

3.1 Aesthetics

3.1.1 Affected Environment

This section provides information about the environmental setting for visual resources for the JOC Relocation Project, including explanations of evaluation concepts and terminology, and a discussion of the regional and local landscape character with photographs of views around the Proposed and Alternative 1 Sites. The existing visual quality of each site is evaluated through the use of key view points. The regulatory setting identifies Federal, State, regional, and local regulatory requirements related to visual resources and aesthetic considerations. The environmental consequences of the alternatives are discussed and, where applicable, mitigation measures are identified to reduce or avoid significant effects.

All exhibits referenced in this section are provided at the end of the text.

Environmental Setting

Visual Resource Evaluation Concepts and Terminology Identification of the visual resources and conditions of a project area is based on these three steps:

1. An objective inventory of the visual features or visual resources that comprise the landscape;
2. An assessment of the character and quality of the visual resources in the context of the overall character of the regional visual landscape; and
3. A determination of the importance to viewers, or sensitivity of the viewers, to the identified visual resources in the landscape.

The aesthetic value of an area is a measure of the variety and contrast of the area's visual features, the character of those features, and the scope and scale of the scene, combined with the viewer response to the views. Scenic quality is the overall impression that the viewer retains after experiencing the views. Viewer sensitivity relates to the extent of the public's concern for a particular landscape.

Visual Character Both natural and created features in a landscape contribute to its visual character. Landscape characteristics influencing visual quality include geologic, hydrologic, botanical, wildlife, recreation, and urban features. Urban features are those associated with the built environment, including landscaped areas, structures, and infrastructure such as roads, utilities, levees, dams, and water impoundments. The perception of visual character can depend on seasonal or hourly changes, as the angle of the sun, atmospheric conditions, and other factors that affect the viewshed change. Viewshed is defined as all the surface area visible from an observer's viewpoint and all surface area from which the viewpoint is seen (FHWA 1988: 27). The basic elements that comprise the visual character of landscape features are form, line, color, and texture (USFS 1995; FHWA 1988). The appearance of the landscape is described in terms of the dominance of each of these elements.

Visual Quality The approach used to assess visual quality for the JOC project was developed by the Federal Highway Administration (FHWA) and is described in *Visual Impact Assessment for Highway Projects* (1988). This approach uses the concepts of vividness, intactness, and unity, which are defined below.

- ▶ *Vividness* is the visual power or memorability of landscape components, including land form, rock form, water form, vegetation, and built forms, 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.
- ▶ *Unity* is the visual coherence and compositional harmony of the landscape considered as a whole.

According to the FHWA approach to visual analysis, visual quality is evaluated on the basis of the relative degree of each of these factors, which must be considered in combination to determine the visual quality of a particular view.

Viewer Exposure and Sensitivity Viewer sensitivity is also considered in assessing the impacts of visual change and is a function of several factors. Viewer sensitivity and concern are based on the visibility of resources in the landscape, proximity of the viewers to the visual resource, elevation of the viewers relative to the visual resource, frequency and duration of views, numbers of viewers, and types and expectations of individuals and viewer groups.

The viewer's distance from landscape elements plays an important role in the determination of an area's visual quality. Visibility and visual dominance of landscape elements depend on their placement within a viewshed. A viewshed is defined as all of the surface area visible from a particular location (e.g., an overlook) or sequence of locations (e.g., a roadway or trail) (FHWA 1988). Landscape elements are considered higher or lower in visual importance based on their proximity to the viewer. Generally, the closer a resource is to the viewer, the more dominant, and thus the more visually important it is to the viewer. In its approach to visual resources analysis, the U.S. Forest Service (Forest Service) separates landscapes into foreground, middleground, and background views (USFS 1995). In general, the foreground is characterized by clear details (within 0.25–0.5 mile of the viewer); the middleground is characterized by the loss of clear detail in a landscape, creating a uniform appearance (from the foreground to 3–5 miles in the distance); and the background extends from the middleground to the limit of human sight (Bacon 1979). In practice, middleground and background may be closer depending on topographic, vegetative, and structural limitations to sight lines.

