Chapter 3

Environmental Impact Analysis

Chapter 3
Environmental Impact Analysis

Introduction

This chapter examines the environmental setting, evaluates the potential significant environmental impacts, and identifies appropriate mitigation measures for each environmental element discussed in this Draft EIR.

Environmental Elements Analyzed in the Draft EIR

As discussed in Chapter 1, Introduction and Overview, the scope of this draft EIR is based on the Initial Study and NOP, as well as comments received during the scoping process, focusing on environmental issues that could result in potentially significant impacts. This chapter of the draft EIR addresses 14 environmental resources, which were determined to be potentially significant in the NOP and scoping process. These environmental elements are addressed in the following sections:

- Section 3.1, Aesthetics;
- Section 3.2, Air Quality;
- Section 3.3, Biological Resources;
- Section 3.4 Cultural Resources;
- Section 3.5, Geology and Soils;
- Section 3.6, Greenhouse Gas Emissions
- Section 3.7, Hazards and Hazardous Materials
- Section 3.8, Hydrology and Water Quality;
- Section 3.9, Land Use and Planning;
- Section 3.10, Mineral Resources;
- Section 3.11, Noise;
- Section 3.12, Paleontological Resources;
- Section 3.13, Public Services and Utilities; and
- Section 3.14, Transportation/Traffic

Sections 3.1 through 3.14 provide a detailed discussion of the environmental setting, impacts associated with the proposed project, and mitigation measures designed to reduce significant impacts where required and when feasible. The residual impacts following the implementation of any mitigation measures also are discussed.

Organization of Environmental Impact Analysis

Each section (Sections 3.1–3.14) addresses an environmental element and contains the following information:

- **Introduction.** This section introduces the issue area and provides a general approach to the assessment.
- **Environmental Setting.** This section describes the physical environmental conditions in the project area as they relate to the issue in question. According to the State CEQA Guidelines, the environmental setting normally constitutes the baseline physical conditions by which the lead agency determines whether or not an impact is significant.
- **Regulatory Setting.** This section summarizes the regulations, plans, and standards that apply to the proposed project and relate to the specific issue area in question.
- **Project Impacts and Mitigation Measures.** This section discusses the significance criteria, the environmental impact analysis, and mitigation measures that may be necessary to reduce environmental impacts and the residual impacts following the implementation of recommended mitigation measures.
- **Methods.** This section describes the methods used to analyze the impacts, whether qualitative analysis or quantitative.
- **Thresholds of Significance.** This section identifies the significance criteria or, where applicable, the thresholds of significance that will be used to evaluate the proposed project's impacts. The criterion or threshold for a given environmental effect is the level at which the City finds the effect to be significant. The significance criteria can be a quantitative or qualitative standard, or set of criteria, pursuant to which the significance of a given environmental effect may be determined. (State CEQA Guidelines, Section 15064.7)
- **Impacts and Mitigation Measures.** The environmental analysis considers the proposed project's potential impacts resulting from short-term construction and long-term operation of the project. Mitigation measures are identified for project impacts that are considered significant based on the significance criteria or thresholds of significance. While the criteria for determining significant impacts are unique to each issue area, the analysis applies a uniform classification of the impacts based on the following definitions:
  - A determination of ***no impact*** is given when no adverse changes in the environment are expected.
  - A ***less-than-significant impact*** would cause no substantial adverse change in the environment.
  - A ***less-than-significant impact with mitigation incorporated*** would avoid substantial adverse impacts on the environment through mitigation.
  - A ***significant but unavoidable impact*** would cause a substantial adverse effect on the environment, and no feasible mitigation measures would be available to reduce the impact to a less-than-significant level.

  Based on the above criteria, the environmental impact analysis assesses each issue area to determine the significance level.
  - **Mitigation Measures.** For potential significant impacts, mitigation measures are presented that would reduce or avoid each impact, as appropriate.
  - **Residual Impacts.** This section provides the final conclusion on the level of significance of the impact after all mitigation is considered and incorporated into the proposed project.

Section 3.1
Aesthetics

Section 3.1
Aesthetics

Introduction

This section identifies and evaluates issues related to aesthetics and visual resources that would be affected by conversion of a 90-gross-acre project site to a sports park complex. It includes a discussion of the visual environment and regulatory setting to establish the existing environmental context. Potential impacts on the aesthetics of the site and surrounding area that would result from the proposed project, and the mitigation measures that would reduce such impacts, are discussed.

Because the viewing experience can be highly subjective, analysis of visual quality and changes to the visual environment are not precisely quantifiable. A number of strategies have been developed to help reduce this subjectivity, and significance determinations are based on the degree of change, not necessarily whether the impact is positive or negative. The analysis in this EIR is based, in part, upon a process developed by the U.S. Department of Transportation Federal Highway Administration (FHWA), as described in the *Visual Impact Assessment for Highway Projects* (Federal Highway Administration 1981). The City of Lake Forest CEQA Significance Thresholds Guide (2010) incorporates this process in its chapter on aesthetics and visual resource assessment.

Concepts and Terminology

Visual Resource Assessment

Visual resources are the various components of the landscape that contribute to the visual character of a place. These components can be natural or man-made and include objects, vistas, and viewsheds. A visual assessment generally begins with an inventory of the visual resources and aesthetic conditions of a particular site, and involves the following steps:

- describe the existing visual character and visual resources of the project site/study area,
- identify visually sensitive resources,
- identify viewers and representative viewpoints to the project area,
- evaluate the effects the proposed project would have on visual resources, and
- if impacts are considered significant, provide mitigation measures to avoid or reduce these impacts.

This process is based upon the FHWA assessment method, in which the aesthetic value of an area is a measure of its visual character and quality, combined with the viewer response to the area. These concepts are described below.

Visual Character

Visual character is defined by descriptive attributes in the landscape. Natural and artificial landscape features contribute to the visual character of an area or view. Visual character is influenced by geologic, hydrologic, botanical, wildlife, recreational, and urban features. The perception of visual

character can vary significantly seasonally, even hourly, as weather, light, shadow, and elements that compose the viewshed change. The basic elements used to describe visual character for most visual assessments are the form, line, color, and texture of landscape features. The appearance of the landscape is described in terms of the dominance of these components. For example, an urban setting can be highly engineered where geometric lines and forms dominate the landscape, and there is minimal contrast in texture and perhaps stark contrast in color. This has a very different character than a natural landscape defined by rolling hills, textured vegetation, contrasting forms, and muted colors. In the visual assessment, neither landscape is considered to have greater or better visual character.

Visual Quality

Visual quality is evaluated based on the relative degree of vividness, intactness, and unity, and is modified by viewer sensitivity, or awareness of the view. The concepts of vividness, intactness, and unity are described below.

- **Vividness** is the visual power or memorability of landscape components as they combine in striking and distinctive visual patterns.
- **Intactness** is the visual integrity of the natural and human-built landscape and its freedom from encroaching elements. This factor can be present in well-kept urban and rural landscapes and in natural settings.
- **Unity** is the visual coherence and compositional harmony of the landscape considered as a whole. It frequently attests to the careful design of individual components in the landscape.

High-quality views are highly vivid, relatively intact, and exhibit a high degree of visual unity. Low-quality views lack vividness, are not visually intact, and possess a low degree of visual unity (Federal Highway Administration 1981).

Viewer Exposure and Sensitivity

The measure of the quality of a view must be tempered by the overall sensitivity of the viewer. *Viewer sensitivity*, or concern for a particular viewshed, is based on the visibility of resources in the landscape, proximity of viewers to the visual resource, elevation of viewers relative to the visual resource, frequency and duration of views, number of viewers, and type and expectations of individuals and viewer groups.

The importance of a view is related in part to the position of the viewer to the resource. Therefore, visibility and visual dominance of landscape elements depend on viewers' placement within the viewshed. A *viewshed* is defined as all surface area visible from a particular location (e.g., an overlook) or sequence of locations (e.g., a roadway or trail). To identify the importance of views of a resource, a viewshed may be broken into distance zones. Distance zones will vary according to geographic region and types of terrain, however, they are commonly defined as follows: *foreground* (in which the observer is a direct participant and objects in the view are at a close range [0.25 to 0.5 mile from the viewer]), *middleground* (which is generally in the center of the viewshed, between foreground and background zones, and objects are still large enough to be visually differentiated from adjacent visual features), and *background* (in which the observer can see less detail and distinction of features, and where the visual emphasis is on outlines and edges such as ridgelines and skylines [extends from about 3-5 miles then infinitely from the viewer]). Generally, the closer a

resource is to the viewer, the more dominant it is and the greater its importance to the viewer (Federal Highway Administration 1981).

Visual sensitivity depends on the number and type of viewers and the frequency and duration of views. Visual sensitivity is also modified by viewer activity, awareness, and visual expectations in relation to the number of viewers and viewing duration (see discussion under "Existing Viewer Groups").

Environmental Setting

This section discusses the existing conditions related to the visual resources in the project area. It provides an overview of the regional landscape to establish the general visual environment of the project area, and is followed by a discussion of visual resources in the study area and user groups that have views of these resources.

Visual Character of the Project Region

Lake Forest is located in the heart of south Orange County and Saddleback Valley, between the coastal floodplain and the Santa Ana Mountains. I-5 forms the southern boundary of the City. The southern portion of the City is a relatively flat, developed suburban area, with the built environment defined by freeway services, commercial development, landscaped parkways, and residential neighborhoods. The City extends north to the foothills of the Santa Ana Mountains. The mountains form a visual backdrop and topographic context for the more recently developed/developing northern reach of the City. Development conforms to the rising topography of the City. The geometric lines and engineered forms associated with moderately dense suburban land use patterns characterize the landscape adjacent to the I-5. As the city rises in elevation, it transitions into a more natural setting. Development conforms to the rolling topography, and the serpentine lines, textured hillsides, and natural colors of undeveloped land and preserved riparian corridors begin to influence the City's character. Residential communities tend to hug hilltops, leaving steeper and undevelopable slopes as open space. These more natural elements of the suburban landscape combine with developed open space and landscaped parkways to form a visual link that weaves through the City, becoming more prominent in the viewshed of the project area. The viewshed of the project area ultimately opens up to the expansive views of the developing foothills, the approximately 4,300-acre Whiting Ranch Wilderness Park, the Cleveland National Forest, and the ridgelines of the Santa Ana Mountains.

Elevations range from approximately 300 feet at the I-5, to up to 1,400 feet at the City's northern boundary, shared by the Cleveland National Forest. The Santa Ana Mountains and foothills can be seen from various points within the City, including from major roadways, while views of the Saddleback Valley floor and the Pacific Ocean can be seen from higher elevations. Aliso Creek, which runs along the eastern edge of the project site, and Serrano Creek, located to the west but not visible from the project site, have been maintained in places as recreational and riparian corridors.

Visual Character of the Project Site

Overview

The project site is located generally northwest of the intersection of El Toro Road and Santa Margarita/Portola Parkway south of the State Route 241 toll road. Elevation ranges from approximately 715 feet above mean sea level in the northwest portion of the project site to approximately 860 feet above mean sea level in the southeastern portion. Of the total approximately 90-gross-acre site, the northern 31 acres have been disturbed by mining and grading activities. The Baker Ranch property makes up 18 of the 31 disturbed acres, and is currently used as a sand mining operation and commercial nursery. The Rados property comprises approximately 13 acres within the central portion of the project site, and has been disturbed by prior grading activities. The remainder of the site, known as the Glass Creek Open Space, is a moderately undisturbed landscape of rolling hills and native vegetation.

