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Northwest Corridor
A TRANSPORTATION ENVIRONMENTAL STUDY

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4.12 VISUAL CHARACTER

INTRODUCTION

The FHWA Visual Impact Assessment for Highway Projects Manual (FHWA-HI-88-054) was used to develop a methodology for describing existing conditions and assessing visual impacts. The methodology included field documentation of the existing visual character; an inventory of land use; referencing existing community plans; and identification of important viewsheds and areas of high scenic integrity for motorists, residents, and corridor users from field reconnaissance and public input. Visual resources are not limited to elements or features that are of outstanding visual quality, but include all features regardless of their quality. Viewer sensitivity or local values can add visual significance to landscape features and areas that could otherwise appear unexceptional.

Public concerns expressed through the public involvement process regarding visual character include: definition of terminology; identification of important views from various points within the study area; identification of how important or sensitive views/viewsheds were determined; description of alternative screening related to visual quality issues; how cumulative projects affect the overall visual character of the study area (see **Section 4.24**); description of landscape characteristics; and reference to previous documents that discuss preservation of scenic foothills. These concerns are addressed in **Section 4.1.2**.

4.12.1 AFFECTED ENVIRONMENT

4.12.1.1 TERMINOLOGY

The existing landscape is considered to have high visual quality when its landscape components (landform, water, vegetation, man-made development, etc.) have striking characteristics that convey visual excellence. High visual quality is not exclusively associated with natural landscapes, but is also present in urban landscapes.

FOREGROUND, MIDDLE GROUND, AND BACKGROUND VIEWS

The landscape units were inventoried for existing foreground, middle ground, and background views to and from the build alternatives' alignments and distinctive (scenic) views outside the alignments. Landscape or viewsheds can be broken down into the following three categories according to their distance to the viewer and level of dominance.

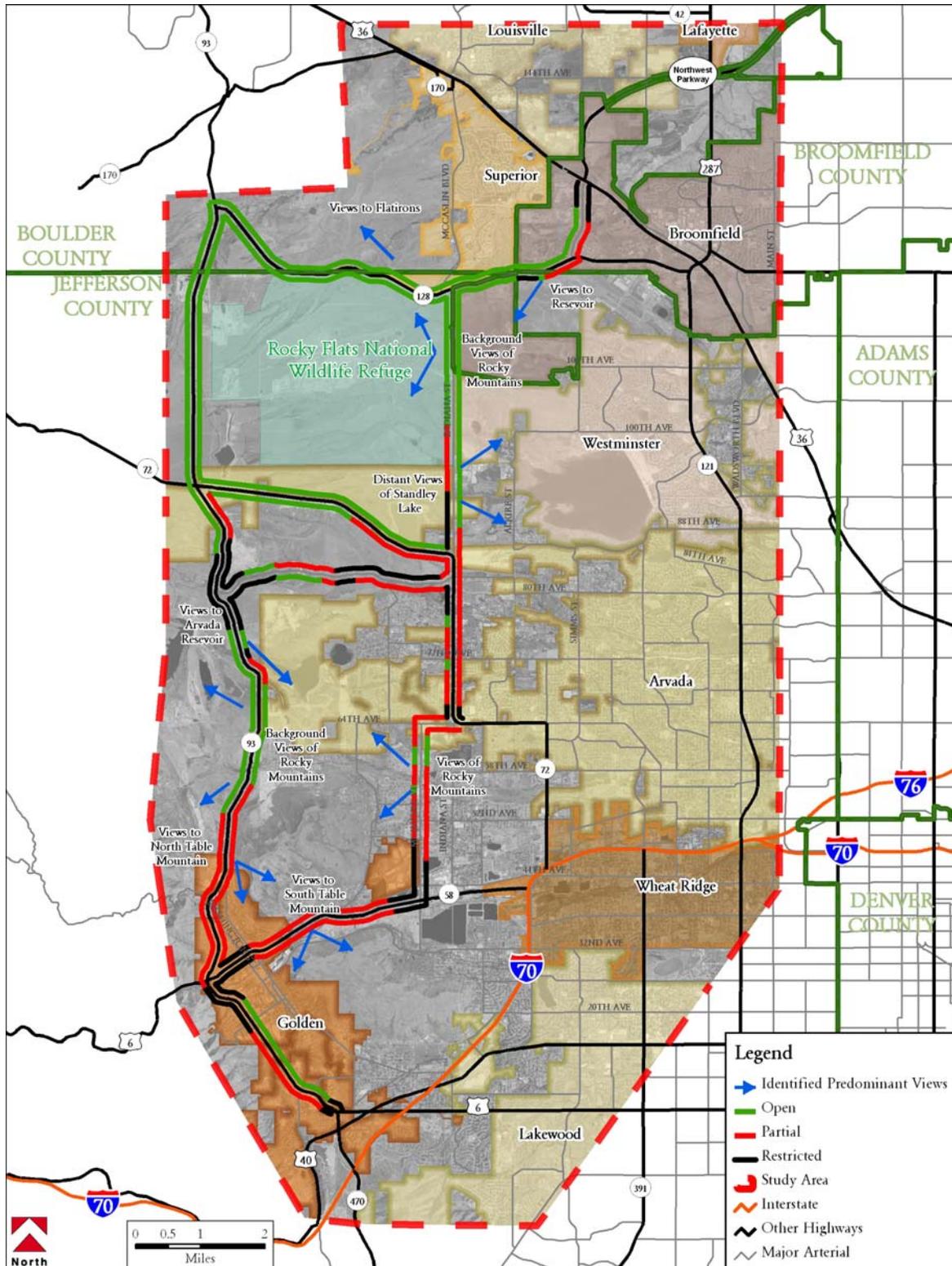
Foreground Views—These are views that are immediately visible from the roadway and define the local character of the area with greater detail and dominance. The foreground is defined as the area within one-half mile of the roadway.

Middle ground Views—These are defined as one-half mile to four miles from the roadway. The middle ground views from the build alternatives' alignments are to surrounding suburban and rural neighborhoods for segments along US 6 and SH 93 in the Golden area and for segments along Indiana Street and McIntyre Street between SH 72 and SH 58. For these segments, middle ground views also include developed commercial property, occasional open space, and undeveloped property.

Background Views—These are four miles or greater from the roadway and are generally subordinate to the foreground and the middle ground views. Background views are restricted in portions of the study area where the roadway would travel through a mountainous area restricting views (see **Figure 4.12-1**). Background views to the west, including those of the Front Range Mountains and Flatirons, are interesting and represent publicly documented desirable views to maintain or enhance to the extent possible.



Figure 4.12-1 Open and Restricted Views within the Study Area



Source: Compiled by FHU, 2006.



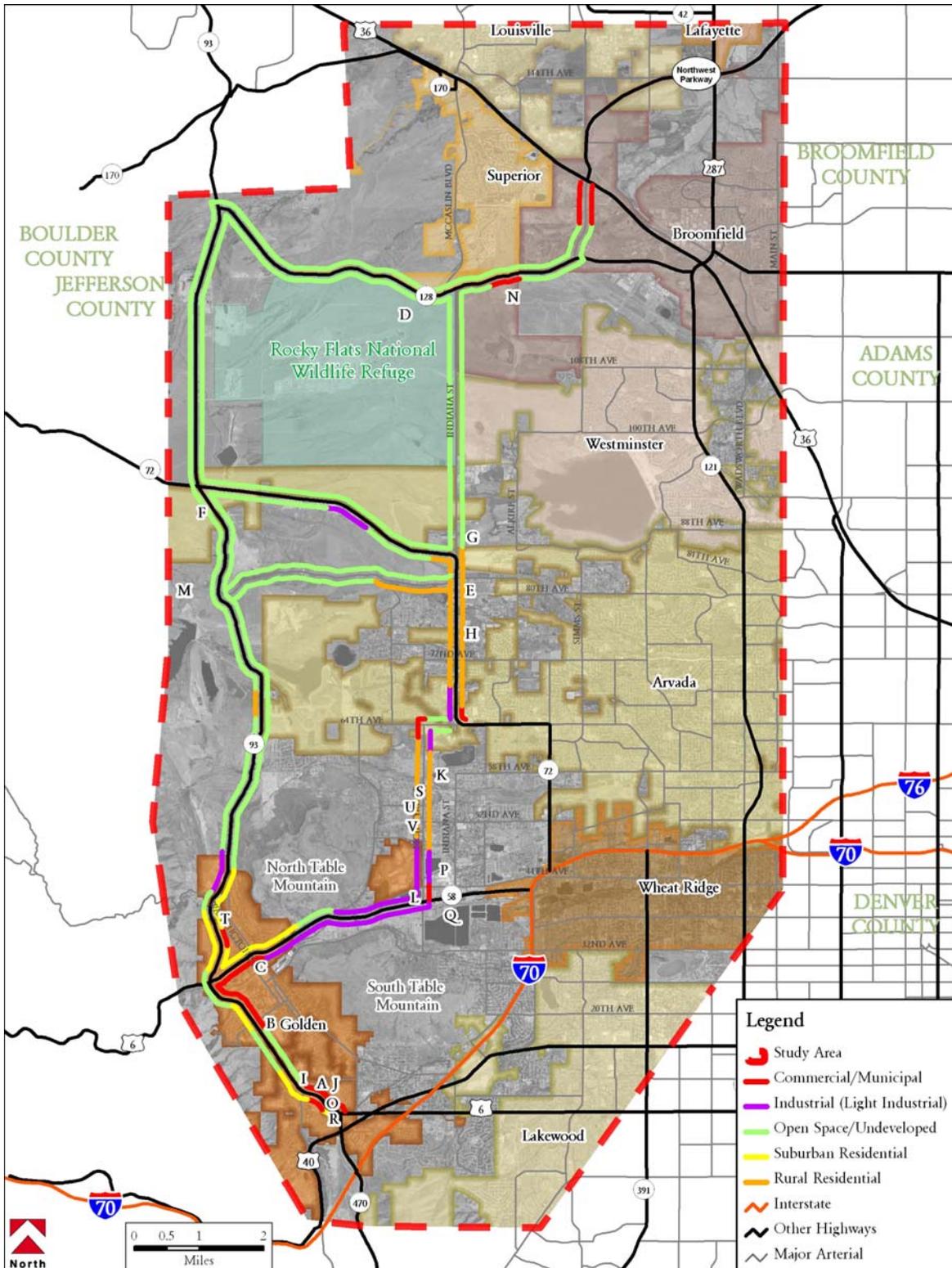
4.12.1.2 LANDSCAPE CHARACTER UNITS

The study area corridors can be broken down into distinct landscape character units that contain similar elements. The physical elements of a landscape are what form the visual patterns that strongly influence our response to the landscape. The following landscape units are found within the study area and are described below (see **Figure 4.12-2**).

