transit Village Station offers dramatic views of the Flatirons with the City of Boulder in the foreground and middleground. Few views of the Flatirons in the City of Boulder are unobstructed; nearly all blend the natural environment with the man-made environment. The addition of the proposed Boulder Transit Village Station and second track would occur in an area flanked by mixed use infill development and light industrial uses. While there are a large number of viewers (including residents and commuters) the proposed additional line and station would be compatible with surrounding land uses.

The proposed Gunbarrel Station would be in an area surrounded by existing development, so it would not diminish the visual quality, nor would it block views of the Flatirons or Front Range.

The proposed Twin Peaks Station would be constructed in an area of commercial development; it would not be anticipated to detract from the overall visual quality.

Overnight storage of trains may be required at the proposed Downtown Longmont Station to have trains ready for early morning service. Viewer sensitivity at this location is not high, as the proposed station is surrounded by industrial uses with most viewers leaving at the end of the work day, so train storage is not anticipated to degrade visual quality at this location.

#### Phase 1

Implementation of the alignment between DUS and the South Westminster/71<sup>st</sup> Avenue Station would result in new structures, retaining walls, track, catenary equipment, and fencing. These changes are visually compatible with the industrial character of the corridor. The provision of catenary equipment in this section for the purpose of EMU technology would represent a visual change, but is considered compatible with the industrial character of the area. The visual quality for recreational users of the Westminster Open Space located across from the proposed station would not be reduced, as the park is already located in an industrial area and along a railroad corridor. Much of the alignment from DUS to Pecos Street would be located on structure due to the Federal Railroad Administration regulations that commuter rail and freight rail lines cannot cross at-grade, and therefore must be grade-separated. In the Denver Section, the alignment crosses the South Platte River, 38<sup>th</sup> Avenue, the BNSF Railway Company Jersey Cutoff, and Utah Junction. These structures would range from 33 to 37 feet in width, be 35 feet high at track level at the highest point, and vary in length as described below. Railings (3.5 feet high) for protecting patrons during emergency exit events would be placed along the length of the structure. The effects of the 3,000-foot structure over the South Platte River are softened by other highway and rail structures in the area. The new structure would be visible from City of Cuernavaca Park, loft developments in the Central Platte Valley, and by motorists on Park Avenue and I-25.

The 80-foot bridge crossing of 38<sup>th</sup> Avenue would need to be elevated approximately 10 feet higher than the existing freight rail bridge to maintain minimum clearances with the street below. This represents a visual change compared to existing conditions. Additionally, approximately 1,400 feet of retained fill approach wall to the 38<sup>th</sup> Avenue Bridge would need to be constructed from the underpass of I-25 to the Gold Line's 41<sup>st</sup> Avenue East Station area. After a short section of at grade track north of the station area, a second 2,600-foot structure would be constructed to grade separate the BNSF Railway Company Jersey Cutoff track from the commuter rail track. This 35-foot high structure is located just west of the former Denver Post building near 45<sup>th</sup> Avenue. East of Pecos Street, the 4,300-foot flyover of the freight track at Utah Junction represents the greatest visual change in Phase 1. However, this

change is considered compatible with its surroundings. The nearest residences are approximately 2,200 feet away, located to the west of Pecos Street. Persons driving on I-25 would be about 3,000 feet from the structure. The land uses immediately surrounding the structure are rail oriented and industrial.

The southern portion of the Adams Section would retain low visual quality with limited viewers. The crossing of Clear Creek by the railroad may contribute to the minor degradation of visual integrity because the widening of the bridge across the waterway may remove some vegetation.

Figures 3.5-4 and 3.5-5 illustrate the visual changes associated with Phase 1.

FIGURE 3.5-1. BIG DRY CREEK VISUAL SIMULATION (BEFORE AND AFTER) (BROOMFIELD SECTION)



Source: NWR Corridor Project Team, 2009.

FIGURE 3.5-2. LOUISVILLE SECTION VISUAL SIMULATION (BEFORE AND AFTER)



Source: NWR Corridor Project Team, 2009.

FIGURE 3.5-3. DIAGONAL HIGHWAY VISUAL SIMULATION (BEFORE AND AFTER) (BOULDER SECTION)



Source: NWR Corridor Project Team, 2009.

FIGURE 3.5-4. SOUTH PLATTE VISUAL SIMULATION (BEFORE AND AFTER) (DENVER SECTION)



Source: NWR Corridor Project Team, 2009.

FIGURE 3.5-5. 38<sup>TH</sup> AVENUE UNDERPASS – LOOKING WEST (BEFORE AND AFTER) (DENVER SECTION)



Source: NWR Corridor Project Team, 2009.

### *Indirect Impacts*

The principal indirect impact of the Preferred Alternative is associated with the potential increase in urban density around the proposed stations. In general, increased density surrounding NWR transit stations is anticipated to be moderate. The extent of this development would depend on the market feasibility of the sites.

### *Temporary Construction Impacts*

Throughout construction, the visual appearance of the project study area would change due to the presence of construction equipment, staging areas, machinery, vehicles, construction materials, and excavated material piles. Temporary construction would create the largest impact when adjacent to the open space areas, as disturbed vegetation may take years to reestablish.

### *Cumulative Impacts*

Since the 1950s, substantial development has occurred in the project study area. Much of the undeveloped, rural lands north of the Denver metropolitan area have been developed into commercial and residential land uses. Overall, the FasTracks program would encourage higher density development within urban areas and would slightly slow the continued conversion of undeveloped lands. This would help to preserve the existing visual character of the project study area.

### *Avoidance and Minimization Measures*

Throughout the development of the Preferred Alternative, efforts have been made to minimize impacts to visual resources. The implementation of DMU technology along the NWR Corridor Alignment would have less of an impact to visual resources than would EMU technology because DMU does not necessitate overhead catenary lines (although catenary lines are necessary for Phase 1).

Fencing options along the proposed alignment have been selected to be consistent with existing land uses, and RTD conducted extensive coordination with local municipalities to receive input on fencing design. Visual impacts were further minimized with the recommendation for Quiet Zones to mitigate severe noise impacts along the alignment. Quiet Zone mitigation minimized the number and length of noise barriers necessary to mitigate moderate noise impacts.

## **3.5.4 Mitigation**

Mitigation techniques to reduce identified impacts to visual quality and aesthetics are described in Table 3.5-2.

TABLE 3.5-2. PROPOSED MITIGATION MEASURES - VISUAL QUALITY AND AESTHETICS

Impact	Impact Type	Mitigation Measures
Visual disturbance during operations (including potential noise barriers, retaining walls, bridge structures, stations and park-n-Ride lots, lighting, and fencing)	Operations	<ul style="list-style-type: none"> <li>• Noise barriers and retaining walls will be designed with consideration for rail passengers' and residents' views. When feasible, noise barriers and retaining walls will avoid impacting open areas, reflect natural appearance in textures and colors, and be graffiti resistant.</li> <li>• Stations will be landscaped consistent with RTD design criteria. Parking lot design will conform to local parking standards.</li> <li>• Fencing options will be compatible with surrounding land uses as is feasible. Proposed fencing recommendations are listed in Table 2-19, Northwest Rail Alignment Fencing Recommendations.</li> </ul>
Visual disturbance during construction	Construction	<ul style="list-style-type: none"> <li>• Staging areas will be fenced and/or screened.</li> <li>• Construction lighting will be shielded and directed at work areas to reduce glare and light trespass.</li> <li>• All landscaping will be replaced where removed for construction efforts, except in immediate trackway.</li> </ul>

Source: NWR Corridor Project Team, 2009.

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