The 58.6-acre Glass Creek property comprises 20.6 acres that were placed in a passive use easement when ownership was transferred to the City. Vegetation is predominately a mix of scrub species including California buckwheat (*Eriogonum fasciculatum*), California sagebrush (*Artemisia californica*), sages (*Salvia* spp.), and prickly pear cactus (*Opuntia littoralis*). There are a number of dirt trails that transect the site, created by off-road bicyclists and hikers who spur off of the County trail to traverse the undeveloped ridges, swales, and knolls of the project site and adjacent native landscape to the west.

A riparian corridor, whose dominant species are willow (*Salix lasiolepis*) and sycamore (*Platanus racemosa*) trees, defines the east and southeast boundary of the site. The county's Aliso Creek Bike Trail parallels the riparian corridor. A water tank that is painted an ecru white, owned by the Irvine Ranch Water District (IRWD) and partially hidden from view by topography and a screen of eucalyptus trees, punctuates the ridgeline that outlines the western boundary of the site. The Normandale neighborhood is located south of the site, with views of the site provided from the rear of a few residential properties; the majority of views from this neighborhood are obstructed by a prominent ridgeline and intervening residential development.

Developed access trails are located off the Aliso Creek Bike Trail, at the intersection of Portola Parkway and El Toro Road, and from a trailhead that ties into the Normandale neighborhood south of the site.

The project site is surrounded by development, including residential neighborhoods, commercial development, freeways and arterials, a place of worship (Saddleback Church campus), an aggregate mining facility, recreational areas, and trails. Although physically surrounded by development, the site is visually linked to the undeveloped slopes and riparian corridors in the surrounding area, and to the more distant foothills, Whiting Ranch Wilderness Park, and the Cleveland National Forest. Its aesthetic value is based in large part on the increasing scarcity of its visual character as a pocket of native landscape within the expanding suburban development.

Scenic resources and views into the site from nearby areas are illustrated in Figure 3.1-1.

Visual Resource Inventory

The project site can be divided into visual resource units to provide a framework for discussion of existing conditions and to help understand the extent of visual changes that would arise with the

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Figure 3.1-1
Scenic Resources and Sensitive Receptors

project in place. The following four landscape units are intrinsic to the site; each has a distinct landscape character and represents a change in spatial experience. Photographs that demonstrate the existing visual conditions on site within each of the four landscape units are provided in Figures 3.1-2 through 3.1-5.

Ridgeline. The site is enclosed on the southwest corner by a ridgeline that rises approximately 60 to over 100 feet above the site's lower elevations. The ridgeline forms a continuous line that defines the southwest boundary of the site and serves as a backdrop for the arrhythmic topography that rises throughout much of the Glass Creek Open Space (Figure 3.1-2, Photograph 1). A water tank, partially screened from view by eucalyptus trees, lies on the northern extent of the ridgeline.

Views from the top of the ridgeline extend across the project site to a panoramic landscape of developing foothills, preserved wilderness, and forest lands rising to the Santa Ana Mountains, whose ridgeline forms the horizon (Figure 3.1-2, Photographs 2 and 3). At a less grand scale but in a similar manner, the ridgeline of the project site provides the horizon line for viewers looking across the site from the north, northeast, and east (Figure 3.1-3, Photographs 4 and 5). In this capacity, the ridgeline is an important resource in the landscape, providing an undeveloped skyline that visually links to the open landscape in the surrounding area and distant viewshed.

Riparian Corridor. A watercourse and tall deciduous trees define the riparian corridor that bounds the southeast corner of the site. The riparian corridor is visually distinctive because of the contrast between the height, color, and texture of the riparian vegetation and the adjacent coastal scrub community on site (Figure 3.1-3, Photograph 5). The riparian corridor physically connects to the Aliso Creek corridor, thereby anchoring the site to the native landscape that meanders through this part of the City (Figure 3.1-3, Photograph 6). Like the ridgeline, the riparian corridor is an important aesthetic resource that unifies the site with natural features in the viewshed. During much of the year, the dense vegetation, light green foliage, and vertical forms screen the interior of the site from view (Figure 3.1-4, Photograph 7) and provide a shaded and enclosed environment for bicyclists and hikers on the adjacent trail (Figure 3.1-4, Photograph 8).

Undeveloped Southern Interior. The southern interior of the site is characterized by sloped topography and rolling hills. The undulating topography is predominantly covered by heavily textured vegetation including lemonade berry, California buckwheat, sages, sagebrush, and prickly pear cactus (Figure 3.1-4, Photograph 9).

Disturbed Northern Interior. This portion of the site comprises the 13-acre Rados property and 18-gross-acre Baker Ranch property. The Baker Ranch property is predominantly characterized by a highly disturbed open pit sand and gravel mine with an assortment of earth work equipment including trucks, bull dozers, belt loaders, and conveyers (Figure 3.1-5, Photograph 10). A semi-portable screening and processing plant is located on the site. The scarred area of exposed sand forms a stark contrast with the adjacent textured hills (and provides a blank canvas of opportunity). Weedy vegetation, rilled hillsides, and road scars characterize the previously mined Rados property (Figure 3.1-5, Photograph 11).

Existing Viewer Groups

Viewer groups are identified to evaluate viewer sensitivity and to select representative view points for the visual impact evaluation. *Viewer sensitivity*, or viewer concern about noticeable changes to views, is based on the visibility of a scenic resource, proximity of viewers to the resource, relative elevation of viewers to the resource, frequency and duration of views, number of viewers, and types

and expectations of the viewer. Generally, visual sensitivity increases as the total number of viewers, frequency, and duration of viewing activities increase. Visual sensitivity is generally considered higher for residents, people who are driving for pleasure, or those engaged in recreational activities that focus on enjoyment of the visual environment.

Principal viewer groups for the proposed project are residents with views into the project area from their homes or residential streets; recreational users, including bicyclists and pedestrians that use undeveloped dirt trails and the developed Aliso Creek trail on site, and the County bikeway that parallels El Toro Road and the project site; and motorists with views into the site from El Toro Road, Portola/Santa Margarita Parkway, and Route 241. See discussion regarding user groups under the heading "Project Impacts and Mitigation Measures," for more detailed information.

Lighting

Roadways, parks, and parking, commercial, and residential areas all have night lighting, which is used for security and safety purposes, and is part of the nighttime ambient lighting in the area. The project site is unlit and provides a pocket of dark sky. The Trabuco Hills High School athletic fields and stadium, located along the west side of the campus and approximately 0.3 mile east and upgradient of the project site, are substantial sources of nighttime lighting in the area. The stadium is operated by the high school and accommodates approximately four or five home football games per season, in addition to some nighttime soccer and lacrosse games (La Blanc pers. comm.). On average, stadium lighting is estimated to be used twice per week, with a curfew observed around 10:00 p.m. (La Blanc pers. comm.). Saddleback Valley Unified School District Recreation Department operates the upper fields at Trabuco Hills High School, which hosts school-related baseball and softball activities as well as adult softball leagues (Barry pers. comm). The fields are used year-round, with programs from 6:00 p.m. to 10:30 p.m. five nights per week, except for a brief off season in April, August, and December (Barry pers. comm). The district observes an 11:00 p.m. lighting curfew by City of Mission Viejo ordinance (Barry pers. comm.). These lights are a source of sky glow and glare and highly visible to residents and motorists because of their elevated position.

The commercial center anchored by LA Fitness and a 24-hour gas station is also a source of nighttime lighting in the area. However, these lights are less dominant in the nighttime landscape, and are similar in character to other commercial uses along Portola Parkway and Santa Margarita Parkway in the vicinity of the project site.

Regulatory Setting

The visual analysis was conducted in conformance with the goals and policies of state and local regulations, as discussed below.

State

California's Scenic Highway Program preserves and protects scenic highway corridors from changes that would diminish their aesthetic value. There are no state scenic highways designated within the City of Lake Forest.

Photograph: 1

Location: Looking west from within project site.

Comment: View shows ridgeline that forms the southwest boundary of the site. Water tank is just visible to the right of the photograph.

Photograph: 2

Location: Looking northeast from ridgeline slope.

Comment: Expansive views are available from the elevated ridgeline and upper slopes across project site to distant foothills and Santa Ana Mountains.

Photograph: 3

Location: Looking north from ridgeline slope across project site to Santa Ana Mountains.

Comment: Continuation of panoramic view shown in Photograph 2.

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Figure 3.1-2
Existing View of the Project Area

Photograph: 4

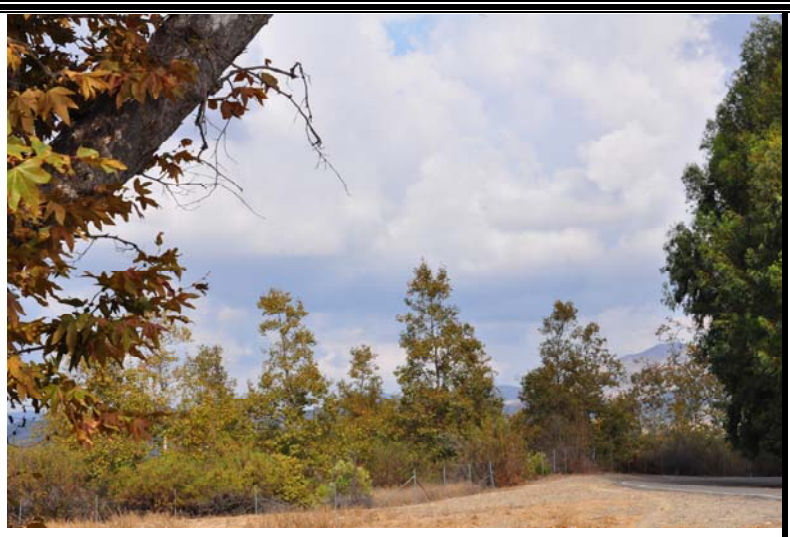
Location: From Saddleback Parkway looking west towards project site.

Comment: The ridgeline at the project site's southwest boundary forms the horizon for viewers looking into the site from the north, northeast, and east. Alterations to the ridgeline would be highly visible and thus the ridgeline is considered a visually sensitive resource.

Photograph: 5

Location: View from Aliso Creek bike trail looking northwest across project site.

Comment: Ridgeline that bounds the project site to the southwest forms the backdrop to this view. Riparian corridor and Aliso Creek Trail are shown in the center of the photo. Height, color, and texture of riparian vegetation are distinctive within the coastal scrub plant community.



Photograph: 6

Location: View from bike trail looking north into project site.

Comment: Riparian channel within the project site merges with Aliso Creek to physically and visually anchor the site to this natural feature in the viewshed. As a buffer and visual link, the site's riparian corridor is a distinct and sensitive visual resource.

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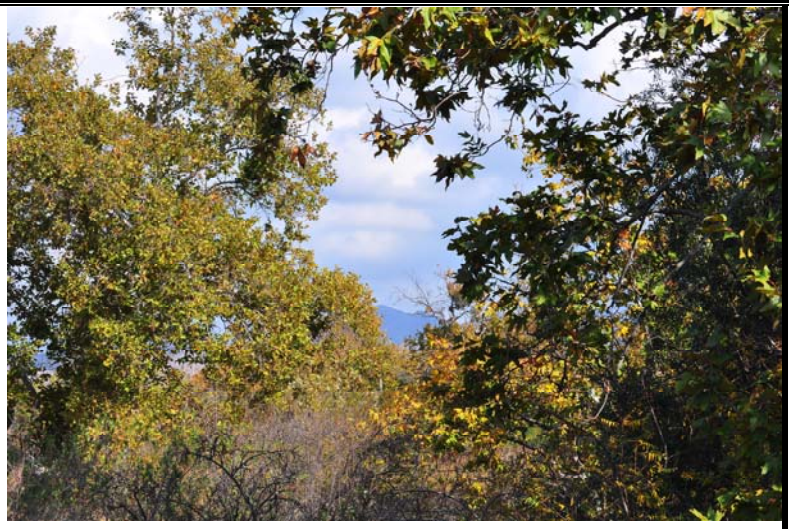
Figure 3.1-3
Existing View of the Project Area

Photograph: 7

Location: View from El Toro Road looking north across site.