- Existing Road Corridors
- Open Space/Undeveloped Land
- Parks, Recreation Areas, and Trails
- Water and Natural Resources
- Geologic Features
- Commercial and Municipal
- Light Industrial Use
- Residential: Suburban and Rural



Figure 4.12-2 Visual Character within the Study Area



Source: Compiled by FHU, 2006.



EXISTING ROAD CORRIDORS

The study area contains four types of existing road conditions, described in great detail in this section:

- Highway/freeway (I-70 and 6th Avenue).
- Four+-lane divided state highway (US 6, SH 58).
- Two-lane state highway (SH 93, SH 72, SH 128).
- Major arterial (Indiana Street, McIntyre Street, Leyden Road, Interlocken Loop).

Most of the study area urban roadway corridors have typical transportation elements, such as signing, lighting, signal controls, guardrail, and right-of-way fencing (see **Figure 4.12-3**). The suburban and rural areas may not have noticeable or paved shoulders or curb and gutter treatments as in the more urbanized areas. More urbanized areas often have cultivated landscapes, whereas the undeveloped rural areas are often vegetated with naturally occurring species. Intersections may have more urbanized conditions in the recently developed areas and have less visual intrusion into areas that are more rural.

Figure 4.12-3 *Typical Roadway/Intersection Development and Character Looking West*
(Location A-Figure 4.12-2)



Highway/Freeway (I-70, US 6)

I-70 physical elements and adjacent land uses have much in common with SH 58 and the more urban portions of US 6 (6th Avenue). New and more established residential developments, as well as industrial and commercial development, border portions of the highway/freeway on both sides. The adjacent development is situated such that it views portions of the highway.

Four(+)-Lane Divided State Highway (US 6, SH 58)

US 6 in the study area is a divided, multilane highway with unpaved shoulders (see **Figure 4.12-4**). US 6 and SH 58 are considered important local, commuter, and regional transportation corridors and serve many communities. Adjacent land uses include some residential and commercial development, light industrial development, and undeveloped open space. Vegetation and landscaping primarily includes naturally occurring species.

SH 58 in the study area is a median-divided, multilane highway with standard paved shoulders (see **Figure 4.12-5**). On the northern side of the highway, the side slopes ascend to a hillside where residential houses overlook the highway. These houses can be viewed from the roadway. On the southern side of the roadway, the land slopes down into a ditch. Cottonwood trees, aspen trees, and native grasses line ditches adjacent to the road.



Newer and more established residential developments and industrial/commercial development border portions of SH 58 on both sides. Portions of SH 58 or US 6 are visible from the adjacent development. Coors brewing facility, the Burlington Northern Santa Fe Railroad, and Clear Creek are all located in the near vicinity to SH 58. Overhead utilities are scattered along the corridor and there is an irrigation ditch on the north side.

*Figure 4.12-4 US 6 Corridor
Looking south near Golden
(Location B-Figure 4.12-2)*



*Figure 4.12-5 SH 58
Looking west towards North and
South Table Mountains and Front
Range
(Location C-Figure 4.12-2)*



Two-Lane State Highway (SH 93, SH 72, SH 128)

These roadways are similar to the multilane divided highways previously described, but differ in their more rural character, with little to no shoulders or roadway amenities. A number of pedestrian bridge structures cross SH 58 and SH 93, linking pedestrians and bicyclists to the trail that runs along Clear Creek or adjacent park areas along SH 93. SH 128 in the study area is similar to SH 93 and SH 72 (see **Figure 4.12-6**). Adjacent land uses include more developed residential areas, light industrial and commercial areas, and undeveloped open space. The primary differences between this roadway category and the major arterial category are the traveling speeds and number of local roadway accesses.

Major Arterial (Indiana Street, McIntyre Street, Leyden Road, Interlocken Loop)

Major arterials are represented by McIntyre Street, Indiana Street, and Leyden Road (see **Figure 4.12-7**). Adjacent land uses of the major arterials are more commonly residential developments, undeveloped land, and some light industrial. Rolling hills are common in the northern portion of the study area. Major arterials in the study area are typically composed of two lanes and minimal to no shoulders. Leyden Road's alignment follows the topography of the adjacent drainage and is a two-lane road with minimal to no shoulders and roadside ditches located on either side of the road. The major arterial category roads typically have lowered road speeds because of their gently curving alignment and more frequent access points. The landscape surrounding these roads is comprised of mostly native vegetation, agricultural, or undeveloped open space.



*Figure 4.12-6 Front Range and Flatirons from SH 128
Looking West
(Location D-Figure 4.12-2)*



*Figure 4.12-7 Indiana Street at 78th Avenue
Looking North
(Location E-Figure 4.12-2)*



OPEN SPACE AND UNDEVELOPED LAND

Much of the undeveloped land and open space is predominantly native grasses, with deciduous trees and riparian zones interspersed along drainages, which creates areas of scenic interest (see **Section 4.9** and **Section 4.11**). These viewsheds have a higher level of scenic integrity and intactness and should be retained where practical. Some undeveloped areas are likely to be developed in the future (see **Section 4.1**). Much of the open space and undeveloped land is comprised of open and flat to rolling terrain. Public comment received on the quality and desirability of maintaining open space has been documented for many locations within the study area.

The following designated open space areas are located in the study area (see **Section 4.17**):

- Rock Creek Subdivision Open Space near SH 128 and Indiana Street.
- Rocky Flats Open Space adjacent to Indiana Street and SH 128.
- Great Western Reservoir Open Space adjacent to Indiana Street and SH 128.
- White Ranch Open Space along SH 93.
- Mount Galbraith Park, SH 93 Open Space and trail corridor.
- Windy Saddle Park Open Space located west of SH 93 and near US 6.
- Pearce Open Space located east of Indiana Street at 80th Avenue.

Much of the land adjacent to SH 93 north of Washington Avenue to SH 128 is open space or undeveloped land. SH 93 consists of two or three lanes in this area. Views from SH 93 remain typically open and unrestricted towards the foothills, and there are partial views to the east depending on the variation in topography (see **Figure 4.12-8**). These areas are considered to have a higher visual quality because of the variety of scenic elements (i.e., mountains, vegetation, topographical variety, drainages, and minimal man-made elements).

Leyden Road and SH 72 have similar characteristics to SH 93 with adjacent open and undeveloped land. Views of native grasses, rolling hills, cottonwood trees, and views towards the foothills remain unobstructed and are of high quality.



Figure 4.12-8 SH 93

*Looking South of the Union Pacific Railroad
(Location F-Figure 4.12-2)*



There are several representative areas of undeveloped land in the study area (see **Figure 4.12-9**, **Figure 4.12-10**, and **Figure 4.12-11**). **Figure 4.12-9** is from Indiana Street looking west at approximately 88th Avenue. Views of the Front Range are limited because of the topography of the land in the middleground. **Figure 4.12-10** is looking southwest from Indiana Street towards SH 72 and south of Rocky Flats Open Space. Land in the foreground is used for grazing and new home sites. Distant background views are to the Front Range. **Figure 4.12-11** shows undeveloped land, open space, and a recreation trail adjacent to US 6 south of Golden. Views along this portion of US 6 include middleground and background views to the Front Range. Many drainages adjacent to US 6 include riparian and wetland species, as shown in the foreground.

Figure 4.12-9 Indiana Street at 88th Avenue

*Looking West across Undeveloped Land South of Rocky Flats
(Location G-Figure 4.12-2)*





*Figure 4.12-10 SH 72 from Indiana Street
Looking West
(Location H-Figure 4.12-2)*



*Figure 4.12-11 Open Space along US 6
Looking Northwest
(Location I-Figure 4.12-2)*



PARKS, RECREATIONAL AREAS, AND TRAILS

The study area has numerous parks and recreational areas, golf courses, water recreation, and trail opportunities for bicyclists, equestrian riders, climbers, and hikers (see **Section 4.17**). There are numerous typical off-roadway trail corridors with adjacent open space and scenic sight-seeing opportunities (see **Figure 4.12-12**). Views from these recreational resources to transportation facilities are a consideration for the visual assessment, as well as minimizing direct and visual impacts to the recreational amenity. Retaining the visual quality from trails, parks, and open space that overlook SH 93 is an expressed concern for residents in that part of the study area.

*Figure 4.12-12 Trail near Jefferson County Administration and Courts Facility
Looking West
(Location J-Figure 4.12-2)*





WATER AND NATURAL RESOURCES

Water and natural resources contribute to the scenic integrity and visual quality of the study area (see **Section 4.8**). Notable views of water resources within the study area are to Leyden Lake, Arvada/Blunn Reservoir, Tucker Lake, and Hyatt Lake. Within these locations, the scenic qualities include wide expansive spaces of undeveloped land and views of the Front Range and Flatirons, which give these visual elements higher scenic quality. Primary water resources that are located in close proximity to the roadway alignments include Van Bibber Creek (see **Figure 4.12-13**), Ralston Creek, Little Dry Creek, and Leyden Gulch. Ralston Creek runs perpendicular to Indiana Street for a distance. Clear Creek parallels SH 58 and has been identified as a landscape feature that helps to create community identity for the surrounding communities, as well having recreational value.

Vegetation found in drainage areas consists of deciduous trees interspersed with coniferous plantings and native grasses. Riparian vegetation occurs along the creek, and a recreational trail follows the creek. Additionally, wildlife and habitat presence creates higher scenic quality (see **Section 4.9** and **Section 4.11**).