Visual sensitivity depends on the number and type of viewers and the frequency and duration of views. Visual sensitivity is also affected by viewer activity, awareness, and expectations in combination with the number of viewers and the duration of the view. Visual sensitivity is generally higher for views that are observed by people who are driving for pleasure or engaging in recreation activities such as hiking, biking, camping

or by residents of an area. Sensitivity is lower for people engaged in work activities or commuting to work. Viewer response must be based on regional context. The same landform or landscape feature may be valued differently in different settings; landscape features common in one area would not be valued as highly as the same feature in a landscape that generally lacks similar features. For example, a small hill may have little value in a mountainous area, but may be highly valued in a landscape that has little topographic variation.

Regional Landscape Character The following discussion references photographic exhibits showing regional landscape character of both sites. (All exhibits are provided at the end of this section.) Refer to Exhibit 3.1-1 for the locations of the photographs shown in Exhibits 3.1-2a and 3.1-2b.

Proposed Action The project region is located in the eastern Sacramento Valley, where the transition from valley to foothill landscapes begins. The major geographic feature and visual resource in this area is the American River, which flows east to west from the Sierra Nevada to join the Sacramento River in the city of Sacramento. Uplands formed by the alluvial deposits of the rivers rise north and south of the American River and are dominated by the built environment, although some remnants of the prairie grassland/vernal pool and oak woodlands landscapes remain on the southern and eastern edges of Rancho Cordova and in the eastern portion of Sacramento County.

The dominant features of the built environment in the region are urban and suburban residential and commercial development; major transportation corridors, such as U.S. Highway 50 (U.S. 50); major arterial streets; and flood control facilities such as Folsom Dam and Lake, Folsom South Canal, Nimbus Dam, and Lake Natoma (see Exhibit 3.1-2a, (Regional View Point [RVP] N1 and RVP N2).

Another dominant feature of the region is the American River; the Proposed Site is located approximately 900 feet south of the river. Topography south of the river is generally level, while the landscape north of the river is marked by bluffs. Dams, reservoirs, and other flood control and water conveyance facilities dominate the immediate vicinity of the American River (Exhibit 3.1-2a, RVP N1).

Alternative 1 Commercial and residential development is concentrated along the U.S. 50 corridor and major arterial corridors. Urbanized development is continuous along these corridors with little demarcation between the cities of Folsom, Rancho Cordova, and Sacramento. Development consists mainly of low-density residential and commercial office parks (Exhibit 3.1-2b, RVP K1 and K2), with higher density development clustered near the intersection of U.S. 50 with major arterial roadways. Topography in this area limits more distant views of the region.

Local Landscape Character The following discussion references photographic exhibits showing local landscape character of both sites. Refer to Exhibit 3.1-1 for the location of the photographs shown in Exhibit 3.1-3a (Local View Point [LVP] N3 through LVP N5).

Proposed Action The Proposed Site is located on the south side of the Lower American River and downstream from Lake Natoma, Nimbus Dam, and the Hazel Avenue Bridge. Riparian vegetation grows along the river and forested areas cover the uplands adjacent to the riparian corridor (Exhibit 3.1-3a, LVP N3). This expanse of natural vegetation, confined to either side of the river, has been preserved in the American River Parkway (Parkway).

Urban development, consisting of low-density single-family residential neighborhoods, office developments, and government-operated facilities, border the Parkway area. Major arterial roadway bridges, as well as bicycle and pedestrian bridges, cross the Parkway at intervals. The topography of the Proposed Site is uneven, characterized by mounded dredge tailings and low ponded areas. The site contains scattered foothill pines, stands of live oaks, and lower growing shrubs similar in appearance to the nearby riparian area of the Parkway. The northwestern corner of the site is graded and used as an unpaved parking area. The Nimbus Fish Hatchery, California Department of Fish and Game (DFG) regional offices, Jedediah Smith Memorial Trail, and Nimbus Road are located immediately north of the Proposed Site (Exhibit 3.1-3a, LVP N4). Residences located on the bluff on the north side of the river are visible from and have views of the site and surrounding development (Exhibit 3.1-3a, LVP N4).

One- and two-story single-family residential developments border the southeastern, south, and southwestern property boundaries. The site is generally 10–15 feet higher than these homes because of the mounds of cobble (Exhibit 3.1-3a, LVP N5). Some of these homes have views from backyards and second-story windows of the site and across the site to the American River bluffs. Views from some homes are blocked or screened by vegetation and cobble mounds. The Proposed Site and American River bluffs to the north can also be viewed from homes on the southern boundary of the Parkway, west of the Proposed Site.