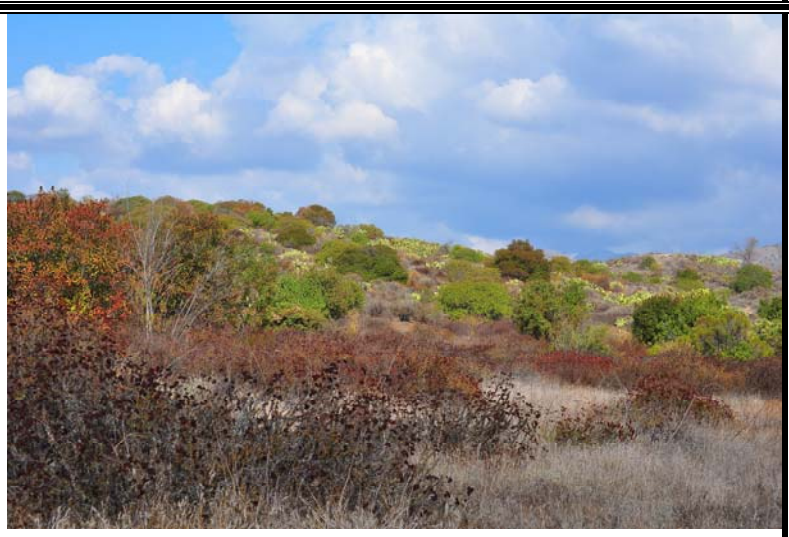
Comment: During much of the year, riparian vegetation screens the project site from view for motorists along El Toro Road and Santa Margarita Parkway.



Photograph: 8

Location: View from Aliso Creek Trail on site looking north towards Santa Ana Mountains.

Comment: Riparian vegetation provides hikers shade, spatial enclosure, and occasional focused views.



Photograph: 9

Location: View from undeveloped southern interior of site looking north.

Comment: View showing rolling hills and coastal scrub plant community typical of undeveloped area of site.

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Figure 3.1-4
Existing View of the Project Area

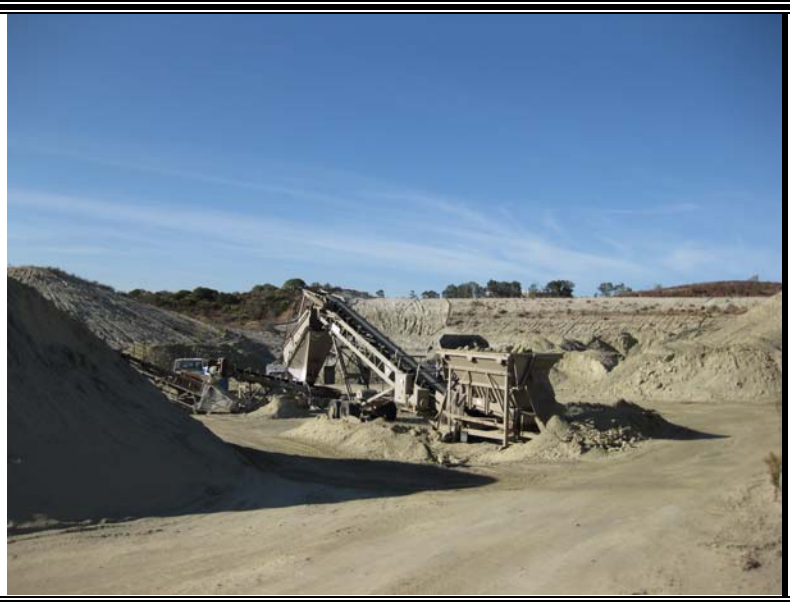	**Photograph:** 10 **Location:** Interior of Baker Ranch property. **Comment:** View of open pit sand mine operating on Baker Ranch property.
	**Photograph:** 11 **Location:** Interior of Rados property. **Comment:** View of disturbed landscape after grading on Rados property.

Figure 3.1-5
Existing View of the Project Area

Local

Orange County Master Plan of Scenic Highways

The Scenic Highway Plan included as Chapter IV of the County of Orange General Plan designates El Toro Road between Santa Margarita Parkway and Live Oak Canyon Road as a scenic viewscape corridor. The designation is intended to incorporate aesthetics into the design of the highway and land development along the route to minimize the impact on scenic resources. Where appropriate, exceptional scenic values should be enhanced through the development of vista points along designated roadways and adjacent bikeways. Prominent views into the site are located near the intersection of El Toro Road and Santa Margarita Parkway, at the westernmost end of the scenic viewscape corridor. Goals and objectives that would apply to this viewpoint include the following:

Goal 1: Preserve and enhance unique or special aesthetic and visual resources through sensitive highway design and the regulation of development within the scenic corridor.

Additionally, El Toro Road from I-5 to Santa Margarita/Portola Parkway is designated as a "landscape corridor," which is designated for special treatment to provide a pleasant driving experience and community enhancement in developed and developing areas.

City of Lake Forest General Plan

Recreation and Resources Element

The Recreation and Resources Element of the Lake Forest General Plan (City of Lake Forest 2008a) identifies goals and policies to ensure the City's recreational and natural resources will meet the needs of existing and future residents. The following apply to scenic resources and open space, and are designed to preserve and enhance the natural physical features and resources that contribute to the City's visual quality and help communicate a sense of place.

Goal 2.0: Preservation and enhancement of important natural resources and features.

> **Policy 2.1:** Conserve and protect important natural plant and animal communities, such as areas supporting rare and endangered species, riparian areas, wildlife movement corridors, wetlands, and significant tree stands through appropriate site planning and grading techniques, re-vegetation and soil management practices, and other resource management techniques.
>
> **Policy 2.4:** Conserve and protect important topographical features, watershed areas, and soils through appropriate site planning and grading techniques, re-vegetation and soil management practices, and other resource management techniques.

Land Use Element

The Land Use Element of the Lake Forest General Plan (City of Lake Forest 2008a) also provides goals and policies to maintain and enhance a distinctive City image to create a greater sense of community and visual identity. These are:

Goal 2.0: A distinct image and identity for Lake Forest.

> **Policy 2.1:** Enhance the physical attributes of Lake Forest to create an identifiable and distinct community within Orange County.

Policy 2.2: Promote high quality in the design of all public and private development projects.

Goal 3.0: New development that is compatible with the community.

Policy 3.1: Ensure that new development fits within the existing setting and is compatible with the physical characteristics of available land, surrounding land uses, and public infrastructure availability.

Policy 3.2: Preserve and enhance the quality of Lake Forest residential neighborhoods by avoiding or abating the intrusion of disruptive, nonconforming buildings and uses.

Policy 3.4: Blend residential and nonresidential development with landscaping and architectural design techniques to achieve visual compatibility.

Project Impacts and Mitigation Measures

This section discusses the potential aesthetic and visual impacts associated with the construction and operation of the proposed project. The loss or alteration of visually significant features, or the introduction of disparate features that conflict with existing visual character and visual elements of form, line, color, and texture are considered significant visual effects. Elements of the proposed project that have the potential to result in significant visual quality impacts include:

- grading activities;
- the conversion of a moderately undisturbed landscape of rolling hills and native vegetation into level grass-covered sports playing fields and support facilities; and
- the installation of up to 48 field lights, ranging in height from 60 to 80 feet, with up to 268 luminaires.

Methodology

Visual Resource Assessment

Aesthetic experiences can be highly subjective and vary from person to person; the methodology used in this visual analysis, which is adapted from the FHWA's visual assessment method (see discussion above under "Concepts and Terminology"), applies objective attributes of form, line, color, and texture to describe the visual environment. These attributes provide the vocabulary for the evaluation of visual quality based upon a view's memorability (vividness), integrity (intactness), and compositional harmony (unity). Combined, these three criteria are used to measure the overall visual quality of the project site. Visual impacts are determined by assessing the visible change in existing environmental conditions that would occur with the project in place and predicting viewer response to that change, irrespective of whether or not the impact is positive or negative, which can be highly subjective.

The following sections identify viewer groups that would be sensitive to visual changes in the project area and locates key observation points (KOPs) to the proposed project that would be accessible to these viewers. A comparison from each KOP of the existing visual environment to the anticipated future visual environment is conducted as appropriate by impact threshold in the section "Impacts and Mitigation Measures." Visualizations are used to illustrate what the proposed sports field complex might generally look like in the landscape. Two grading scenarios are evaluated: the high-pad grading scenario (Grading Scenario 1), which would balance cut and fill on

the project site, and the low-pad grading scenario (Grading Scenario 2), which would be sited approximately 15 feet lower than the high pad scenario. The degree to which the project would alter, degrade, or contrast with the existing aesthetic character of the site is evaluated based upon these visualizations to determine the significance of the impact, and mitigation is provided, where feasible. The evaluation is qualitative and based upon professional standards pertaining to visual quality.

It should be noted that changes in visual quality are assessed based on the visualizations provided in this report, supplemented by qualitative analysis of the project features. The project would involve substantial grading of the slope that forms the south and southwest boundary of the project site. This is a dominant visual feature from some KOPs. The visual assessment is based upon a revegetated slope, as illustrated in project simulations; however, slope conditions can limit successful revegetation and result in a degradation of visual quality, the degree of which would be dependent on the prominence of the slope as a visual resource within the view. Additionally, Grading Scenario 1 could include either the construction of a 2:1 slope or a retaining wall system (up to 45 feet high, with multiple terraces and landscaping) along the east side of the site, nearest Glass Creek. Because detailed grading plans and designs have not yet been completed, evaluation of a retaining wall option is provided qualitatively, as applicable.

Viewer Response

Viewer response to changes in the landscape is based upon a combination of factors including:

- individual viewers or groups affected by exposure to the project (viewer group),
- viewer concern about noticeable changes to the view (viewer sensitivity),
- frequency and duration of views (viewer exposure), and
- type of activity engaged in when viewing the landscape (viewer awareness).

Generally, residents with private views to the site and public views from neighborhood streets would have a high potential sensitivity to changes in visual quality resulting from the project. Property owners tend to take ownership of their views, would view the project frequently, and may use the view during peaceful and relaxing activities. However, overall exposure would be limited by the number of homes that have visual access to the project site.

Bicyclists, off-road dirt bicyclists, and hikers/pedestrians who use onsite trails have a visceral relationship with the site and would also be highly sensitive to visual changes. Site visits indicate the highest use by off-road dirt bicyclists. Presumably, recreational enjoyment of onsite trails is dependent, in part, on the undeveloped character of the site, as users have chosen these trails rather than alternate paved trails that are available. Because of the type of activities engage in, the duration of view, and the proximity of users to visual changes, it is anticipated that this user group would be highly aware of changes in the visual environment.

Recreationalists who use the County bikeway that parallels the project site are less likely to be sensitive to changes in visual quality resulting from the proposed sports field complex than the previous two user groups. Bicyclists who do not seek the project site as a recreational destination are not encouraged to view the site because there are no rest stops or overlooks at this location. Because riparian vegetation screens the site from the bike trail and orientation of the bicyclists runs parallel to the site, viewer awareness and exposure is limited.

Motorists with views into the site include highway travelers on Route 241 and local drivers on arterial roads that run adjacent to the site.

- Because of high speeds and safe driving requirements, highway drivers on Route 241 would have a limited response to project-induced changes to visual quality. Highway passengers have greater opportunities to examine the visual environment. The roadway is elevated and provides an unobstructed view into the project area. However, viewer sensitivity is typically low for highway travelers because high speeds limit the duration of view.
- Motorists on El Toro Road and Portola/Santa Margarita Parkway are likely to be more sensitive to visual changes because these arterial roads are used by local residents familiar with the site. Slower speeds, traffic lights, and intermittent views increase viewer exposure, although awareness of the visual details, character, and quality of the surrounding landscape may not be demonstrated on a daily basis by residents commuting to and from work.