*Figure 4.12-13 Van Bibber Creek with Recreational Trail
Looking West
(Location K-Figure 4.12-2)*



GEOLOGIC FEATURES

The unique geologic history of the Front Range is exposed in a number of geologic features that serve as community landmarks and provide community identity. SH 93 travels along the base of the Front Range foothills. The views along US 6, SH 93, and SH 58 include such regionally notable geologic formations as the North and South Table Mountains (see **Figure 4.12-14**) and Ralston Buttes (see **Figure 4.12-15**). These geologic features are visually notable because of their steep slopes and unique formations. Views that include features such as these are considered a higher scenic quality. Open views are prevalent up and down the SH 93 valley. An important identified view shed is of the Flatirons, which are visible from many vantage points within the study area (see **Figure 4.12-16**). Various municipalities and the public consider the Flatirons, Front Range Mountain Backdrop, North and South Table Mountains, Green Mountain, and Ralston Buttes important elements of higher visual quality to be maintained and uninterrupted.



Figure 4.12-14 SH 58 off-ramp at McIntyre Street

*Looking West towards North and South Table Mountains and the Front Range
The Coors Brewery is visible near South Table Mountain
(Location L-Figure 4.12-2)*



Figure 4.12-15 Ralston Buttes at Leyden Road and SH 93

*Looking Northeast
(Location M-Figure 4.12-2)*



Figure 4.12-16 SH 128 towards the Front Range and Flatirons

*Looking West
(Location N-Figure 4.12-2)*





COMMERCIAL AND MUNICIPAL

The land uses within the commercial/municipal character unit contain common elements such as frequent curb cuts, signs, utilities, lighting, parking lots, and many vehicles. The architectural styles, building heights, and colors vary. Commercial roadway corridors are characterized by the presence of increased vehicular activity, pedestrian activity, and urban amenities (e.g., places to shop or eat). Commercial or municipal land uses often are surrounded by cultivated vegetation and lawns and have landscaped roadways. A higher level of light is typical of a commercial area with light sources originating from businesses, homes, vehicles, and street lights. This landscape character unit would include commercial development at intersections and along highways, as well as municipal centers such as the Jefferson County Administration and Courts Facility (see **Section 4.1**).

Within the study area, there are a number of land uses with a commercial or municipal character (see **Figure 4.12-2**). These areas are located along both sides of Interlocken Loop south of US 36; along a segment on the south side of SH 128 between Indiana Street and Interlocken Loop; at the intersection of 64th Avenue and Indiana Street; at the intersection of 64th Avenue and McIntyre Street; at the intersection of SH 58 and McIntyre Street; along a segment on the east side of SH 93 between Washington Avenue and Iowa Street; along a segment on the south side of SH 58 between US 6 and Washington Avenue; along a segment on the east side of US 6 between SH 58 and 19th Street; and along a segment on both sides of US 6 between Heritage Road and C-470. The Jefferson County Administration and Courts Facility is located adjacent to US 6 on the east side of the roadway in this segment (see **Figure 4.12-17**).

Within the study area, US 6, SH 93, SH 58, McIntyre Street, Indiana Street, and SH 128 are considered important local, commuter, and regional transportation corridors that serve many communities. Commercial and municipal activities are typically adjacent to primary road corridors.

***Figure 4.12-17 Jefferson County Administration and Courts Facility
Looking East
(Location O-Figure 4.12-2)***



LIGHT INDUSTRIAL

Industrial uses are dominant at these locations: along a segment on the south side of SH 72 between SH 93 and Indiana Street; along a segment on the west side of Indiana Street between 64th Avenue and 68th Avenue; a segment on the east side of McIntyre Street between 60th Avenue and 64th Avenue; a segment on both sides of McIntyre Street between SH 58 and 50th Avenue; a segment on the east side of SH 58 between Ford Street and McIntyre Street; a segment on the west side of SH 58 between 44th Avenue and McIntyre Street; and a segment on the west side of SH 93 between Golden Gate Canyon Road and the northern edge of the Kilgroe Industrial Park.



Many man-made features are visible in these landscapes and include such land uses as factories, railroad, used car lots, water treatment facilities, gravel operations, gravel and landscape supply businesses, wells, and storage facilities. The Coors brewing facility is located south of SH 58 near South Table Mountain (see **Figure 4.12-18**). Some evergreen tree clusters serve as visual buffers to the industrial activity north of SH 58 (see **Figure 4.12-19**). Views in the background are to North Table Mountain.

Figure 4.12-18 Coors Brewery South of SH 58 near South Table Mountain Looking Southwest (Location P-Figure 4.12-2)



Figure 4.12-19 Industrial Land Uses Located North and South of SH 58 Looking West (Location Q-Figure 4.12-2)



RESIDENTIAL

Residences overlook or are adjacent to a primary transportation corridor at a number of locations within the study area. For this analysis, study area residential areas are categorized as suburban and rural. Urban residential areas, such as historic Golden or downtown Denver, were not identified immediately adjacent to any of the road corridors within the study area. Suburban residential and rural residential areas are spread throughout the study area. Many hillsides have been impacted by residential developments, where the terrain varies from gentle rolling hills to grades of up to 20 percent. In areas where homes overlook US 6, SH 93, and SH 58, scenic issues are of great concern to residents. There is a desire to retain the viewsheds in their current state. Roadways in the suburban and rural residential areas may not have noticeable or paved shoulders or curb and gutter treatments as in the more urbanized areas. More urbanized areas often have cultivated landscapes, where more undeveloped rural areas are often vegetated with naturally occurring species.

Suburban Residential

Suburban residential areas are spread throughout the study area. SH 58 adjacent land uses have much in common with I-70 and the more urban portions of US 6. A number of pedestrian bridge structures cross SH 58 connecting neighborhoods north of SH 58 with downtown Golden. Both newer and more established residential developments border the western portions of SH 58 on both sides. The land on the northern side of the highway ascends to a hillside where residential houses overlook the highway. The slope is at about a 30 percent grade.

There are two distinct segments of US 6 that are characterized as suburban residential. The first segment is located on the west side of US 6 across from the Jefferson County Administration and Courts Facility (see **Figure 4.12-20**). Residences are located adjacent to the road on the west and some are nestled within the foothills. The second identified segment is on both sides of US 6 in the vicinity of 19th Street. Residences



located in this segment are built on grades higher than the road to the west and at or below the road grade on the east. In this location, residences are situated less than 100 feet from the roadway on the same grade level as the road. Cottonwood trees and native long grasses planted in drainage ditches form visual barriers between the roadway and the residences.

New suburban residential development is occurring along the northern portion of McIntyre Street near 64th Avenue (see **Figure 4.12-21**). Residential developments are located on both sides of SH 93 between SH 58 and Pine Ridge Road (see **Figure 4.12-22**). This general vicinity includes residential development on both sides of SH 93 in close proximity to the highway. Residences to the east of SH 93 within this section are located between SH 58 and Iowa Street and between Washington Avenue and Pine Ridge Road and are constructed approximately three feet below the grade of SH 93. The backs of these houses face the road, and views to SH 93 are unobstructed. Residences to the west of SH 93 within this section are located between just north of SH 58 to Washington Avenue. Residences are located adjacent to the road and some are nestled within the foothills.

A very short section of SH 128 is characterized as suburban residential. It is located at the intersection of Indiana Street and SH 128 and continues east for about 200 feet. Homes are located to the south of SH 128 and are constructed below the road elevation in a new residential development.

***Figure 4.12-20 Residential Development
West of and Overlooking US 6
(Location R-Figure 4.12-2)***



***Figure 4.12-21 New Residential Development
Typical throughout Study Area
Northwest along McIntyre Street
(Location S-Figure 4.12-2)***



***Figure 4.12-22 Residential Development West of SH 93/North of SH 58 at Iowa Street
North of Golden Looking West
(Location T-Figure 4.12-2)***





Rural Residential

A number of locations within the study area have maintained a rural residential and agrarian land use. Agriculture, equestrian, and other livestock uses are common within these areas. Corridors where rural residential land use is found are: SH 93, Indiana Street, McIntyre Street, and Leyden Road. The character of these areas is typified by lower volume roads, minimal shoulders, meandering roads with rolling hills, larger property lots, more natural and mature vegetation, farmhouses, and outbuildings. This landscape unit also includes many man-made elements including, but not limited to, utility lines, driveways, and such conveniences as mailboxes. A variety of wildlife has also been noted as being present in these areas.

A few residences designated as rural residential are located along SH 93 to the west of the intersection of SH 93 and 64th Parkway. These residences are isolated in nature and have rural characteristics such as large property lots, natural vegetation, and outbuildings. They are located directly across SH 93 from the Jefferson County North Athletic Complex.

Indiana Street has a rural residential quality and is curvilinear rather than straight. Overhead utility lines parallel the road, and vegetation, consisting primarily of native grasses and cottonwood, aspen, and pine trees, is located along drainage ditches. A change in the visual quality of the vegetation occurs at 80th Street where the lush over-story vegetation becomes noticeably reduced as one travels north. Towards the northern portion of Indiana Street, rolling hills reflect the changing topography of the roadway. The landscape surrounding Indiana Street here consists of mostly agricultural and undeveloped open space or rural landscapes. Existing newer residential developments are located on either side of the road. The road continues to be a two-lane road and retains its rural residential character.

The character of McIntyre Street is predominantly rural residential (see **Figure 4.12-23** and **Figure 4.12-24**). Vegetation on either side of the road is lush, as plantings of native shrubs and young and mature trees with thick foliage grow in ditches on either side of the road. Driving speeds are kept to a moderately slow 40 miles per hour. Many adjacent side streets are unpaved. One-story residential homes, equestrian hobby farms, and vegetables and flower gardens comprise the adjacent land use. Split-railed and wooden fences surround most properties adjacent to the road. Wooden mailboxes that belong to neighborhood residences are located on either side of the roadway. There are long native grasses that lead to drainages and pedestrian and horseback riding trails along McIntyre Street heading north to 64th Avenue.

***Figure 4.12-23 Rural Residential/Equestrian
Character along McIntyre Street
Looking North
(Location U-Figure 4.12-2)***



***Figure 4.12-24 Rural Residential/Equestrian
Character along McIntyre
Street
Looking South
(Location V-Figure 4.12-2)***





A segment of Leyden Road is characterized as rural residential. Speeds on this road are reduced to 30 miles per hour. The rural residential character on Leyden Road begins just west of Quaker Street and continues east where it intersects at Indiana Street. Residential homes located on the southern portion of Leyden Road are typical of the housing character on McIntyre Street.