Alternative 1 The Alternative 1 Site is located approximately 2 miles south of the American River in an area characterized by low-density suburban development. Low-rise campus-style office parks, single-family residential development, retail commercial, and light industrial land uses dominate the area. In the immediate area of the Alternative 1 Site, office parks consisting of low-rise (one- to three-story) office buildings surrounded by landscaped parking lots are situated to the north and west of the site, single-family residential to the south, and light industrial and commercial uses to the east, on the east side of the Folsom South Canal and Sunrise Boulevard (Exhibit 3.1-3b, LVP K3). A portion of the Folsom South Canal Recreation Trail that connects to the Parkway parallels the Folsom South Canal on both sides, bordering the east side of the Alternative 1 Site (Exhibit 3.1-3b, LVP K4). The difference in elevation between the International Drive extension and the Alternative 1 Site results in limited visibility of the site for the one- and two-story residences to the south, across the road (Exhibit 3.1-3b, LVP K5).

The topography of the Alternative 1 Site is level and the site is covered with ruderal vegetation. A small stand of trees is located between White Rock Road and the northern portion of the site, adjacent to an electrical substation. Immediately south of the site, across Crawford Drive, is an office complex and parking lot occupied by Delta Dental.

Key View Points The following publicly accessible key view points were identified for each of the project sites, and representative photographs are provided for each at the end of this section. No photographs were taken from private property; however, photographs somewhat representative of views from potentially affected private properties were taken from the lower bluffs on the north side of the American River and from the southern property boundary of the Proposed Site. Visual quality for each key view point is evaluated below.

Proposed Action For the descriptions in this section, refer to Exhibit 3.1-4, which shows the location of the key view points for the Proposed Site, and Exhibit 3.1-5, which provides photographs from each of the key view points, described below.

Key View Point N1: Public View of the Proposed Site from the American River Parkway, Lower Bluff at Sailor Bar—This view point includes views to the south across the American River from trails on the lower bluff. The Proposed Site is approximately 0.4 mile distant. This view point provides a publicly accessible view located in the Parkway of the Proposed Site from the lower bluff area. The river and south bank of the river, along with structures and equipment storage at the Nimbus Fish Hatchery and the DFG regional office building, are in the foreground. Portions of the Proposed Site are visible beyond the fish hatchery and DFG offices, but most views of the site are obscured by vegetation or blocked by structures. Background views are also limited by the combination of elevated topography and mature vegetation moving away from the river toward the south.

Estimated Private View of the Proposed Site from Residences on the Bluffs (similar to Key View Point N1)—Residents on the bluffs above the north side of the American River have private views of the Proposed Site from the outdoor decks and windows of their homes, with some screening by vegetation and existing structures at the fish hatchery and DFG regional office building. No photographs are provided for private views because public access is not available. Views from homes on top of the bluff, which are approximately 0.25 mile distant from the Proposed Site, are considered similar to the Sailor Bar views (Key View Point N1). Elements of the foreground include the river and south bank of the river, and structures and equipment storage (primarily rooftop views) at the Nimbus Fish Hatchery and the DFG regional office building. Portions of the Proposed Site are visible beyond the fish hatchery and DFG office. Background views are clearer and extend toward U.S. 50 and the Sierra Nevada foothills.

Key View Point N2: Public View of the Proposed Site from the American River Parkway, Upper Parking Lot at Sailor Bar—The view from N2 is to the southeast, from the parking lot above the river. The DFG regional office building and fish hatchery buildings can be seen partially screened by vegetation.

Key View Point N3: Public View of the Proposed Site from the American River Bike Trail (Eastbound Perspective)—This view of the Proposed Site is in the direct line of sight of a bicyclist traveling east. As the viewer travels along the bike trail, the view of the site would become more peripheral and would be intermittently blocked by vegetation.

Key View Point N4: Public View of the Proposed Site from the Jedediah Smith Memorial Trail (Westbound Perspective)—This view for westbound cyclists and pedestrians on the bike trail includes the retaining wall in the foreground. Key View Point N4 shows that the view of the Proposed Site is blocked by the retaining wall. As the viewer travels along the bike trail, the site would come into view as the cyclist or pedestrian approaches Key View Point N5.