Key Observation Points

Sixteen public viewpoints to the site were identified as representative of the locations of the majority of views for motorists, pedestrians, recreationalists, and local residents. These candidate KOPs were reviewed by the City, and five KOPs were selected as representative views from which the proposed project's potential effects could be assessed. These viewpoints represent the most sensitive receptors from which to conduct the analysis, and while views from other vantage points may be different, they would not be more sensitive. A summary of the five KOPs selected for analysis is provided in Table 3.1-1, and the KOPs are mapped in Figure 3.1-6.

Table 3.1-1. Key Observation Points

KOP	Location	Primary Viewer Group	Use Level	Duration	Comments
A	El Toro Road west of Portola Parkway	Motorist	High	Low	Views partially screened by eucalyptus and deciduous riparian vegetation along Aliso Creek.
B	El Toro Road east of Portola Parkway	Motorist	High	Low	Views partially screened by buildings, riparian vegetation. Ridgeline is visible.
C	Bike Path	Recreationalist	Moderate-High	Moderate-Low	Intermittent views screened by intervening deciduous vegetation.
D	Aliso Creek Trail	Recreationalist, Resident	Moderate/High	Moderate/High	Views partially screened by topography and eucalyptus.
E	Route 241 Toll Road	Motorist	High	Short	Unobstructed view of project area.

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Figure 3.1-6
Key Observation Points

Thresholds of Significance

For this analysis, an impact pertaining to aesthetic resources was considered significant under CEQA if it would result in any of the following environmental effects, which are based on the *City of Lake Forest CEQA Significance Thresholds Guide* (City of Lake Forest 2010). The proposed project would have a significant visual impact if it would:

- substantially damage scenic resources, including scenic vistas from public parks and views from designated scenic highways or arterial roadways;
- create a new source of substantial night lighting that would result in "sky glow" (i.e., illumination of the night sky in urban areas) or "spill light" (i.e., light that falls outside of the area intended to be lighted) onto adjacent sensitive land uses;
- create a new source of substantial glare which would adversely affect daytime visibility and/or views in the area; or
- substantially degrade the existing visual character or quality of the site and its surroundings where:
    - The project would exceed the allowed height or bulk regulations, or exceed the prevailing height and bulk of existing structures.
    - The project is proposed to have an architectural style or to use building materials that will be in vivid contrast to an adjacent development where that development had been constructed adhering to a common architectural style or theme.
    - The project would be located on a visually prominent site and, due to its height, bulk, architecture or signage, would be in vivid contrast to the surrounding development or environment degrading the visual unity of the area.
    - A project would include unscreened outdoor uses or materials.
    - A project would result in the introduction of an architectural feature or building mass that conflicts with the character of the surrounding development.

While the *City of Lake Forest CEQA Significance Thresholds Guide* (City of Lake Forest 2010) does not expressly incorporate Appendix G of the State CEQA Guidelines, impacts to trees, rock outcroppings, and other natural features are covered in both the first and fourth thresholds.

Impacts and Mitigation Measures

Impact AES-1. The project would substantially damage scenic resources, including scenic vistas from public parks and views from designated scenic highways or arterial roadways.

There are no City-designated scenic vistas or transportation corridors within the City of Lake Forest; however, El Toro Road has been designated in the Orange County Master Plan of Scenic Highways as a landscape corridor between I-5 and Santa Margarita/Portola Parkway and a viewscape corridor between Santa Margarita/Portola Parkway and the northern limits of the City. It is the intent of both designations to minimize impacts on scenic resources viewed from the roadway. Prominent views into the site are located near the intersection of Santa Margarita/Portola Parkway and El Toro Road

and are represented by KOPs A and B. The degree to which project-related changes to the site would affect views from El Toro Road is analyzed below according to criteria under Impact AES-1.

KOP A

KOP A (Figure 3.1-7) is located on the 21000 block of El Toro Road approximately 950 feet southwest of Santa Margarita/Portola Parkway. The KOP is approximately 725 feet in elevation and is located across El Toro Road from the project site.

KOP A represents the view towards the site for motorists and pedestrians travelling northeast on El Toro Road. This section of El Toro Road is designated a landscape corridor; design features along the road contribute to a pleasant driving experience and community enhancement. The landscape corridor designation focuses on the beautification of the roadway corridor, rather than highlighting unique scenic resources that can be viewed from the road. The closest athletic field would be located 1,000 feet from the edge of the road and would be partially screened by the Aliso Creek riparian corridor. It is anticipated that the project would have a low-to-moderate influence on corridor design and motorist expectations. Viewing numbers would be high because of the number of motorists passing through this area, and it is likely that many of these motorists would be local residents, who would be sensitive to changes in the view because of their familiarity with their surroundings.

Existing View

Landscape Character. From this viewpoint, the proposed project site is characterized as an undeveloped, natural landscape. The horizon line formed by the project site flows into the distant mountain ridgeline, providing a view of a vast natural area that belies the suburban context.

Visual Quality. Vividness and intactness from this KOP are high. As demonstrated in Figure 3.1-7, current views to the site are partially screened by riparian vegetation along Aliso Creek. The natural landscape of the site, rolling topography, and distant mountain ridgelines combine in a pastoral setting. Middleground and background views provide undisturbed views of the foothills as they extend to the mountain face. El Toro Road is dominant in the foreground and provides the suburban context that emphasizes the uniqueness of the view.

Unity from this KOP is also high. This is a highly textured view whose middle- and background zones are unified by repeating curvilinear lines, undulating landforms, and color patterns that range from tan and umber browns to light and olive greens. El Toro Road introduces horizontal lines, uniform colors, and smooth textures, which sharply contrast with the rest of the view and break the composition into disparate halves. However, viewers on the roadscape tend to overlook traffic and the engineered lines of the road to focus on distant views. Within this context, this is a visually cohesive view of a southern California riparian and foothill landscape.

Impact of High-Pad Grading Scenario

A simulation of the high-pad grading scenario is shown in Figure 3.1-8. The playing fields would be located approximately 70 feet above the KOP, and the closest field would be located approximately 1,000 feet away.

Landscape Character. As shown in Figure 3.1-8, the visual character of the site would be modified because of the middleground conversion to leveled turf and parking areas, and the introduction of the vertical lines of field lighting. From this viewpoint, the project would appear to drape over the

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Figure 3.1-7
Existing View of the Project Area from Key Observation Point A

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Figure 3.1-8
Simulated View of the Proposed Project from Key Observation Point A: Grading Scenario 1, High Pad

landscape as a developed suburban park, in large part because the fields form a continuous and flowing ridgeline. Should a retaining wall be constructed, a small portion of the top of the wall may be visible between the parking area and the riparian vegetation in the foreground.

Visual Quality. Vividness and intactness from this KOP would be reduced from high to moderate with the introduction of the project features into the landscape. The memorability of this view as a vestige of a historic foothill landscape would be diminished by middleground development. While the context of the riparian corridor and distant mountains would continue to influence the distinctiveness of the view, these natural features would be subdominant because of the elevated position of the project and the potential retaining wall features. Intactness would also be reduced to moderate over existing high intactness conditions. The project site is elevated above the KOP, and because of the angle of view, many of the manmade features would be hidden behind the grassed ridgeline. However, the uniform color, texture, and horizontal lines of the playing fields and the potential retaining wall, as well as the random and geometric lines of the light poles that slice through skyline views, would dominate the mid-ground and compromise visual intactness. Riparian vegetation would screen and filter the view to help minimize the visual influence of the project.

Compositional unity would be reduced over existing conditions. The light poles would be highly visible and detract from the flowing lines of the horizon. Introduced fill on the horizon would block most of the distant mountain scenery that is visible under existing conditions. Hard edges, straight lines, uniform color, and smooth texture would visually link the project with the roadway. All of these elements would combine to flatten the depth of the composition. The natural features of the riparian corridor would contrast with the geometry of adjacent uses, and the proposed project, riparian area, and roadway would be seen as three distinct zones.

Impacts would be significant. Mitigation measures AES-1 and AES-2 would provide landscape transitions that would help screen the project and blend it into its setting. These mitigation measures would involve replanting and seeding the disturbed and graded slopes with species and in density patterns that naturally occur onsite, and maintaining the existing riparian buffer that helps to screen much of the site from offsite vantage points.

Impacts of Low-Pad Grading Scenario

Figure 3.1-9 is a simulation of the low-pad grading scenario. The playing fields would be located approximately 55 feet above the KOP, and the closest field would be located approximately 1,000 feet away.

Landscape Character. As with the high-pad scenario, the view would be characterized as a blending of natural open space and developed recreational land.

Visual Quality. Vividness and intactness would be reduced from high to moderate. The proposed fences and backdrops would be visible from this KOP, and visual quality would be reduced by the introduced grid work of geometric lines and tall vertical light poles. The lowered project site would open the view to more of the outlying mountains, some visible through the transparent backdrops, increasing depth and adding to the richness of the view. Because of the lowered elevation when compared to the high-pad scenario, more of the project would be screened by intervening vegetation, the proposed parking areas would not be visible, and the project would not dominate the view. However, chain-link fencing and light poles would intrude on the view and diminish its visual integrity.

The compositional harmony of the landscape would be reduced when compared to existing conditions and unity would also be reduced to moderate. The vertical and horizontal lines of the light poles, fencing, and backstops would be partially hidden and enclosed by the riparian corridor towards the front of the view and the distant mountain ridgeline in the background. As a result, the project would appear to be nestled within the landscape. However, geometric lines and the intrusion of imposing light poles into the skyscape would be incongruent features in the view and detract from the quality of the composition.

Impacts from Grading Scenario 2 would be slightly reduced compared to Grading Scenario 1, but would continue to be significant. Mitigation measures AES-1 and AES-2 would provide landscape transitions that would help screen the project and blend it into its setting. These mitigation measures would involve replanting and seeding the disturbed and graded slopes with species and in density patterns that naturally occur onsite, and maintaining the existing riparian buffer that helps to screen much of the site from offsite vantage points.

KOP B

KOP B (Figure 3.1-10) is located on the 20900 block of El Toro Road approximately 475 feet northeast of Santa Margarita/Portola Parkway. The KOP is approximately 750 feet in elevation.

KOP B represents the view approaching the site as motorists and pedestrians travel southwest on El Toro Road. This section of El Toro Road is designated a viewscape corridor; this designation is given to routes that pass through areas of high aesthetic value. Viewscape corridors highlight unique scenic resources that can be viewed from the road, such as the Aliso Creek Bikeway and farther north, the undeveloped, rolling foothills of the Santa Ana Mountains. KOP B is located on the lower extreme of the designated scenic route, just before it enters the more developed areas of the City. The project site would be a prominent focal point for southbound motorists along this route. By definition, views from County-designated roads are considered sensitive, and motorists along this section of El Toro Road may have a somewhat heightened awareness of the visual attributes in the area. Viewing numbers would be high because of the number of motorists passing through this area (approximately 11,000 daily vehicle trips) (Austin-Foust Associates 2010a), and it is likely that many of these motorists would be local residents, who would be sensitive to changes in the view because of their familiarity with their surroundings.

Existing View

Landscape Character. From this viewpoint, the project site is characterized as a remnant of undeveloped open space. The effects of encroaching development are evident and the roadways, bridge, and shopping area detract from the visual presence of the native landscape.