A very short section of SH 72 near the intersection of Indiana is characterized as rural residential. The road has two lanes with minimal to no shoulders. Roadside ditches parallel the road. Vegetation consists of native grasses, cottonwood trees, or aspen growing along drainage areas. Residential housing and hobby farms are located adjacent to the road.

4.12.1.3 VIEWERS AND VIEWSHEDS

Field observations determined the locations of the sensitive residential receptors and provided the information to document dominant existing views (see **Figure 4.12-25**). As discussed previously, desirable, important, and protected views have been documented for the study area. These views were considered from the standpoint of the primary viewers (e.g., motorists) with a view from the road and those with a view of the roadway from adjacent properties (residents, recreationists, businesses). Residents who live immediately adjacent to the roadway corridor and who have partial or full views of the corridor may have their views affected or interrupted by the build alternatives.

Within the undeveloped landscape between Heritage Road and just south of 19th Street on US 6, there are open views of Fossil Trace Golf Course and North and South Table Mountains to the east. To the west, there are open views of the foothills and rolling hills. Just south of 19th Street to SH 58 along US 6, there are views of residences and a riparian corridor along Clear Creek to the west, and open views to downtown Golden to the east. Views to the hillsides along US 6, SH 93, and SH 58 include residential developments as well as open, undeveloped land. Views are partially restricted to the west by rolling hills.

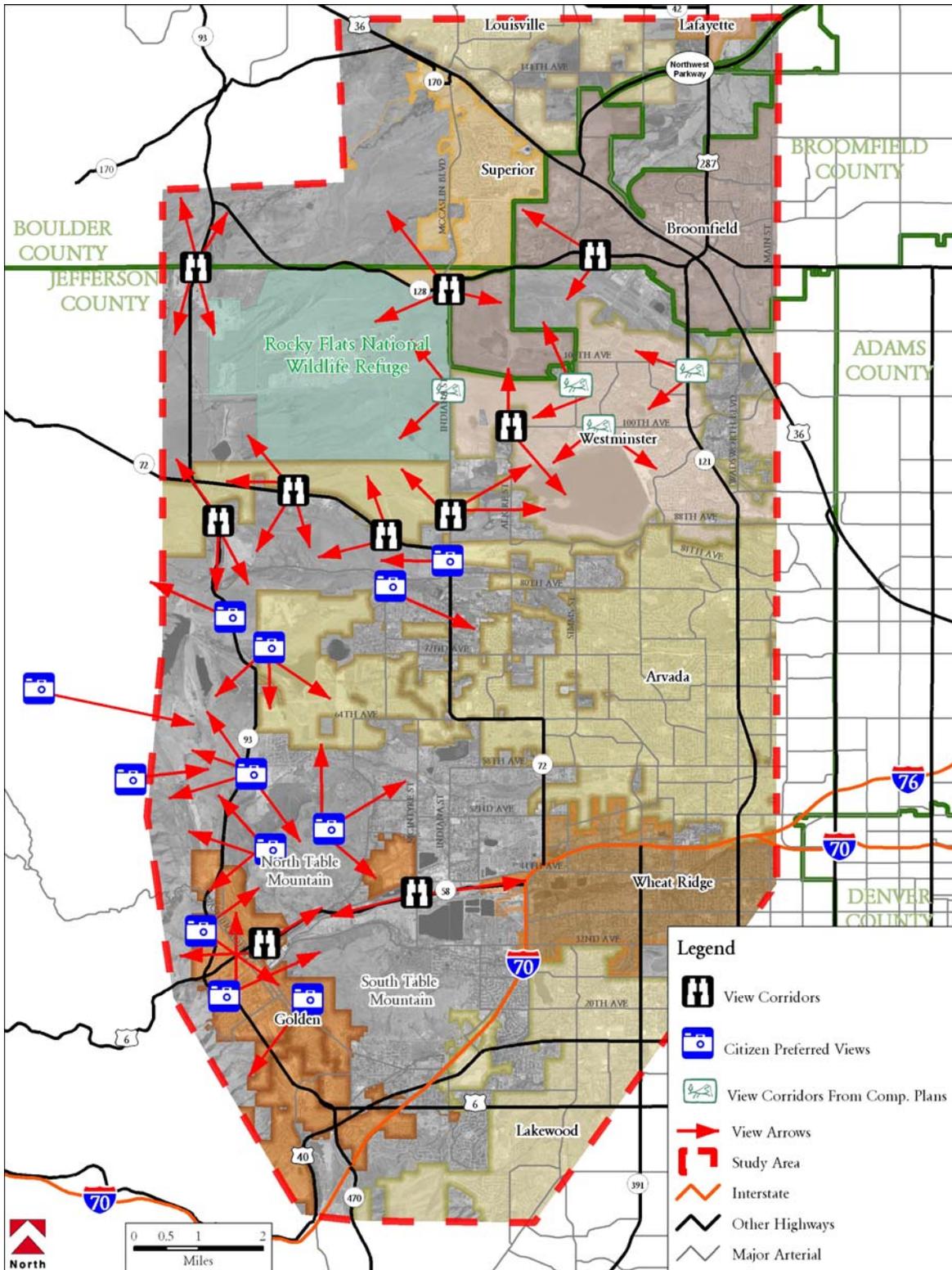
Views from SH 93 to the foothills are open towards the west of the highway and partially open to the east where rolling hills, trees, and residences impede views to open space. Views from SH 93 to the east heading north from the intersection of SH 58 and SH 93 are open, becoming partially restricted by rolling hills and other geologic formations. From Ralston Buttes, views looking east from SH 93 become partially restricted and then open again until SH 93 intersects SH 128.

There are some opportunities for unrestricted open views to the foothills from McIntyre Street; however, views from the road tend to be restricted to the foreground by vegetation and residential developments. Views are primarily open to either side of Leyden Road. Views of native grasses, patches of industry, rolling hills, cottonwood trees, and views towards the foothills remain unobstructed.

Views along Indiana Street tend to be partially restricted to the foreground as a result of rolling hills within the landscape. Views are intermittently open to the foothills just before Indiana Street and 74th Avenue and at 76th Avenue. Views to the south from SH 128 are open towards Indiana Street and to the existing undeveloped open spaces.



Figure 4-12-25 Important and Identified View Corridors



Source: Compiled by FHU, 2006.



4.12.1.4 IMPORTANT VIEWSHEDS AS DETERMINED BY LAND USE PLANNING OR ZONING

Most of the municipalities within the study area do not have specific policies or ordinances to identify or protect important viewsheds. However, the following guidance has been identified to consider community goals and activities related to visual resources.

The City of Golden Annexation Plan Update recommends that “designated scenic edges” along SH 93 in north Golden should be identified to prevent inappropriate development (City of Golden, 2003). According to the City of Golden Comprehensive Plan the foothills areas are targeted for preservation, including trail corridors, scenic easements, or other methods to preserve views and access (City of Golden, 2003).

The City of Arvada Land Development Code refers to Ralston Buttes as an important natural feature for which view obstructions should be mitigated (City of Arvada, 2000). The Arvada Comprehensive Plan, 1995, identifies Standley Lake and Long Lake Ranch as important visual resources. A stated goal of the plan is to protect and preserve scenic mountain views.

The Boulder County Land Use Code establishes a View Protection Overlay District that provides reduced development height in areas potentially affecting views (Boulder County, 2002).

The North JeffCo Mountain Backdrop View Corridor was a cooperative effort of Boulder, Douglas, El Paso, Jefferson, and Larimer Counties (Boulder County et al., 2002). In 1995, these counties initiated the study to identify important visual and ecological patterns, while considering economic and social components of the Mountain Backdrop. The Mountain Backdrop includes the foothills area from south of I-70 to Boulder County in the northern part of the study area. Mountain Backdrop areas immediately adjacent to SH 93 include Leyden Road, SH 72, and SH 128.

In 2003, a bill was passed in the U.S. House of Representatives to provide for a study of options for protecting the open space characteristics of certain lands in and adjacent to Arapaho and Roosevelt National Forests. In the bill, it was noted that the *Mountain Backdrop* provides a scenic mountain backdrop, includes a diverse array of wildlife habitats, and provides many opportunities for outdoor recreation. The purpose of the Act was to identify options to assist in maintaining the open space characteristics of these lands, the development of which is likely to adversely affect the scenic, wildlife, or recreational value of the study area. The study identifies peaks within the Front Range that are in the highest visibility percentiles calculated from roadways in the study area. Rocky Flats fell into the higher visibility category. Jefferson County has approved projects as part of the Mountain Backdrop that designate areas for viewshed corridors as well as wildlife issues and land connectivity. The Boulder County Comprehensive Plan considers the Mountain Backdrop to be one important natural feature, intended for visual resource protection purposes (City of Boulder and Boulder County, 1978 (amended)).

The North Plains Community Plan is an advisory document for Jefferson County. The plan identifies the Mountain Backdrop as a visually sensitive area and states that views to the mountain front are an important amenity to preserve. The plan also states that views along SH 93 should be protected. The Fairmount Subarea section of the North Plains Community Plan addresses needs for communities in the study area near McIntyre Street and Indiana Street. The plan includes housing; open space, trails, and recreation; development; and transportation policies to preserve the village and equestrian atmosphere (Jefferson County, 1989).

The City of Lakewood Zoning Ordinance includes an overlay district, the Rooney Valley Overlay District, which specifies protection of views of the foothills, the Rooney Hogback, and Green Mountain (City of Lakewood, 1997).

The City of Louisville residents consider the Flatirons the most important resource for the city.

The Town of Superior addresses visual resources through its land development code that requires developers of highly visible parcels to submit view analysis diagrams.



The City of Westminster Comprehensive Land Use Plan in 1997 identified protected viewsheds to protect them from private property development. A designated view corridor within the study area originates along Simms Street north of Standley Lake and protects views to the west.

The Wheat Ridge Comprehensive Plan identifies Clear Creek Greenbelt a major unifying element in their community. This goal is included in the Community Character section: “Maintain the balance between the natural and built environment so as to provide psychological and visual relief from the effects of urbanization.” A policy to achieve this goal is to “Preserve and enhance the Clear Creek Greenbelt.” Wheat Ridge considers the mountains a visual resource (as do most of the communities).

The City and County of Broomfield Draft Open Space Management Plan discusses these three important visual resources: the large ridge running from the southeast to northeast, the Sun Microsystems site, and the bluff located between US 36 and Wadsworth Boulevard, which is a major gateway into the community (City and County of Broomfield, 2005).

House Bill 1041 allows local governments to require special use permits for certain activities of state interest. Activities of state interest can include highways, transit systems, and interchanges. Local governments have the authority to deny a permit if they determine it is needed. Special use permits can require adherence to certain provisions, such as to not deteriorate natural resource areas, historic areas, endangered species, or natural scenic areas. These provisions are set out in the local government’s land use regulations.

4.12.2 VISUAL QUALITY ENVIRONMENTAL CONSEQUENCES

4.12.2.1 NO ACTION ALTERNATIVE

The No Action Alternative would result in the least amount of change to the existing visual character. Some changes will occur to the local character as a result of projects assumed for construction under the No Action Alternative (see **Chapter 2**). In most cases, intersection improvements do not clearly identify whether a grade separation would be included. However, if constructed, they could block or interrupt views from adjacent land owners.

4.12.2.2 IMPACTS COMMON TO ALL BUILD ALTERNATIVES

Visual impacts for the build alternatives were determined by comparing existing conditions, as determined by field visits and photographs, with the roadway plan sheets, photo simulations, and typical sections of the build alternatives (see **Chapter 2**).

DIRECT IMPACTS

Direct visual impacts associated with the build alternatives would be both short and long term. Short-term visual impacts include:

- Construction equipment, signing, and stockpiled and excavated material associated with construction in the staging areas.
- Dust and debris associated with construction activity.
- Traffic congestion associated with construction activity and detours.
- Un-vegetated slopes due to cuts to accommodate proposed improvements.



Long-term visual impacts associated with the build alternatives include:

- Expansion of paved surface width.
- Expansion of clear zone width and associated vegetation clearing.
- Grade-separated intersections or interchanges would likely include elevated ramps or mainline for one roadway to cross the other. When the grade-separated intersections or interchanges occur to avoid Section 4(f) lands next to residential areas, the visual impacts could include additional high mast lighting and signing. There may also be an increase in vehicular traffic, warranting the need for a grade-separated interchange.
- Cut and fill slopes.
- Retaining walls and/or noise walls in certain locations.
- Alignment changes, including roadway on new alignment, and bridge and culvert construction.
- Changes in access.
- Lighting along roadways, bridges, viaducts, and at interchanges and new intersections. This can produce visual impacts for a wider range of viewers, particularly in the dusk to early morning hours. The build alternatives would consider high mast lighting at regular intervals for the majority of facilities. For currently undeveloped areas of the study area, this will represent the introduction of a prominent urban element into the landscape.
- Signing, guardrail, and other necessary roadway elements.
- Stormwater detention ponds. These are part of the build alternatives and would be designed according to CDOT standard specifications with standard CDOT riprap treatment at the outflow to the drainage (see **Section 4.8**).
- Vegetation clearing for wider roadway footprint and clear zone. In some locations this may include riparian and wetland vegetation.

INDIRECT EFFECTS

Indirect effects would stem from the likelihood of supporting development that would occur at the new interchange locations. This could include new development or redevelopment of existing land use to commercial establishments, such as gas stations, convenience stores, hotels/motels, and other retail businesses. Additionally, the rate of suburban development (residential or commercial) may increase related to the build alternatives and increased access to a higher capacity transportation facility. The visual effect associated with this development is the change in open space or undeveloped land to one that is developed (see **Section 4.1**). The visual impact associated with the land use change and new development can be viewed as positive or negative depending on one's viewpoint. Adjacent residents who desire the maintenance of open space would likely not find this effect to be positive. Community development advocates may find this effect to be an asset and desirable for their community.

4.12.2.3 FREEWAY ALTERNATIVE

DIRECT IMPACTS

The Freeway Alternative will have a typical freeway section for roadway improvements adjacent to Interlocken Loop, south of SH 128, adjacent to Indiana Street, along SH 93, and along US 6 (see **Section 2.4.2**). Two segments of roadway would be on new alignment: one between SH 128 and Indiana Street and another between Indiana Street and SH 93. Frontage roads are proposed along the west side of the freeway from south of Leyden Road to 58th Avenue and from Golden Gate Canyon Road to Washington Avenue. New frontage roads would require additional right-of-way and would convert more land to a transportation use. Existing and proposed roadway dimensions were compared to assess the change in roadway character and how that would influence views from and to Freeway Alternative improvements (see **Table 4.12-1**).



Table 4.12-1 Comparison of Roadway Dimensions for Freeway Alternative Roadways

Roadway	Existing Roadway Width	Proposed Pavement Width	Proposed Right-of-Way Width*
Interlocken Loop	105 to 115 feet	N/A	N/A
Freeway Alternative Alignment Adjacent to Interlocken Loop	N/A	Two 44-foot-wide elevated structures	220-240 feet
SH 128	45 to 65 feet	N/A	N/A
Freeway Alternative Alignment South of SH 128	N/A	144 feet	190-300 feet
Indiana Street (SH 128 to SH 72)	36 to 58 feet	N/A	N/A
Freeway Alternative Alignment Adjacent to Indiana Street	N/A	144 feet	190-300 feet
Freeway Alternative Alignment Indiana Street to SH 93	N/A	144 feet	190-300 feet
SH 93 (SH 72 to Washington Avenue)	50 to 72 feet	144 feet, plus 48-foot-wide frontage road	190-300 feet
SH 93 (Washington Avenue to SH 58)	50 to 72 feet	122 feet	150-300 feet
US 6 (SH 58 to 19 th Street)	72 feet	122 feet	150-300 feet
US 6 (19 th Street to C-470)	79 feet	122 feet	150-300 feet

Notes: *Includes clearing required for drainage ditches, side slopes, and clear zone.

Source: *Compiled by Carter & Burgess, 2006.*

PAVEMENT WIDTH

Most roadways included in the Freeway Alternative would have two to three times the width of current pavement, which would increase the motorists’ and adjacent land use viewers’ foreground view of the road. The magnitude of this change is such that the current “feel” of the road would be substantially changed.

Bridges and Fill Sections

Because of the variation in the adjacent topography, a number of locations would require rather high fill slopes to accommodate bridge crossings over existing roads or drainages. Much of the northern portion of the study area is undeveloped open land, which in turn has fewer current residents to be affected by the Freeway Alternative profile. Fill slopes would change the existing landform immediately adjacent to the roadway. Some steeper slopes may be difficult to revegetate. The primary locations where visual impacts are likely are listed (see **Table 4.12-2**).



Table 4.12-2 Visually Impacted Locations

Location	Impact
Interlocken Loop	Two 44-foot-wide, elevated structures approximately 30 feet high would parallel the existing roadway from the Northwest Parkway terminus to SH 128. Adjacent businesses and residents would likely have a prominent view of the nearly mile-long bridge structures. This may affect views of the Flatirons from businesses and residents east of the structures (see Figure 4.12-26). Design plans may need to be coordinated with the Town of Superior through its land development code that requires developers of highly visible parcels to submit view analysis diagrams.
SH 128 to Indiana Street	The roadway is proposed to be elevated on 30 to 40 feet of fill to accommodate a future interchange at Eldorado Boulevard. Views from residents along Alkire Street and Simms Street may find views to the northwest and towards Great Western Reservoir interrupted by the elevated roadway section.
Indiana Street and 96 th Avenue	Sections of the new roadway parallel to Indiana Street would require 30 to 45 feet of fill to balance the adjacent topography. Residents living east of Indiana Street and south of 96 th Avenue may have views to the west blocked or interrupted by the fill slope and structure for the Indiana Street Connection interchange and the SH 72 interchange.
Leyden Road	A bridge over Leyden Road 85 feet high by 1,200 feet long would be required to meet the adjacent topographic relief. An adjacent 50-foot-high fill section also would be required to match the adjacent topography. The roadway and bridge over Leyden Road would be extremely high and could provide opportunities to frame the views of the foothills from the Leyden Gulch Canyon. However, a roadway profile this high in elevation would likely be visible from adjacent residential areas further east and could interrupt or block long distance views to the foothills. A similar bridge crossing of Barbara Gulch between SH 72 and Leyden Road would have a similar impact (see Figure 4.12-27). Residential homes off of Quaker Street would have a direct view of the new roadway north of Leyden Road.
64 th Parkway 58 th Avenue and SH 58	Because the widened roadway would cross over existing roads, it would be common to have 20 to 30-foot-high fill slopes and bridge structures. Adjacent residential and commercial areas would have views to the east and west interrupted by these elevated roadway conditions, as this area of SH 93 has mostly open views to the mountains.
Golden Gate Canyon Road	The road would be approximately 25 feet higher as it crosses over Golden Gate Canyon Road for a distance of approximately 0.25 mile. While residential areas to the east would have their views to the west interrupted by the bridge and fill section, this section of SH 93 is currently identified as a partially restricted view shed because of the adjacent topography.



*Figure 4.12-26 Photo Simulation A of Interlocken Loop
Looking West*

Before Simulation



After Simulation





*Figure 4.12-27 Photo Simulation B of New Alignment between SH 72 and Leyden Road
New Alignment shown in Circle
Looking Northwest*

Before Simulation



After Simulation





Cut Slopes, Retaining Wall, and Noise Barrier Sections

Cut slopes would change the existing landform immediately adjacent to the roadway and could leave permanent scarring if the slope is rock or cannot be revegetated. Some steeper slopes may be difficult to revegetate. Retaining walls are proposed in the depressed sections of US 6 and SH 93 to minimize right-of-way impacts on the adjacent properties. Locations where cut slopes and retaining walls could have visual impacts are listed (see **Table 4.12-3**).