Visual Quality. Vividness and intactness from this KOP are moderate. Views to the site are partially blocked by development, and roadway lines and activity contrast with the natural onsite features. The project site's sloped topography is the most vivid component of the view because of its mass, scale, and flowing lines. The ridgeline, with its natural browns and olive greens and textured, rolling slopes, intersect the open sky to provide a backdrop of natural beauty. Intactness, however, is compromised by the geometric forms and sharp contrasting colors of the built environment, and the heavily disturbed vegetation along Aliso Creek in the foreground.

Unity from this viewpoint is also moderate. Contrasting colors, textures, and engineered lines of buildings and infrastructure compete with the more fluid elements of the site, and there are few

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Figure 3.1-9
Simulated View of the Proposed Project from Key Observation Point A: Grading Scenario 2, Low Pad

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Figure 3.1-10
Existing View of the Project Area from Key Observation Point B

unifying elements. Most critical to visual coherence is the background slope, which encloses the view and provides an undeveloped ridgeline, and the verdant green vegetation in the creek bed that continues off site. The two combine to reinforce the natural setting and help visually absorb the effects of contrasting development.

Impacts of High-Pad Grading Scenario

Figure 3.1-11 is a simulation of the high-pad grading scenario. The parking area in the mid-left frame of view would be located approximately 20 feet above the KOP and 1,600 feet away. Should a retaining wall be constructed, a small portion of the top of the wall may be visible between the parking area and the riparian vegetation in the foreground.

Landscape Character. The project would cut into the landscape and the view would be characterized as a natural setting sculpted by its suburban use.

Visual Quality. The simulated view of the high-pad grading scenario indicates that project alterations visible from this viewpoint would be minimal. Riparian vegetation along Aliso Creek, the drainage that skirts the eastern boundary of the project, and the LA Fitness building would screen most of the project from view. The parking area nearest El Toro Road would be visible, and portions of a retaining wall feature could be visible above the riparian vegetation. Most of the light fixtures would visually recede from view because of the sloped backdrop, which would minimize their influence on the view. However, their smooth vertical lines would contrast with the textured hillside and they would still be distinguishable. Project alterations would reduce the intactness of the view. Mitigation measure AES-1 would reduce these impacts, but not to less than significant levels.

The most significant modification would be the cut slope that forms the backdrop to this view. The slope and ridgeline are dominant features and, as discussed under the project setting, visually link to the natural components in the area. The project would substantially cut into and denude this native hillside during construction, and the visual effects would continue for a period of time following construction while the slope revegetation becomes meaningfully established. This would form a visual scar in the composition and damage the stature of the slope as a vivid and unifying feature. Revegetation could take up to 5 years (Federal Highway Administration 2008). This would be considered a significant long-term impact. Impacts would be reduced with implementation of mitigation measure AES-2, but not to less than significant levels.

Impact of Low-Pad Grading Scenario

Figure 3.1-12 is a simulation of the low-pad grading scenario. The parking area in the mid-left frame of view would be located approximately 5 feet above the KOP and 1,600 feet away.

Visual Quality. Visual quality would be similar to the high-pad scenario; however, the overall influence of project features on visual quality would be slightly reduced. Because of the lower elevation, more of the project would be screened from view. As a result, the parking area visible in Figure 3.1-12 would be almost indistinguishable, and the influence of the light poles would be softened because of intervening vegetation and their lower stature.

Similar to the high-pad scenario, the cut slope that forms the backdrop of the view would be critical to visual quality. As with the high-pad scenario, the project would substantially cut into this native hillside, resulting in a denuded slope and visually scarred landscape. Impacts from Grading Scenario 2 would be slightly reduced compared to Grading Scenario 1, but would continue to be considered a

significant long-term impact. Impacts would be reduced with implementation of mitigation measure AES-2, but not to less than significant levels.

Comparison of Grading Scenarios

Visual quality under existing conditions and the degree to which changes to visual quality would occur under the high-pad and low-pad grading scenarios are summarized in Table 3.1-2. The table is intended to show relative changes in visual quality at each KOP based on a qualitative assessment of existing conditions and two grading scenarios.

Table 3.1-2. Comparison of Grading Scenarios for KOP A and KOP B

Visual Quality Criteria	Existing Conditions	High-Pad	Low-Pad
KOP A			
Vividness	High	Moderate	Moderate +
Intactness	High	Moderate	Moderate +
Unity	High	Moderate	Moderate +
KOP B			
Vividness	Moderate+	Moderate -	Moderate
Intactness	Moderate+	Moderate -	Moderate
Unity	Moderate+	Moderate -	Moderate

Note: The visual assessment is based upon the revegetation of cut slopes, as illustrated in project simulations; however, slope conditions can limit successful revegetation and result in a degradation of visual quality, the degree of which would be dependent on the prominence of the slope within the view.

Impact Determination

Construction

Large earthmoving equipment, trucks, and other construction equipment would be highly evident in the view. Construction and grading activities would include cutting into and leveling of the project site. Vegetation would be cleared and soils exposed. This would contrast with the surrounding undisturbed landscape and be highly visible. Construction-related activities would have short-term effects on changes in visual quality. Impacts would be temporary and significant.

Operation

High-Pad Grading Scenario. The high-pad scenario would modify existing natural features and introduce contrasting elements that would have a substantial influence on the scenic quality of the site from designated roadways. The most significant changes include the silhouette of light poles in what is currently open sky from KOP A, and major landform modifications from KOPs A and B, including a potential retaining wall along the east side of the site. This grading scenario would substantially damage scenic resources, including views from designated scenic highways or arterial roadways. Impacts would be significant. Mitigation measures AES-1 and AES-2 would help reduce these affects, but not to less than significant levels.

Low-Pad Grading Scenario. The visual effects under this scenario would be somewhat reduced when compared to the high-pad grading scenario. The project would be partially hidden by the intervening landscape from KOP A. Mitigation measure AES-2 would further minimize the effects of

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Figure 3.1-11
Simulated View of the Proposed Project from Key Observation Point B: Grading Scenario 1, High Pad

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Figure 3.1-12
Simulated View of the Proposed Project from Key Observation Point B: Grading Scenario 2, Low Pad

the project. The stature of light poles would be diminished in KOP A, and the light poles would visually recede into the back drop in KOP B. As with the high-pad scenario, landform modifications, especially the cut slope on the south and southwest, would be a significant element in the view from KOP B. Mitigation measures AES-1 and MM AES-2 would help reduce these affects, but not less than significant.

Mitigation Measures

Mitigation Measure AES-1. Re-establish native vegetation along project ridgeline and graded slopes.

During the final stages of construction as part of the landscape installation, ridgeline and sloped areas disturbed by grading and project construction will be replanted and seeded with species and in density patterns that naturally occur on site. If feasible, plant material that can be successfully replanted, and topsoil containing native seeds, will be stockpiled and used in the revegetation plan. Seed may be collected from plant material that has adapted to local conditions from the site prior to grading to be used in conjunction with container stock to obtain maximum coverage for aesthetics and erosion control. Weedy areas shall be mapped and avoided when topsoil is salvaged. Planting design will be conducted to accomplish at a minimum maintenance of the visual link connecting the ridgeline with the natural areas and open space within the viewshed.

Supplemental temporary irrigation will be installed and maintained to promote the establishment of planted and transplanted seedlings and development of extensive root systems. Irrigation intensity and duration will be tapered seasonally to better mimic natural precipitation patterns and help to acclimate the revegetation areas to the natural environment. Irrigation systems will remain in place until revegetation is considered successful based on the established monitoring criteria for plant health and vigor.

Monitoring may involve assessing individual species and/or annual aerial assessments. Individual re-plants will be identified by location and may be considered to be on their own annual monitoring cycle that will continue for 5 years and be considered successful after meeting heath and vigor criteria with no supplemental irrigation for a minimum of two growing seasons. Alternatively, the revegetation area will be monitored for a minimum of 5 years, and if after two growing seasons, plant density, aerial coverage, and health and vigor criteria are met without supplemental irrigation, the revegetation will be considered successful.

Success criteria that may trigger replanting may involve a combination of survival and health and vigor and percent coverage. This may include the following criteria:

- 90% survival or 10% coverage of native species at the end of year 1,
- 80% survival or 20% coverage of native species at the end of year 2,
- 70% survival or 35% coverage of native species at the end of year 3,
- 60% survival or 50% coverage of native species at the end of year 4,
- 50% survival or 60% coverage of native species at the end of year 5.

If after year 5, success criteria is not met, the revegetation shall be compared to cover of adjacent areas. Remedial measures would involve re-planting and re-seeding and continued irrigation, or regrading the slopes to create terraces or pockets that would hold topsoil and re-

plant. A detailed revegetation and monitoring plan will be prepared, which will identify the planting palette, methodology, irrigation requirements, monitoring frequency and duration, success criteria, and contingency measures.

Mitigation Measure AES-2. Maintain open space riparian corridor as a visual buffer.

During the final stages of construction as part of the landscape installation, riparian areas disturbed by grading and project construction will be replanted with riparian species and in density patterns that naturally occur on site. Planting design will be conducted with the following overall goals:

- Screen views into the site of the playing fields, parking lots, field lighting fixtures, and structures.
- Maintain a visual and physical link to the Aliso Creek corridor.
- Use of riparian vegetation such as sycamore trees for landscaped areas adjacent to the existing riparian corridors will help anchor and integrate the project with Aliso Creek and the riparian corridor that bounds the eastern edge of the site.

Residual Impacts

KOP A. Mitigation Measure AES-2 would maintain the riparian buffer and would serve to screen and soften views of changes within the project site. Riparian trees would fenestrate views to the project and help blend it with the setting by feathering edges and softening the transition between the project and the Aliso Creek corridor. Mitigation Measure AES-1 would promote revegetation of fill slopes between the parking area and playing fields. When combined with Mitigation Measure AES-1, impacts would be reduced for both the high-pad and low-pad grading scenarios, but not to less than significant levels.

However, the natural features of the project site would be permanently lost through landform modification, and revegetation may not significantly block the visual effects of the light poles, whose numbers, height, and geometry would appear as highly contrasting features in the skyscape. Additionally, limiting factors to the successful revegetation of cut slopes include exposure of rocky soils and bedrock, loss of topsoil, compacted soils, low rooting depths, and slope gradient (Federal Highway Administration 2008). The use of native species adapted to the site, and reseeding with stockpiled onsite topsoil, will help ensure plant compatibility with site conditions. Impacts would be significant and unavoidable.

KOP B. Mitigation Measures AES-1 and AES-2 would help reduce visual impacts from the designated roadway, but not to less than significant levels. The proposed landscaping would provide screening and help anchor the site to the surrounding context through revegetation with native plants. Mitigation would help blend the project with its surroundings, and ease the transition between the project and its surroundings. These mitigation measures would involve replanting and seeding the disturbed and graded slopes with species and in density patterns that naturally occur onsite, and maintaining the existing riparian buffer that helps to screen much of the site from offsite vantage points. Views of the cut slope that forms the ridgeline view from KOP B would be significant as the backdrop and extended focal point for motorists traveling southwest on El Toro Road. It is anticipated that revegetation of the slope would take 5 years (Federal Highway Administration 2008) and until that time, impacts on visual quality would be significant. Post-construction outcomes, however, cannot be guaranteed because limiting factors associated with slope conditions,

such as compacted soils, poor rooting depth, slope instability, and low water-holding capacity, can prevent successful revegetation. Impacts would be significant and unavoidable.

Impact AES-2. The project would create a new source of substantial night lighting that would result in "sky glow" (i.e., illumination of the night sky in urban areas) or "spill light" (i.e., light that falls outside of the area intended to be lighted) onto adjacent sensitive land uses.