Table 4.12-3 Locations Visually Impacted by Cut Slopes, Retaining Walls, and Noise Barriers

Location	Type	Impact Description
Indiana Street Connection interchange	Bridge abutment	Proposed to be in a 5- to 50-foot fill section.
South of bridge over Leyden Gulch and Leyden Road	Mainline	Designed in a 20- to 70-foot-high cut section. The views of this slope would primarily be from motorists traveling along Leyden Road as many of the residential areas are more than one mile away.
SH 93 between Washington Avenue and SH 58	Elevation of SH 93 over Iowa Street	Replacement of the existing intersection of SH 93 and Iowa Street with an elevated structure approximately 30 feet over Iowa Street to support SH 93 will obstruct or impact views from the residents, businesses, and Mitchell Elementary School immediately east of the roadway. The reason for this change is described in Section 2.3.4.2 . Retaining walls will be required along the entire section of SH 93 in the Golden area obstructing or impacting the previous suburban/rural views for motorists traveling SH 93 (see Figure 4.12-28).
US 6 and SH 93 between Iowa Street and C-470	Cut slopes and retaining walls	Cut slopes and retaining walls would be used to narrow the impact area and avoid 4(f) resources. Retaining walls may be 20 to 45 feet high depending on adjacent topography (see Figure 4.12-29). Adjacent residential areas would have views of the widened roadway as well as the retaining walls supporting the roadway.
Golden Terrace Mobile Homes and Clear Creek Lane	Noise barriers	Noise barriers are proposed at Golden Terrace Mobile Homes (northwest of US 6 and C-470) and Clear Creek Lane (Golden West Condos located south of SH 58 along US 6). See Section 4.7 for detail. The heights of the proposed barriers range from 8 to 25 feet.



*Figure 4.12-28 Photo Simulation C of Overpass at Iowa Street
Looking West*

Before Simulation



After Simulation





*Figure 4.12-29 Photo Simulation D of SH 93
Looking North of SH 58*

Before Simulation



After Simulation



Interchanges

This alternative involves replacing the existing intersections of SH 93 and Iowa Street and SH 93 and Washington Avenue with elevated structures approximately 30 feet over both Iowa Street and Washington Avenue to support SH 93. The structures are anticipated to obstruct or impact views from the residents, businesses, and Mitchell Elementary School immediately east of the roadway. To achieve Section 4(f) avoidance, an elevated roadway section was required in this area. This resulted in additional visual impacts. Changes in alternatives because of Section 4(f) avoidance is described (see **Section 2.3.4.2**). Interchanges would require a structure for the grade-separated roadway. The adjacent roadway and ramps would likely be elevated on fill as they approach the interchange. New interchanges may be considered a visual impact by local residents because of the increased traffic, possible elevated ramps or structures, and the potential for use of retaining walls or fill slopes. Additional information about interchange-related impacts is in the previous sections on cut slope and retaining walls and bridge and fill sections. There is a single-point urban interchange proposed at the intersection of US 6 and 19th Street (see **Figure 4.12-30**).



Adjacent residential areas and other sensitive land uses, such as recreational lands and lands of high visual quality, or in areas of important or identified viewsheds may result in visual impacts associated with the grade-separated structures. Views to the northwest of the foothills near SH 72 and Welton Reservoir would likely be blocked by the SH 72 interchange and the road on new alignment being elevated or on fill slopes. Interchanges at 19th Street and Heritage Road would have minimal effects because the mainline would be depressed. However, the additional lighting and use of retaining walls may be considered a visual impact.



*Figure 4.12-30 Photo Simulation E of the proposed Single Point Urban Interchange
Looking Southeast along US 6 near 19th Street*

Before Simulation



After Simulation





New Alignment

The mainline on the new alignment may be considered a visual impact to adjacent residents who value the undeveloped open land more than conversion to a transportation use. Because much of the land in the central portion of the study area is undeveloped, there would be pockets of current residential developments affected by the new alignment of the Freeway Alternative.

- The extension of Northwest Parkway would begin at grade and cross over US 36 and through Interlocken on elevated structures. The roadway on structures may block views to the Flatirons for businesses and residences located east of the structures.
- The new road would continue south at grade on new alignment through the interchange with SH 128 and north of Great Western Reservoir. The visual impact would be associated with new pavement and roadway elements, such as lighting, signing, and vegetation clearing.
- The new road would travel parallel to Indiana Street from Great Western Reservoir to approximately 96th Avenue. The visual impact would be associated with new pavement and roadway elements, such as lighting, signing, and vegetation clearing.
- The new road travels north of Welton Reservoir, crosses SH 72, Barbara Gulch, Leyden Road, and Leyden Gulch. Residents along Leyden Road and Quaker Street would have a prominent view of the new road and bridge structure over Leyden Gulch and Leyden Road. The visual impacts would be associated with grading and resulting cut slopes, new pavement, and roadway elements, such as lighting, signing, and vegetation clearing.
- The new road would become SH 93, cross under existing SH 93 and continue west of the existing SH 93 alignment. A frontage road would parallel SH 93 in this section to serve local access. The visual impact would be associated with new pavement and roadway elements, such as lighting, signing, and vegetation clearing.

Land Use Changes

A widened roadway section would result in the conversion of land to a transportation use. Much of the land in the southern portion of the study area adjacent to road improvements is already developed. The visual impact would be a change of the current land use character to that of a transportation corridor (see **Section 4.1**). Minor amounts of right-of-way acquisition for transportation use would not create a substantial impact (see **Section 4.5**). However, in locations where the new roadway is on new alignment or offset from current roadways, the effect would be more noticeable since the roadway is a new visual element in the landscape.

INDIRECT EFFECTS

The Freeway Alternative would have some indirect effects (see **Section 4.1** and **Section 4.12.2.2**).

4.12.2.4 TOLLWAY ALTERNATIVE

DIRECT IMPACTS

The Tollway Alternative will have a typical tollway section for roadway improvements adjacent to Interlocken Loop, south of SH 128, adjacent to Indiana Street, adjacent to SH 93, and adjacent to US 6. Two segments of roadway would be on new alignment: one between SH 128 and Indiana Street and another between Indiana Street and SH 93. The typical tollway section includes extensive barriers to maintain separation between existing general purpose lanes and toll lanes. Existing and proposed roadway dimensions were compared to assess the change in roadway character and how that would influence views from and to Tollway Alternative improvements (see **Table 4.12-4**).

Because many of the impacts of Tollway Alternative are similar in nature to those of the Freeway Alternative, the following discussion focuses on the differences or incremental changes between them.



Table 4.12-4 Comparison of Roadway Dimensions for Tollway Alternative Roadways

Roadway	Existing Roadway Width	Proposed Pavement Width ¹	Proposed Right-of-Way Width ²
Interlocken Loop	105 to 115 feet	N/A	N/A
Tollway Alternative Alignment Adjacent to Interlocken Loop	N/A	Two 44-foot-wide elevated structures	220-240 feet
SH 128	45 to 65 feet	N/A	N/A
Tollway Alternative Alignment South of SH 128	N/A	144 feet	190-300 feet
Indiana Street (SH 128 to SH 72)	36 to 58 feet	N/A	N/A
Tollway Alternative Alignment Adjacent to Indiana Street	N/A	144 feet	190-300 feet
Tollway Alternative Alignment Indiana Street to SH 93	Not applicable	144 feet	190-300 feet
SH 93 (SH 72 to Washington Avenue)	50 to 72 feet	N/A	N/A
Tollway Alternative Alignment Adjacent to SH 93	N/A	144	190-300 feet
SH 93 (Washington Avenue to SH 58)	50 to 72 feet	138 to 160 feet	190-300 feet
US 6 (SH 58 to 19 th Street)	72 feet	160 feet	200-300 feet
US 6 (19 th Street to C-470)	79 feet	167 feet	200-300 feet

Notes: ¹Includes the existing roadway in the overall total.

²Includes clearing required for drainage ditches, side slopes, and clear zone.

Source: Compiled by Carter & Burgess, 2006.

Pavement Width

The Tollway Alternative would require the widest pavement typical section of all the alternatives. It would be wider in areas where it parallels existing roadways since the existing roadway remains intact and the toll lanes are added to the outside. In most locations, the Tollway Alternative would have two to three times the current pavement width. The magnitude of this change is such that the current “feel” of the road would be substantially changed. In areas where the Tollway Alternative is on new alignment, it would be similar to the Freeway Alternative in width. The Tollway Alternative would be wider than the Freeway Alternative in the following locations:

- SH 93 (Washington Avenue to SH 58) 38 feet wider
- US 6 (SH 58 to 19th Street) 38 feet wider
- US 6 (19th Street to C-470) 45 feet wider



Cut, Fill, Retaining Wall and Noise Barrier Sections

Cut slopes would change the existing landform immediately adjacent to the roadway and could leave permanent scarring if the slope is rock or cannot be revegetated. Some steeper slopes may be difficult to revegetate. The mainline crosses over existing SH 93 in a number of locations north of Golden requiring fill slopes and retaining walls. Some more notable cut and fill sections are listed (see **Table 4.12-5**).

Table 4.12-5 Cut, Fill, Retaining Walls, and Noise Barrier Sections

Location	Type	Impact Description
Indiana Street Connection interchange	Bridge abutment	Would require a 5- to 50-foot-high fill section.
Over Haines and Piquette Ditch	Abutment fill for bridges	Mainline is on vertical profile to cross over existing SH 93 at interchange and would require 10- to 100-foot-high fill slope sections.
Over 64 th Parkway	Abutment fill for bridges	Would require 0- to 70-foot fill slopes.
East and west side of SH 93 from Washington Avenue to SH 58	Retaining walls	Designed to be 5 to 50 feet high.
Golden Terrace Mobile Homes, Clear Creek Lane, 400 Block of Snowberry Court, and 1100 Block of Jackson Street	Noise barriers	Noise barriers are proposed at: Golden Terrace Mobile Homes (northwest of US 6 and C-470), Clear Creek Lane (Golden West Condos located south of SH 58 along US 6), 400 block of Snowberry Court (north of US 6 and SH 93, SH 58), and 1100 block of Jackson Street (Golden Mesa Meadows north of SH 58 on SH 93). See Section 4.7 for detail. The height of the proposed barriers range from 8 to 25 feet.

Interchanges

Interchanges would require a grade-separated structure for one of the roadways. The roadway and ramps are likely to be elevated on fill as they approach the interchange. The list of interchanges is different for the Tollway Alternative than for the Freeway Alternative.

New Alignment

The portions of the Tollway Alternative that would be on new alignment are largely consistent with the new alignment description of the Freeway Alternative. Some access configurations would be subtly different.

Tollway Facilities

Tollway facilities are anticipated to reflect current and future technologies which allow for toll collections with minimal infrastructure and appurtenances (additional equipment or facilities). As such, it is likely that the tolling nature of this alternative would have minor visual effects because of toll collection systems. Traditional toll plazas are not anticipated.

INDIRECT EFFECTS

The Tollway Alternative would have some indirect effects (see **Section 4.12.2.2** and **Section 4.1**).



4.12.2.5 REGIONAL ARTERIAL ALTERNATIVE

DIRECT IMPACTS

The Regional Arterial Alternative will have a major regional arterial typical section for improvements to the existing roadways of Interlocken Loop, SH 128, Indiana Street, SH 72, SH 93, and US 6. Frontage roads are proposed west of the 64th Parkway interchange and south of SH 72 between SH 93 and Indiana Street to provide local access. New frontage roads would require additional right-of-way and would convert more land to a transportation use. Existing and proposed roadway dimensions were compared to assess the change in roadway character and how that would influence views from and to Regional Arterial Alternative improvements (see **Table 4.12-6**).

Table 4.12-6 Comparison of Roadway Dimensions for Regional Arterial Alternative Roadways

Roadway	Existing Roadway Width	Proposed Pavement Width	Proposed Right-of-Way ¹ Width
Interlocken Loop	105 to 115 feet	131 feet, plus 44 feet for trail and buffer ²	220-240 feet
SH 128	45 to 65 feet	131 feet, plus 44 feet for trail and buffer ²	200-350 feet
Indiana Street (SH 128 to SH 72)	36 to 58 feet	144 feet	200-350 feet
SH 72	34 to 54 feet	144 feet	200-350 feet
SH 93 (SH 72 to Washington Avenue)	50 to 72 feet	144 feet	200-350 feet
SH 93 (Washington Avenue to SH 58)	50 to 72 feet	122 feet	150-350 feet
US 6 (SH 58 to 19 th Street)	72 feet	122 feet	150-300 feet
US 6 (19 th Street to C-470)	79 feet	122 feet	150-300 feet

Notes: ¹Includes clearing required for drainage ditches, side slopes, and clear zone.

²Includes 44 feet (22 feet each side) dedicated to an offset trail and buffer area outside of the paved curb and gutter roadway section.

Source: Compiled by Carter & Burgess, 2006.

The following impacts discussion focuses on the differences or incremental changes between the Freeway Alternative and Regional Arterial Alternative, as many of the impacts are similar in nature. However, in general, the impacts would be much less with the Regional Arterial Alternative since the amount of cut and fill would be reduced; the number and proportions of bridges are fewer; and the width of new pavement would be less than the alignments for the Freeway Alternative and Tollway Alternative.

Pavement Width

The Regional Arterial Alternative would require similar pavement widths along US 6 and SH 93 as the Freeway Alternative. The proposed improvements would be wider in locations where the alignment follows existing roadways that are unique to this alternative, such as SH 72 and SH 128. There would not be any locations that contain new alignment with the Regional Arterial Alternative. The Regional Arterial Alternative has different widths than the Freeway Alternative in the locations identified (see **Table 4.12-7**).



Table 4.12-7 Regional Arterial Alternative Pavement Widths

Location	Impact Description
Interlocken Loop	The proposed paved area is at grade and approximately 60 to 70 feet wider than the existing roadway (15 to 25 feet of new paved roadway plus 44 feet allowed for a trail and buffer). The Freeway Alternative and Tollway Alternative propose a new roadway on two structures through the Interlocken area compared to the at-grade improvements with the Regional Arterial Alternative.
SH 128	The proposed paved area would be 131 feet wide. The mainline would follow the existing roadway and maintain local access.
SH 72	The proposed paved area would be 144 feet wide. The mainline would follow the existing roadway and maintain local access.
SH 93 (SH 72 - SH 58)	The proposed paved area would be the same as the Freeway Alternative, but overall less than the Freeway Alternative and Tollway Alternative (which also would include a new frontage road), whereas the Regional Arterial Alternative accommodates local access off the widened SH 93.

Cut, Fill, Retaining Wall, and Noise Barrier Sections

SH 93 would be at-grade at Washington Avenue in the Regional Arterial Alternative, whereas SH 93 was elevated in the Freeway Alternative. Some more notable cut and fill sections are listed (see **Table 4.12-8**).

Table 4.12-8 Cut, Fill, Retaining Wall, and Noise Barrier Sections

Location	Impact Description
Indiana/SH 128 interchange	Would require 30-foot-high fill section.
Haines and Piquette Ditch and 64 th Parkway	There would be abutment fill for bridges over Haines and Piquette Ditch and 64 th Parkway and walls in same location up to 50 feet in height.
East and West side of SH 93 from Washington Avenue to SH 58	Retaining walls on the east and west side of SH 93 between Washington Avenue and SH 58 and associated with the elevation of SH 93 over Iowa Street are designed to be 5 to 40 feet high, which are shorter in height than the Freeway Alternative and Tollway Alternative.
Golden Terrace Mobile Homes and Clear Creek Lane	Noise barriers are recommended at Golden Terrace Mobile Home (northwest of US 6 and C-470) and Clear Creek Lane (Golden West Condos located south of SH 58 along US 6). See Section 4.7 for detail. The heights range from 8 to 25 feet



INTERCHANGES & INTERSECTIONS

This alternative involves replacing the existing intersection of SH 93 and Iowa Street with an elevated structure approximately 30 feet over Iowa Street to support SH 93. The structure is anticipated to obstruct or impact views from the residents, businesses, and Mitchell Elementary School immediately east of the roadway. To achieve Section 4(f) avoidance an elevated roadway section was required in this area. This resulted in additional visual impacts. Changes in alternatives because of Section 4(f) avoidance is described in **Section 2.3.4.2**. Interchanges would require a grade-separated structure for one of the roadways. The roadway and ramps would likely be elevated on fill as they approach the interchange. The list of interchanges is somewhat different than those for the Freeway Alternative and Tollway Alternative. The Regional Arterial Alternative would have more intersections because it is a major regional arterial facility (see **Chapter 2**).

Landscape Character

Long-term effects to the Mountain Backdrop would include the widening of SH 93 between Leyden Road and SH 72. Widening would occur to both sides of SH 93 in this area which would require right-of-way acquisition from land adjacent to the Mountain Backdrop zone. The primary impacts to the visual landscape in this area would be the wider highway section, associated lighting, and interchange ramps and grading at the SH 72/SH 93 interchange. Viewers from areas to the east may find that some of these elements occur in the middle ground or background of their current views to the foothills.

INDIRECT EFFECTS

The Regional Arterial Alternative would have some indirect effects (see **Section 4.12.2.2** and **Section 4.1**).

4.12.2.6 COMBINED ALTERNATIVE (RECOMMENDED ALTERNATIVE)

DIRECT IMPACTS

The Combined Alternative (Recommended Alternative) will have a typical major regional arterial section for roadway improvements along Interlocken Loop from the Northwest Parkway to SH 128, along SH 93 south of 64th Parkway, and along US 6. It will have a typical tollway section for roadway improvements south of SH 128, adjacent to Indiana Street, and adjacent to SH 93. The tollway portion between Indiana Street and SH 93 will be located on a new alignment. A principal arterial typical section will be used along Indiana Street and McIntyre Street from north of SH 72 to SH 58. This alternative has similar visual impacts to those for the Regional Arterial Alternative between Northwest Parkway and SH 128, it will have similar impacts to the Tollway Alternative between SH 128 and 64th Parkway, and it will have similar impacts to the Regional Arterial Alternative between 64th Parkway and C-470 (see **Section 4.12.5**). No frontage roads will be constructed with this alternative but all access will be maintained from new or existing roadways. Existing and proposed roadway dimensions were compared to assess the change in roadway character and how that would influence views from and to Combined Alternative (Recommended Alternative) improvements (see **Table 4.12-9**).



Table 4.12-9 Comparison of Roadway Dimensions for Combined Alternative (Recommended Alternative) Roadways

Roadway	Existing Roadway Width	Proposed Pavement Width	Proposed Right-of-Way Width*
Interlocken Loop	105 to 115 feet	131 feet, plus 44 feet for trail and buffer	220-240 feet
SH 128	45 to 65 feet	N/A	N/A
Combined Alternative Alignment South of SH 128	N/A	144 feet	190-300 feet
Indiana Street (SH 128 to SH 72)	36 to 58 feet	N/A	N/A
Combined Alternative Alignment Adjacent to Indiana Street	N/A	144 feet	190-300 feet
Combined Alternative Alignment Indiana Street to SH 93	N/A	144 feet	190-300 feet
SH 93 (SH 72 to 64 th Parkway)	50 to 72 feet	N/A	N/A
Combined Alternative Alignment Adjacent to SH 93	N/A	144 feet	190-300 feet
SH 93 (64 th Parkway to Washington Avenue)	50 to 72 feet	144 feet	200-350 feet
SH 93 (Washington Avenue to SH 58)	50 to 72 feet	122 feet	150-300 feet
US 6 (SH 58 to 19 th Street)	72 feet	122 feet	150-300 feet
US 6 (19 th Street to C-470)	79 feet	122 feet	150-300 feet
Indiana Street (SH 72 to 64 th Ave)	26 to 90 feet	123 to 145 feet	150-200 feet
McIntyre Street (SH 58 to 64 th Ave)	26 to 70 feet	123 to 145 feet	150-200 feet

Notes: *Includes clearing required for drainage ditches, side slopes, and clear zone.

Source: *Compiled by Carter & Burgess., 2006.*

Pavement Width

The primary difference with the Combined Alternative (Recommended Alternative) is the use of a principal arterial typical section along Indiana Street and a McIntyre Street. All other roadway dimensions and impacts have been discussed in the description of the other alternatives. The proposed width of both Indiana Street and McIntyre Street would be 123 to 145 feet. The typical section includes two 11-foot lanes in each direction with curb and gutter, a 17- to 28-foot median, and an attached 5-foot paved bike lane. There are also accommodations for a 10-foot buffer and 6.5-foot sidewalk on both sides of the roadway. The wider version also includes space for three additional 11-foot turning or auxiliary lanes with a narrower (6-foot) median. The widened pavement would increase the motorists’ and adjacent land use viewers’ foreground view of the road. The magnitude of this change is such that the current “feel” of the road would be substantially changed (see **Figure 4.12-31**).