Lighting for the proposed sports field complex is designed for safety and security in the parking lots and along walkways, for safe play on the athletic fields, and to minimize offsite impacts of spill light and sky glow. Lighting levels for night sports are high. Average footcandles for the soccer fields would range from 30.8 to 31.6. The most brightly lit areas would be the baseball infields, with average footcandles ranging from 50.59 to 52.37. Commonly, night lighting from sports facilities is the brightest single source of light in the nighttime suburban landscape, resulting in light pollution in the form of spill light, glare, and sky glow (International Dark Sky Association 2002). Offsite impacts of sky glow and spill light are the focus of this threshold.

To minimize potential light pollution, manufacturers are producing shielded luminaires for sports fields that substantially reduce offsite spill light and uplight. The City of Lake Forest has not formally selected a lighting provider yet, but is working with Musco Lighting, a provider of state-of-the-art lighting equipment for sports fields, to develop the lighting plan for the sports complex. As an example of the type of light pollution reduction technologies available, Musco's Green Sports Lighting System provides light control through the use of a patented reflector and visor assembly. The reflector has customized individual reflector inserts that direct the light onto the field reducing sky glow and spill light onto neighboring properties. A visor assembly works in conjunction with the reflector to provide more light control and reduce glare on and off of the field (Pekala pers. comm.). For the purposes of the lighting analysis in this EIR, data and spill light photometrics that were provided by Musco Lighting are used.

Spill Light

Spill light, or trespass light, is light that is cast where it is not wanted. An example would be light from a streetlight that enters a residence. Spill light is calculated in footcandles, which is a measure of light falling onto a surface. Although the City of Lake Forest Municipal Code does not provide lighting standards for spill light, there are other municipality and industry standards that can be looked to as points of reference. The City of Los Angeles Municipal Code Lighting Regulations, Chapter 9, Article 3, Section 93.0117, restricts exterior light sources to 2 footcandles when falling onto residential property. The International Dark-Sky Association suggests as a goal that spill light from outdoor athletic fields designed for municipal leagues and elementary to high school play (i.e., Class III or IV) be restricted to 0.5 footcandles for nonresidential property, and 0.1 footcandles when spilling onto residential property (International Dark-Sky Association 2002). A spill light blanket grid is provided in Figure 3.1-13, which shows a worst-case scenario if all field lighting is on simultaneously. As demonstrated, residential properties to the southeast and southwest of the project site, which would be the closest sensitive land uses, would not be subject to spill light that exceeds even the more rigorous standard of 0.1 footcandles. Impacts from spill light would be less than significant.

Sky Glow

While spill light can be accurately calculated and the effects measured, the potential effects of sky glow is more difficult to gauge. Sky glow is the brightening of the sky and is the result of light being emitted upward from the light source, reflecting off the illuminated fields, and reflected on airborne particles. Sky glow increases the brightness of the sky, reducing the visibility of stars and celestial objects. The relationship between sky glow and electric light emissions is difficult to quantify because of atmospheric effects and the angular distribution of light. While sky glow is generally noticeable to all receptors in the viewshed, the impact from light sources on receptors will increase as its distance to the viewer decreases.

Although the project site is undeveloped, current nearby sources of night lighting include street lights, parking lot lighting from the adjacent commercial center, headlights, interior and exterior residential lighting, and nighttime illumination associated with commercial uses and special events at public facilities such as the nearby Saddleback Church and Trabuco Hills High School. All contribute to sky glow and have compromised dark sky views by diminishing contrast between the night sky and stars directly overhead. The Trabuco Hills High School upper fields and stadium, which are located approximately 0.30 mile to the south and east and approximately 50 feet above the project site, are a source of substantial sky glow during nighttime sporting events.

New light sources associated with the sports field complex would include the illumination of 13 athletic fields and associated parking lots and walkways. While the detailed lighting plan has not been designed yet, the analysis is based on a lighting plan developed by Musco Lighting that assumes there would be up to 48 light poles for field lighting, ranging in height from 60 to 80 feet, with up to 268 luminaires. When in operation, night views for nearby receptors would be substantially altered by project lighting. Just as the project site's aesthetic value is based in part on its scarcity as an undeveloped native landscape, the site provides an equally scarce dark pocket in the night sky for viewing.

Sky glow varies considerably based upon the angle of the luminary. There is a substantial reduction in uplight when a shielded luminary is positioned horizontal to the ground. When the luminary is angled to increase the range of illumination (i.e., to light up more of the playing field), the amount of light that escapes upward as sky glow also increases. The light control technology at the sports field complex would be designed to balance the goals of providing safe, well-lit fields and minimizing light pollution. However, the project would create a new source of night lighting that would result in sky glow for sensitive land uses within the viewshed. Sky glow would be increased over existing conditions, and would substantially change for residents and the public in the area. Impacts would be significant.

Mitigation Measures

Mitigation Measure AES-3. Onsite verification of lighting installation.

During the installation of the lighting system, the City will retain a registered lighting engineer or lighting professional with certification that indicates proficiency in outdoor lighting design to provide onsite verification that lighting installation conforms to submitted plans. Verification after the completion of construction will ensure that all specifications in the lighting plan, including mounting heights, horizontal angle of luminary shields, spill light foot candles, and lumens, have been met.

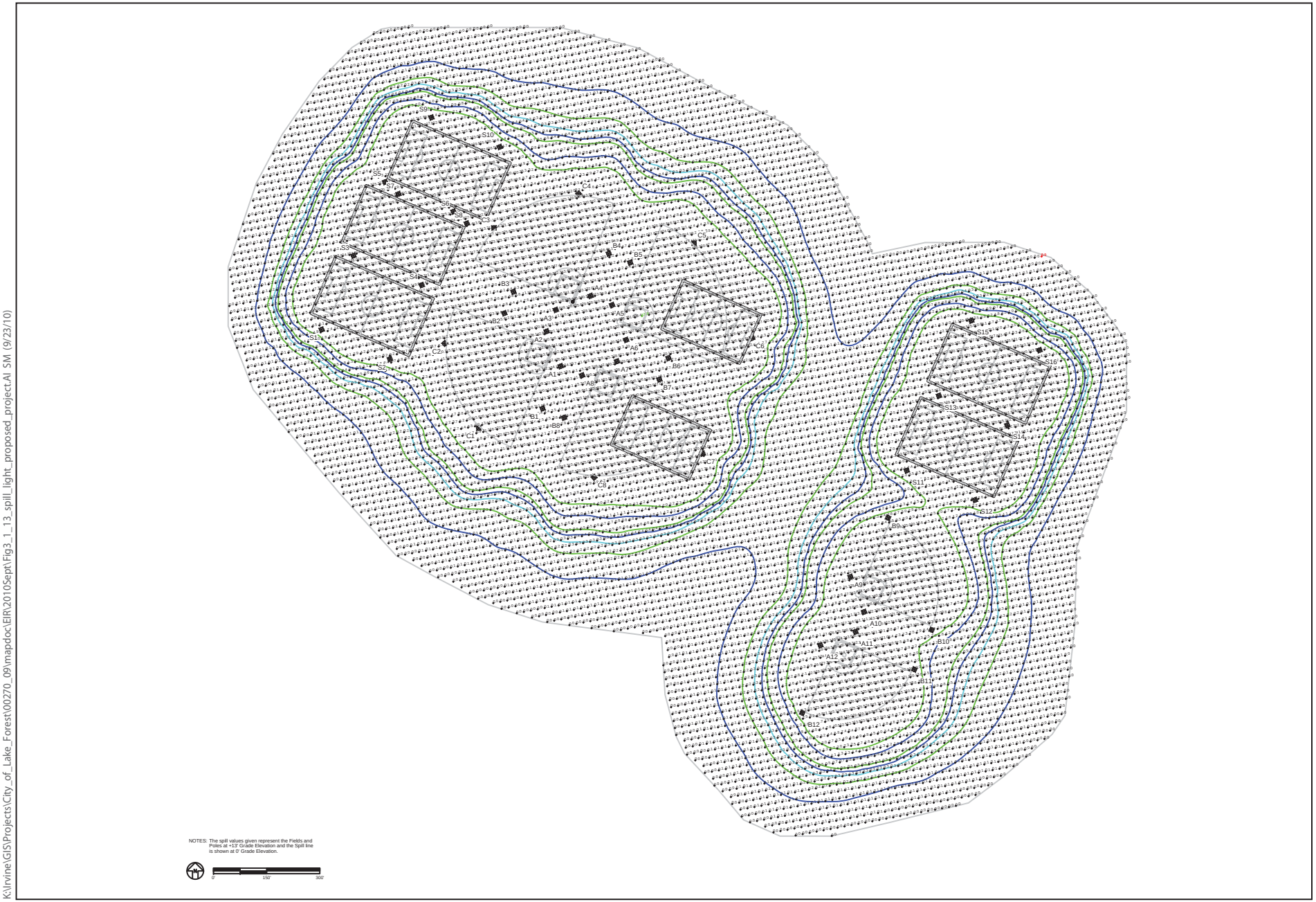

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Figure 3.1-13
Estimated Spill Light Blanket Grid - Proposed Project
City of Lake Forest Sports Park and Recreation Center

Mitigation Measure AES-4. Sports facility lighting curfew.

Throughout the operation of the proposed sports park complex, the City will impose a lighting curfew to limit nighttime operational hours for field use. The imposition of a lighting curfew will help protect nighttime views for sensitive receptors by reducing the duration of operations to provide a light-free sky above the project site during later evening hours. All events will be scheduled to conclude before the curfew, and illumination of the playing fields will be permitted after curfew only to conclude a scheduled event that exceeded curfew due to unusual circumstances. The lighting curfew will be imposed after 10:30 p.m.

Residual Impacts

Without a post-construction evaluation, the level of sky glow cannot be determined with certainty. Additionally, because impacts from nighttime lighting are highly subjective to individual viewers, individual experiences may vary, and may be considered substantial to some area residents. Impacts would be significant and unavoidable.

Impact AES-3. The project would not create a new source of substantial glare that would adversely affect daytime visibility and/or views in the area.

Glare is the result of a light source in the field of view that is sufficiently brighter than the level of light the eye is accustomed to viewing. At a minimum, glare is annoying, and depending on the brightness of the source, it can be a blinding light that affects visibility (International Dark-Sky Association 2002). Daytime glare can be the result of the sun reflecting off of a shiny surface, such as a window.

The sports complex would not provide a substantial source of daytime glare since project components such as the grass fields, landscaping, and asphalt parking would absorb, rather that reflect, light. Proposed one-story structures would have a low profile and are not expected to be a source of glare. Reflection of the sun off of parked car surfaces and field luminaries may result in glare; however, these incidents of glare would be localized and temporary. Any potential offsite direct glare exposure would be minimized by the location of the project with respect to sensitive receptors. The commercial complex on Portola Parkway and adjacent riparian areas would distance the project from El Toro Road and Santa Margarita Parkway, reducing glare intensity. The riparian buffer would screen and filter direct glare. Likewise, the ridgeline boundary to the south and west would visually block most of the Normandale neighborhood from onsite glare. The presence of intervening vegetation, structures, and ridgeline topography would diminish or block direct sightlines to the sports complex, and reduce glare in some locations. Impacts would be less than significant.

Mitigation Measures

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact AES-4. The project would substantially degrade the existing visual character or quality of the site and its surroundings.

Impact AES-4 requires an assessment of the degree to which the project would adversely affect aesthetic attributes and visual quality of the site and surroundings. The City's threshold guide includes design elements that should be evaluated, including bulk, height, architectural style, and building material. Of relevance to the proposed project is the following criterion for significance:

> The project would be located on a visually prominent site and, due to its height, bulk, architecture or signage, would be in vivid contrast to the surrounding development or environment degrading the visual unity of the area.

KOPs C, D, and E represent views to the project site that will be evaluated under Impact AES-4. Table 3.1-3, located at the end of the Impact AES-4 analysis, displays the comparative assessment of visual quality at these KOPs.