Cut, Fill, Retaining Wall and Noise Barrier Sections

The Combined Alternative (Recommended Alternative) roadway elevation will increase by up to 25 feet over the existing roadway elevation on SH 93 north of Golden and on US 6 between SH 58 and 19th Street. This will affect views from residential areas including the Golden Pond Retirement Community east of SH 93 near Golden Gate Canyon Road and will affect views from the Colorado School of Mines facilities and residential areas east of US 6 in Golden.

Noise barriers are proposed at the Golden Terrace Mobile Homes (northwest of US 6 and C-470), Clear Creek Lane (Golden West Condos located south of SH 58 along US 6), and the 6800-6900 block of Howell Street (Maple Valley located north of SH 72 and south of 72nd Avenue). Heights range from eight to 25 feet (see **Section 4.7**).

***Figure 4.12-31 Photo Simulation F along McIntyre Street
Looking North***

Before Simulation



After Simulation





Land Use Changes

The road improvements represent a 77- to 97-foot increase in paved area converting the adjacent land to a transportation use and would result in a change in the rural village character described previously. Portions of McIntyre Street are lined by mature trees and other vegetation which would be removed to construct this alternative.

Interchanges and Intersections

This alternative involves replacing the existing intersection of SH 93 and Iowa Street with an elevated structure approximately 30 feet over Iowa Street to support SH 93. The structure is anticipated to obstruct or impact views from the residents, businesses, and Mitchell Elementary School immediately east of the roadway. To achieve Section 4(f) avoidance an elevated roadway section was required in this area. This resulted in additional visual impacts. Changes in alternatives because of Section 4(f) avoidance is described in **Section 2.3.4.2**. Retaining walls will be required along the entire section of SH 93 in the Golden area obstructing or impacting the previous suburban/rural views for motorists traveling SH 93.

The Combined Alternative (Recommended Alternative) also involves grade separation of the existing at-grade intersection at US 6 and 19th Street in southwest Golden. The alternative is designed to maintain 19th Street at its existing elevation but would depress US 6 under 19th Street. The structure will be a single point urban interchange with associated deck plaza amenities (railing, lighting, and trees). Similar to the SH 93 structure over Iowa Street, the depression of US 6 beneath 19th Street will require the construction of retaining wall structures throughout this section obstructing or impacting the previous suburban/rural views for motorists traveling US 6. A similar interchange would be provided at the intersection of US 6 and Heritage Road.

INDIRECT EFFECTS

The Combined Alternative (Recommended Alternative) would have some indirect effects (see **Section 4.12.2.2** and **Section 4.1**).

4.12.3 SUGGESTED MITIGATION

4.12.3.1 NO ACTION ALTERNATIVE

No mitigation for visual impacts is required for the No Action Alternative.

4.12.3.2 MITIGATION COMMON TO ALL BUILD ALTERNATIVES

Dust and debris associated with air quality construction-related visual impacts may be mitigated by utilizing dust suppression techniques to keep construction-associated dust to a minimum and controlled.

The revegetation plant species would be native trees, shrubs, and grasses of the Colorado foothills and plains. Species could be placed in appropriate sun exposure with proper soil and moisture conditions. Riparian vegetation could be planted at creek and wetland edges (see **Section 4.9**). Where applicable, trees and shrubs could be grouped in patterns similar to those of existing conditions. To help stabilize soils disturbed by construction, native seed mixes could be spread using broadcast methods appropriate to site conditions. Topsoil could be salvaged and stockpiled prior to construction and would be placed on slopes to be seeded after construction. Noxious weed control could be used before salvaging on-site topsoil and during plant establishment. Mulch tackifier products could be used to reduce seed loss from wind or water erosion. Where necessary for erosion protection, slopes could be covered with erosion control blankets.

If trees and/or large shrubs are located in the clear zone, they should be removed to accommodate the cross section. To establish a natural appearing edge, trees could be randomly removed beyond the clearing line, and new tree and shrub plantings would vary in size and height.



Cut and fill slopes could be completed to provide naturally appearing foreground views. Techniques could include undulating finished grades, creating pockets for native shrubs and trees, studding with boulders as appropriate, and establishing large areas of native grass to reflect adjacent natural landscapes.

Opportunities could be explored for natural embankment and natural stream bank treatments for outflow structures from stormwater detention ponds to drainages rather than entirely riprap. This would minimize visual impacts and encourage natural revegetation of disturbed areas.

INDIRECT EFFECTS

Opportunities for integrating any future development into the existing landscape and community could include attention to architectural treatments, building mass guidelines, and lighting and sign ordinances related to height, intensity, and quantity. These measures would be the responsibility of local jurisdictions to oversee and enforce.

4.12.3.3 COMBINED ALTERNATIVE (RECOMMENDED ALTERNATIVE) AND RURAL SECTIONS OF INDIANA STREET AND MCINTYRE STREET

The visual character disturbances and loss of scenic integrity associated with the Combined Alternative (Recommended Alternative) typical roadway section along the rural portions of Indiana Street and McIntyre Street may not be mitigated. The extensive right-of-way impacts and change in land use remove the elements that define the rural character of this corridor. Local jurisdictions should be involved with context sensitive solution planning to determine if effective mitigation can be identified.

4.12.4 SUMMARY OF VISUAL IMPACTS

Based on the summary presented, the Regional Arterial Alternative would have the fewest visual impacts, followed by the Combined Alternative (Recommended Alternative), the Freeway Alternative, and the Tollway Alternative (see **Table 4.12-10**). A qualification to this assessment for the Combined Alternative (Recommended Alternative) alignment is that even though there are fewer impacts along the SH 93 alignment, there are additional impacts to the more rural/undeveloped nature of land use along the Indiana Street and McIntyre Street alignment. The proposed improvements along Indiana Street and McIntyre Street could change the rural character of the area to a more prominent transportation corridor, which contributes to the loss of scenic integrity desired according to local land use plans. The Freeway Alternative and Tollway Alternative could have a medium visual impact with Tollway Alternative having the greatest overall visual impact (see **Table 4.12-10**).



Table 4.12-10 Summary of Visual Impacts

1. Degree of impact or change to alignment corridor condition Compare existing lanuage and right-of-way envelope to proposed; new alignment considered to be a negative impact to open space/undeveloped land.	
Freeway Alternative	Interlocken Loop: high ; Indiana Street: high ; New alignment to SH 93: high ; SH 93 (SH 72 to 58 th Avenue): high ; SH 93 (58 th Avenue to US 6/C-470): medium .
Tollway Alternative	Interlocken Loop: high ; Indiana Street: high ; New alignment to SH 93: high ; SH 93 (SH 72 to 58 th Avenue): high ; SH 93 (58 th Avenue to US 6/C-470): medium .
Regional Arterial Alternative	Interlocken Loop: low ; SH 128: medium ; Indiana Street: low ; SH 72: low ; SH 93 (SH 72 to 58 th Avenue): medium ; SH 93 (58 th Avenue to US 6/C-470): low .
Combined Alternative (Recommended Alternative)	Interlocken Loop: low ; Indiana Street: high ; New alignment to SH 93: high ; SH 93 (SH 72 to 58 th Avenue): high ; SH 93 (58 th Avenue to US 6/C-470): low ; Indiana/McIntyre south of SH 72 to SH 58: high .
2. Visual quality/character of environment/adjacent land uses and viewshed* Does alternative pass through or is it adjacent to sensitive or protected viewshed?	
Freeway Alternative	Interlocken Loop: medium ; Indiana Street: high ; New alignment to SH 93: medium ; SH 93 (SH 72 to 58 th Avenue): high ; SH 93 (58 th Avenue to US 6/C-470): low .
Tollway Alternative	Interlocken Loop: medium ; Indiana Street: high ; New alignment to SH 93: medium ; SH 93 (SH 72 to 58 th Avenue): high ; SH 93 (58 th Avenue to US 6/C-470): low .
Regional Arterial Alternative	Interlocken Loop: medium ; SH 128: medium ; Indiana Street: medium ; SH 72: medium ; SH 93 (SH 72 to 58 th Avenue): medium ; SH 93 (58 th Avenue to US 6/C-470): low .
Combined Alternative (Recommended Alternative)	Interlocken Loop: medium ; Indiana Street: high ; New alignment to SH 93: medium ; SH 93 (SH 72 to 58 th Avenue): high ; SH 93 (58 th Avenue to US 6/C-470): low ; Indiana/McIntyre south of SH 72 to 58 th Avenue and new alignment: medium ; Indiana/McIntyre 58 th Avenue to SH 58: high ; SH 58: low .
3. Sensitivity of Receptor Adjacent to residential, park, or open space? (commercial/industrial and open space considered lower use=low impact; recreation areas with use=medium; residential=high)	
Freeway Alternative	Interlocken Loop: low ; Indiana Street (SH 128 to SH 72): low ; New alignment to SH 93: low ; SH 93 (SH 72 to 58 th Avenue): low ; SH 93 (58 th Avenue to 6 th Avenue/C-470): high .
Tollway Alternative	Interlocken Loop: low ; Indiana Street (SH 128 to SH 72): low ; New alignment to SH 93: low ; SH 93 (SH 72 to 58 th Avenue): low ; SH 93 (58 th Avenue to 6 th Avenue/C-470): high .
Regional Arterial Alternative	Interlocken Loop: low ; Indiana Street (SH 128 to SH 72): low ; SH 72: low ; SH 93 (SH 72 to 58 th Avenue): low ; SH 93 (58 th Avenue to 6 th Avenue/C-470): high
Combined Alternative (Recommended Alternative)	Interlocken Loop: low ; Indiana Street (SH 128 to SH 72): low ; New alignment to SH 93: low ; SH 93 (SH 72 to 58 th Avenue): low ; SH 93 (58 th Avenue to 6 th Avenue/C-470): high ; Indiana/McIntyre south of SH 72: high ; SH 58: low .
Comparative Summary	
All Alternatives	The Freeway Alternative and Tollway Alternative both have medium impacts overall. The Regional Arterial Alternative and Combined Alternative (Recommended Alternative) both have low impacts overall.

Notes: *Visual quality ratings include comments received from public and municipalities regarding their perceptions and documented protected or important viewsheds.

Source: *Compiled by Carter & Burgess, 2006.*



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