KOP C

KOP C (Figure 3.1-14) is located on the Aliso Creek Bikeway adjacent to the project site. The bike trail runs parallel to El Toro Road, and the KOP is located approximately 210 feet northwest of the intersection of El Toro Road and Santa Margarita/Portola Parkway. The KOP is approximately 740 feet in elevation and represents the view that bicyclists and pedestrians would have of the project while traveling south on the bike path. The LA Fitness building is located on the right side of the view, the Glass Creek trail sign is seen half-way between the building and the bike trail, and the IRWD water tank is located behind the eucalyptus trees on the ridgeline in the center of the view.

Existing View

Landscape Character. The view from KOP C shows a natural landscape whose rolling landforms and textured slopes are being encroached upon by development. This is a landscape in transition. Boxy forms, flat colors, and hard edges of development are softened and screened by vegetation, and the view is characterized as a predominantly natural open space.

Visual Quality. Vividness is relatively high from this KOP. The amount of acreage and accessibility of undeveloped open space in proximity to development is unique to the view. The depth and diversity of topography, with its hidden slopes and multiple plant communities, draws the viewer's interest to the site. The area is explorable, and as demonstrated by the trail sign, the public is invited to enjoy it. Within the suburban context, this pocket of native land is distinctive and considered a vivid component in the landscape.

The intactness of the site is high from this KOP. The view is framed by human-made modifications—the bike trail and fence in the foreground, the structure to the right of the frame, and the water tank and eucalyptus on the ridgeline. Central to the view are domed landforms and diverse vegetation. The landscape is highly textured and fluid lines and billowing vegetation visually absorb the introduced structures; from this viewpoint, the site's natural features are dominant.

Unity is also high from KOP C. The natural forms, textures, and colors are visually coherent and partially enclosed by the rigid lines and edges of development. Vegetation screens and softens the discordant features of the built environment, diminishing contrast and helping to unify the composition. For example, the eucalyptus trees screen the water tank and provide a rolling silhouette on the ridgeline that blends this feature into the landscape. Likewise, native willow trees

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Figure 3.1-14
Existing View of the Project Area from Key Observation Point C

and parking lot landscaping block and filter views to the building to minimize its incongruent features.

Impact of High-Pad Grading Scenario

A simulation of the high-pad grading scenario is provided in Figure 3.1-15. The playing fields are shown in the center of the frame and would be located approximately 55 feet above the KOP. The closest field would be located 1100 feet away. Several light poles project above the horizon and would be visible in the sky. The parking area below the fields would be mostly hidden by vegetation. Under this grading scenario, a retaining wall, should it be constructed, would not be visible from this KOP because it would be below the top of the riparian vegetation.

Landscape Character. As shown in Figure 3.1-15, the project would engineer the open space central to the view, replacing rolling topography with graded surfaces and introducing vertical lines that would repeat the hard edges of adjacent development. However, the natural attributes of the project site would help absorb these changes, and the view would be seen as a blending of recreational and commercial land uses within a natural setting.

Visual Quality. Vividness and intactness from this KOP would be reduced from high to moderate with the high-pad scenario. The uniqueness of the area as explorable, undeveloped open space would remain with the project in place; however, the amount of acreage would be substantially reduced. The elevated location of the sports complex would be central to the view. The contrasting horizontal line of the leveled fields and associated cut and graded slopes, and the vertical light poles that penetrate the sky, would attract attention.

The domed hill central to the view would be leveled and replaced with stepped pads for parking and athletic fields. The slope rising to the ridgeline would be cut and graded, as would the slopes between the parking area and fields. These engineered lines and contrasting textures would reduce the intactness of the view when compared to the existing setting. While the eucalyptus trees serve to screen the water tank, the light poles frame it. The water tank would be located on a cut slope that is visually significant because of its elevated position in the view. If the cut slope attracts attention because of discordant colors and textures, it would highlight the water tank and produce a prominent visual scar in the landscape. This would significantly reduce the intactness of the view.

Unity would be reduced to moderate. The straight lines and uniform texture of the LA Fitness building are visually repeated at the project site as leveled playing fields and parking areas, vertical light poles, and cut slopes. The overall effect is the grouping of manmade elements in the upper reaches of the view. Vegetation partially screens these elements and frames the project site. The site's repeating textures and modulated natural colors unify the composition and soften edges to blend the project into the environment.

Implementation of mitigation measures AES-1 and AES-2 would reduce adverse affects on visual quality by providing landscape transitions that would promote revegetation, help screen the project, and blend the project into its setting. These mitigation measures would involve replanting and seeding the disturbed and graded slopes with species and in density patterns that naturally occur onsite, and maintaining the existing riparian buffer that helps to screen much of the site from offsite vantage points.

Impact of Low-Pad Grading Scenario

A simulation of the low-pad grading scenario is shown in Figure 3.1-16. The project would be sited approximately 15 feet below the high-pad scenario. The playing fields and parking areas would be screened by vegetation; however, their location would be disclosed by field lighting. Only a few light poles would be visible above the horizon. The parking area below the fields would be hidden by intervening vegetation and topography.

Landscape Character. The proposed project would have minimal influence on visual character and with successful revegetation of cut slopes, the landscape would be characterized predominantly by its open space.

Visual Quality. Vividness and intactness would be reduced from high to moderate. The most vivid component in the existing view, which is the depth of natural open space that extends from the bike trail to the ridgeline, would be reduced by the conversion of rolling hills to leveled pads. However, because of the lowered elevation, intervening vegetation and topography would screen most of the project from view, and only a few light poles would still project above the horizon. With the successful revegetation of the cut slope that forms the backdrop of the project, the low-pad project would be mostly hidden and would have a minimal influence on the intactness of the view.

Unity would be moderate and only slightly reduced when compared to the existing view. Because of the angle of view from this KOP and lowered elevation of the project, the leveled fields and associated elements would be hidden from view. Natural features of the landscape, including vegetation and topography, would soften edges of built elements and unify the overall composition. The visual theme would be disrupted if cut slopes contrast because of discordant texture and color to form a visual scar in the composition. Revegetation could require 5 years (Federal Highway Administration 2008), and thus would be considered a significant long-term impact. Impacts would be reduced with implementation of mitigation measure AES-2.

KOP D

KOP D (Figure 3.1-17) is located on the ridgeline on the county Glass Creek trail just south of the project site. The KOP is approximately 770 feet in elevation and represents the view for hikers, pedestrians, and off-road bicyclists who frequent the site. While this KOP is not from a residential property, the KOP would be the most comparable view representing a few residential properties within the Normandale neighborhood that may have views of the project site. Both groups of viewers would be highly sensitive to changes in the view because of their personal appreciation of the landscape.

Existing View

Landscape Character. The rolling topography and distant mountains combine in a rural setting of fluid lines, compatible earth tones, and a coarsely textured and diversely landscaped ground plane. The view is characterized as a scene of almost pristine natural conditions.

Visual Quality. Vividness and intactness are rated high. Rolling ridgelines, textured hills, and depth of view combine in distinctive, organic patterns and colors, resulting in a highly vivid view that is predominantly intact. Stark geometric buildings on the developing foothills are just visible to the mid-right of the view, mainly because of their contrast in color and texture. This has a minor influence on the visual continuity of this expansive landscape.

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Figure 3.1-15
Simulated View of the Proposed Project from Key Observation Point C: Grading Scenario 1, High Pad

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Figure 3.1-16
Simulated View of the Proposed Project from Key Observation Point C: Grading Scenario 2, Low Pad

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Figure 3.1-17
Existing View of the Project Area from Key Observation Point D

Unity is also rated high. There is a harmonious relationship between natural landforms and land cover patterns. Detail and stiff texture provide an almost tactile foreground plane. A break in topography and change in color and texture separate the foreground from middleground. Likewise, a break in topography and change in color and texture separate the middleground from the more distant view. These distance zones are significant because they provide visual coherence and depth of view.

Impact of High-Pad Grading Scenario

A simulation of the high-pad grading scenario is shown in Figure 3.1-18. The fill slope and playing fields are shown in the center of the frame and would be located approximately 8 feet above and 300 feet away from the KOP. Many light poles rise above the horizon and would be visible in the sky. Some turf areas and portions of fencing/back stops would be detectable. Should a retaining wall be constructed, a small portion of the southern edge of the wall as it transitions into the existing slope may be visible from this vantage point.

Landscape Character. As shown in Figure 3.1-18, visual character would shift from existing natural open space to combined open space and developed recreation land.

Visual Quality. The project would obstruct the view and reduce vividness and intactness from high to moderate. Although most of the project fields and facilities would not be visible because of their elevated position, the engineered and elevated ground plane, potential retaining wall features, and vertical lines of the light poles would dominate the middleground. This would disrupt the repeating homogeneous lines, colors, and textures of the layered distance zones and reduce the integrity of the view.

Unity would also be reduced from high to moderate. Patterns that visually link the foreground and background would be severed by incongruent middleground elements. The fill slope or potential retaining wall would be a prominent feature, and would create incongruent form, mass, and line to the viewer.

The slope or potential retaining wall would form the transition between the foreground and background view, and its successful revegetation as described in mitigation measure AES-2 could help screen and blend the proposed project into the setting, promoting the quality of the view. However, because the project would require major landform alterations that would be out of scale with the setting, would introduce geometry and uniformity out of character with the natural context, and would disrupt skyline views and views of the sky with multiple light poles that would rise approximately 70 feet above the viewer, impacts would be significant.

Impact of Low-Pad Grading Scenario

A simulation of the low-pad grading scenario is shown in Figure 3.1-19. The playing fields are shown in the center of the frame. The closest field would be located approximately 7 feet below and 300 feet away from the KOP. Turf athletic fields and associated lighting and fencing would be visible in the middleground of the view.

Landscape Character. As shown in Figure 3.1-19, visual character would shift from existing natural open space to combined open space and developed recreation land.

Visual Quality. Vividness and intactness would be reduced from high to moderate, and would represent slightly less visual impacts than the high-pad grading scenario. Although existing visual

attributes in the middleground would be modified by the project, introduced elements would be subordinate, and the lowered elevation would open up views to the distant mountains. Most of the project would be out of view; however, the multi-use fields on the southern end of the project would be visible, and a number of light poles would project above the ridgeline. These features, combined with the uniform and contrasting color of the playing fields, would reduce the integrity of the view.

Unity would also be reduced from high to moderate, and would represent slightly less visual impacts than the high-pad grading scenario. The rich earth tones and textured patterns of the foreground form a visual link to the landscape patterns in the distant mountains, providing a framework for the verdant green athletic fields in the middle of the view. At this time of year, the native middleground shrubs share tones of green with these grassy fields, and the blending of colors would contribute to compositional harmony. Additionally, partial screening by intervening topography and vegetation would help to soften project features, and the revealed backdrop of native topography in the center middleground of the frame would help unify the view.

Impacts would be significant, but would be reduced with implementation of mitigation measure AES-2.

KOP E

KOP E (Figure 3.1-20) is located on the Foothill Transportation Corridor. The observation point is approximately 845 feet in elevation and provides panoramic views that extend from coastal foothills to the Santa Ana Mountains. KOP E is a representative view for motorists. At highway speeds, this would be a temporary view and highway motorists are not likely to be highly sensitive to changes resulting from the project. However, the project covers a significant area of land from this viewpoint and the backdrop is a dominant ridgeline. Significant contrast resulting from incongruent changes in color and texture would be noticeable to motorists.

Existing View

Landscape Character. This is a view of a highly disturbed landscape. Landform alterations and the built environment command attention because of their highly contrasting color, texture, and form in the natural landscape.

Visual Quality. Vividness and intactness are low. The contrasting color of the gravel mine operation dominates the view as the most distinct feature in this scarred landscape. It is a central and distracting component in the view and, combined with other incongruent street-side alterations in the landscape, results in a highly modified and damaged view.

Unity is also considered low. The sandy color and fine texture of mined gravel are repeated in the nursery parking area, roadways, buildings, and water tank, resulting in a random composition in the foreground and middleground views. Flowing ridgelines, harmonious colors, and continuous stippled texture in middleground and background views provide a unified backdrop to this scene. Although the contrast in color and texture of the mining operations is severe, the mounds of exposed sand form an interesting visual link to the flowing ridgelines and landforms more distant in the view.

Impact of High-Pad Grading Scenario

A simulation of the high-pad grading scenario is shown in Figure 3.1-21. The proposed fields would be located approximately 50 feet below the KOP. Rolling topography would be leveled and a large portion of the project would be visible from this KOP. The potential retaining wall could be visible

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Figure 3.1-18
Simulated View of the Proposed Project from Key Observation Point D: Grading Scenario 1, High Pad

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Figure 3.1-19
Simulated View of the Proposed Project from Key Observation Point D: Grading Scenario 2, Low Pad

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Figure 3.1-20
Existing View of the Project Area from Key Observation Point E

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Figure 3.1-21
Simulated View of the Proposed Project from Key Observation Point E: Grading Scenario 1, High Pad

from this KOP under this grading scenario; however, it would not be a prominent feature and would be largely indiscernible in the context of the overall site development.

Landscape Character. With the project in place, the visual character of the site would change from a highly disturbed natural landscape to a highly engineered landscape defined by leveled turf fields; cut and manufactured slopes; a potential retaining wall; paved courts, roads, and parking areas; and associated structures of the proposed recreational complex.

Visual Quality. Vividness and intactness would continue to be low. While contrast in color dominates existing views, the contrast in form between the leveled playing fields and adjacent slope would be a dominant feature. The natural lines and rolling landforms would be replaced with the horizontal lines of playing fields, roads, a potential retaining wall, and parking. These introduced angular forms and uniform texture would extend the zone of the built environment; however, the relationship among built elements (commercial uses and the proposed project) would appear disparate and random in the view, and the intactness of the view would remain low. Mitigation measures AES-5 and AES-6 would minimize the contrast of architectural features to help integrate restrooms, concession buildings, and the recreation center into the setting. Bureau of Land Management (BLM) studies show that painting structures 1 to 2 degrees darker than the color of the general surrounding area minimizes contrast to reduce visual impact and compensates for the effects of shade and shadow (Bureau of Land Management 2008:Unit 7).

Unity would be improved with implementation of the project. The project site would be master planned, resulting in an integrated design on the project site. Mitigation measure AES-6 would provide a comprehensive landscape design to promote visual coherence and compositional harmony. However, landform modifications would have a significant influence on the overall composition. The project would substantially cut into the native hillside southwest of the project. The hillside is central to the composition and secures the project within its natural setting. The cut slope would be denuded and its geometric form and contrasting color would visually scar the landscape. Revegetation could require 5 years (Federal Highway Administration 2008). This would be considered a significant long-term impact. Impacts would be reduced with implementation of mitigation measure AES-2.

Impact of Low-Pad Grading Scenario

A simulation of the low-pad grading scenario is shown in Figure 3.1-22. Rolling topography would be leveled and a large portion of the project would be visible from this KOP. The low-pad grading scenario would be 15 feet lower than the high-pad scenario. This would increase the height of the cut slope, and more of the project would be screened by intervening vegetation. However, this would have a minimal effect on visual quality from KOP E when compared to the high-pad grading scenario, and the impacts would be the same as those described above for the high-pad scenario.

Comparison of Grading Scenarios

Visual quality under existing conditions and the degree to which changes to visual quality would occur under the high-pad and low-pad grading scenarios are summarized in Table 3.1-3. The table is intended to show relative changes in visual quality at each KOP based on a qualitative assessment of existing conditions and two grading scenarios.

Table 3.1-3. Comparison of Grading Scenarios for KOP C, KOP D, and KOP E

Visual Quality Criteria	Existing Conditions	High-Pad	Low-Pad
KOP C			
Vividness	High -	Moderate	Moderate +
Intactness	High -	Moderate	Moderate +
Unity	High -	Moderate	Moderate +
KOP D			
Vividness	High	Moderate -	Moderate +
Intactness	High	Moderate -	Moderate +
Unity	High	Moderate -	Moderate +
KOP E			
Vividness	Low +	Low	Low
Intactness	Low	Low	Low
Unity	Low	Low +	Low +

Note: The visual assessment is based upon the revegetation of cut slopes, as illustrated in project simulations; however, slope conditions can limit successful revegetation and result in a degradation of visual quality, the degree of which would be dependent on the prominence of the slope within the view.

Impact Determination

Construction

Large earthmoving equipment, trucks, and other construction equipment would be highly evident in the view. Construction and grading activities would include cutting into and leveling of the project site. Vegetation would be cleared and soils exposed. This would contrast with the surrounding undisturbed landscape and be highly visible. Construction-related activities would have short-term detrimental effects on visual quality. Impacts would be temporary and significant.

Operation

High-Pad Grading Scenario. The high-pad scenario would modify existing natural features and introduce contrasting elements that would substantially change visual quality. Recreational users and residents at KOP D would experience the greatest change in view because the elevated fields, slopes, and potential retaining wall would serve as a physical and visual barrier, and the elevated light poles would interrupt distant views. Bicyclists along the Aliso Creek bike trail would not be as sensitive to changes in the view; however, the elevated fields and light poles, slopes, potential retaining wall, and contrast resulting from changes in color, texture, and landform would be a substantially noticeable change in view. The greatest visual change would occur from KOP E, which represents the most expansive view of the site. KOPs C and E would have views of the cut slope to the south and southwest of the site. Any contrast in color and texture would be noticeable. Light poles would be visible above the horizon and would represent a substantial change to the skyline views from KOPs C and D. Project impacts would be minimized with mitigation measure AES-1, successful revegetation of visually prominent cut and fill slopes as described in mitigation measure AES-2, and with the inclusion of design features provided in mitigation measures AES- 5 and AES-6.

Low-Pad Grading Scenario. The visual effects under this scenario would be somewhat reduced when compared to the high-pad grading scenario for KOPs C and D. The project would be partially

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Figure 3.1-22
Simulated View of the Proposed Project from Key Observation Point E: Grading Scenario 2, Low Pad

hidden by the intervening landscape in KOP C. Mitigation measure AES-2 would further minimize the effects of the project. The light poles would visually recede into the backdrop in KOP C, and the stature of light poles would be diminished in KOP D. As with the high-pad scenario, landform modifications, especially the cut slope on the south and southwest, would be a major element in the view from KOP C. Visual impacts for KOP E would be comparable to the high-pad scenario because of the distance from the view and the lowered perspective. Project impacts would be minimized with mitigation measure AES-1, successful revegetation of visually prominent cut and fill slopes as described in mitigation measure AES-2, and with the inclusion of design features provided in mitigation measures AES- 5 and AES-6.

Mitigation Measures

Implement mitigation measures AES-1 and AES-2.

Mitigation Measure AES-5. Reduce visibility of new structures.

During the final design stages as part of the architectural finishing, perimeter landscaping and appropriate color treatment for buildings and concrete areas will be designed to include colors that complement and blend with the setting. This will reduce contrast and promote compositional harmony of architectural features. Perimeter landscaping will be designed and installed along the eastern edge of the parking lot to soften the edges, and blend with the natural riparian corridor in the foreground. New accessory structures (excluding the recreation center) will be painted with a shade that is 1 to 2 degrees darker than the general surrounding area. In addition, concrete structures, such as bench drains, will implement integral color, in the same manner, to reduce visibility. Because color selection will vary by location, the City will employ the use of color panels evaluated from KOPs during common lighting conditions (front vs. back lighting) to aid in the appropriate color selection. Color panels will be a minimum of 3 feet by 2 feet and will be evaluated from various distances to ensure the best possible color selection. Refer to http://www.blm.gov/bmp for more information on this technique.

Appropriate paint type will be selected for the finished structures to ensure long-term durability of the painted surfaces. These measures will be implemented during the finishing stages of construction, and will be maintained by the City of Lake Forest over the life of the project.

Mitigation Measure AES-6. Develop landscape master plan

The City of Lake Forest will retain a landscape architect to develop a landscape master plan designed to provide both functional and aesthetic enhancements. Functionally, the landscaping will provide shade, help screen views to and from the site, reduce glare and reflection from built surfaces, and where necessary, control erosion. Aesthetically, the landscaping will be designed to frame views, provide visual unity with the landscape, and minimize negative visual effects of the project by softening hard surfaces and reducing contrast and scale through the introduction of color, form, and textures that provide a visual linkage to the surrounding context. Landscaping will provide a thematic identity with Aliso Creek and the natural elements within the surrounding landscape.

The landscape master plan will incorporate landscape features addressed in mitigation measures AES-1 and AES-2.

Residual Impacts

KOP C. The natural features of the project site would be permanently lost through extensive landform modification. KOP C would offer limited views of these changes because the project would be elevated above the viewer and screened by intervening topography and vegetation. Mitigation measures AES-1 and AES-2 would further screen views to the project and help blend the project with its surroundings, reducing impacts resulting from the low-pad and high-pad scenarios. These mitigation measures would involve replanting and seeding the disturbed and graded slopes with species and in density patterns that naturally occur onsite, and maintaining the existing riparian buffer that helps to screen much of the site from offsite vantage points. Revegetation would not reduce the visual effects of the light poles, whose numbers, height, and geometry would appear as contrasting features in the skyscape.

The cut slope that forms the ridgeline view from KOP C would have a significant influence on the quality of the view. It is anticipated that revegetation of the slope would take 5 years (Federal Highway Administration 2008) and until that time, impacts on visual quality would be significant. Post-construction outcomes, however, cannot be guaranteed because limiting factors associated with slope conditions, such as compacted soils, poor rooting depth, slope instability, and low water-holding capacity, can prevent successful revegetation. Impacts would be significant and unavoidable.

KOP D. Mitigation measure AES-2 would help reduce impacts on visual quality by promoting revegetation of the fill slope central to the view of the high pad scenario. Even with mitigation, the fill slope would be an imposing feature in the landscape and would eliminate the beauty of the existing physical and visual space. Impacts would be significant and unavoidable. The visual affects of mitigation measure AES-2 on the low-pad scenario would be limited from KOP D; much of the fill slope is out of view because of its lowered elevation. However, slope revegetation could help screen the playing fields and feather edges to better blend the project into the setting. As with the high pad scenario, the project would eliminate most of this area as an undisturbed natural setting and the natural features of the project site would be permanently lost through landform modifications. For both elevations, lighting features would be prominent and would intrude on skyline views. Impacts would be significant and unavoidable.

KOP E. Mitigation would be equally effective for the high-pad and low-pad scenarios. Mitigation measures AES-1, AES-2, AES-5, and AES-6 would provide thematic unity within the project, and contribute to the visual quality of the view from this KOP. Mitigation measure AES-5 would minimize visual contrast that could result from the use of mismatched colors on architectural features. The cut slope that forms the ridgeline of the project is a critical component in this setting, and highway motorists would have an extended view. The successful revegetation of the slope on the west and southwest boundary of the project would help unify the project with the adjacent landscape to promote visual coherence and would contribute to the more successful integration of the project into the landscape. Post-construction outcomes, however, cannot be guaranteed because slope conditions, such as compacted soils, poor rooting depth, slope instability, and low water-holding capacity, can limit successful revegetation.

It is anticipated that coverage of the slope would take 5 years and until that time, impacts on visual quality would be significant. Additionally, limiting factors may prevent successful revegetation. Because the visual impacts of cut slopes would occur over an extended period of years, and it cannot be guaranteed that impacts would be avoided by mitigation measure AES-2, impacts would be significant and unavoidable.

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