Key View Point N5: Public View of the Proposed Site from the Jedediah Smith Memorial Trail (Westbound Perspective)—This view for westbound cyclists and pedestrians on the bike trail is from the curve to the south, just prior to the DFG regional office entrance gate.

Key View Point N6: Estimated Private View of the Proposed Site from the Southern Boundary of the Site—This view of the Proposed Site from the southern property boundary represents views from adjacent yards and homes. The central portion of the project site is screened from view for many of these residences by mounded cobble and vegetation growing near the south end of the site (see Exhibit 3.1-2a, LCV N-5 for the opposite perspective). Residences on the west side of the site have a view of the open portion of the site, and residences on the southeastern boundary have a partial view of the site screened by oak trees. These residences are lower than the site, and the line of sight does not allow a view of ground level at the northern end of the site except for some properties at the southeastern end.

Key View Point N7: Public View of the Proposed Site from the Folsom Lake State Recreation Area on the East Side of Hazel Avenue—This view is from the north side of the American River for pedestrians in the Folsom Lake State Recreation Area using the connecting trail between the parking lot located above Nimbus Dam and the trail.

Anticipated Public View of the Proposed Site from the Hazel Avenue Bridge—Views of the Proposed Site from the Hazel Avenue Bridge for southbound automobile travelers would be obscured by the bike and pedestrian trail barriers and fencing on the west side of the bridge. The project site would be visible to bicyclists and pedestrians using the trail. No photographs are provided from this viewpoint because of access restrictions to the bike trail as a result of construction at the time this document was written.

Alternative 1 For the descriptions in this section, refer to Exhibit 3.1-6, which shows the location of the key view points for the Alternative 1 Site, and Exhibit 3.1-7, which provides photographs from those key view points, described below.

Key View Point K1: View East from West Side of Alternative 1 Road—The tree line in the background parallels Sunrise Boulevard. Vegetation on the site is primarily low grasses. Delta Dental offices and associated parking are on the right; commercial properties along White Rock Road are on the far left; commercial and industrial uses along Sunrise Boulevard are in the background.

Key View Point K2: View South from White Rock Road and the Folsom South Canal Recreation Trail—The water tower in the foreground is located south of the

Alternative 1 Site. The substation and vegetation in the foreground are located north of the site. Delta Dental offices and the fire station are visible in the central and right background.

Key View Point K3: View Northwest from Central Area of Alternative 1 Site—The relatively featureless, flat property of the site is clearly visible. The fire station is located west of Kilgore Road in the background.

Key View Point K4: View North from Central Area of Alternative 1 Site—Commercial buildings and shopping areas are visible in the background, north of White Rock Road and west of Kilgore Road, beyond the flat grasses of the site.

Visual Quality Evaluation In this section, the Proposed and Alternative 1 Sites are assigned a visual quality evaluation (VQE) rating based on analysis of the relative degree of each of the three FHWA (1988) concepts—vividness, intactness, and unity—from each of the key view points.

Proposed Action Exhibits 3.1-3 and 3.1-4 present the location of the key view points for the Proposed Site and photographs from each of the key view points, respectively.

Key View Point N1: American River Parkway, Lower Bluff at Sailor Bar

Vividness: moderate. Foreground views are of the river and of natural vegetation on the bluffs (oaks, grass) and along the river and of the DFG regional office and Nimbus Fish Hatchery; views of the Proposed Site are screened by trees. The primary scenic attribute in the view is the river. The tree canopy dominates parts of the foreground and middleground views and adds texture and seasonal color to the adjacent urban setting.

Background views are dominated by the tree canopy, with taller office buildings visible among the trees.

Intactness: low to moderate. Elements encroaching on the views include fish hatchery structures, DFG regional offices, an equipment storage area, and cars in parking lots in the foreground. The river embankment has a somewhat unnatural appearance, being steep sided and sparsely vegetated.

Unity: low. Views lack coherence because of structures in the foreground. Vertical elements, paving, and light-colored buildings contrast with darker vegetation, thus accentuating the unnatural forms of the structures, which do not create a cohesive pattern.

VQE rating for Sailor Bar views of the Proposed Site: Low.

*Private Views from the Bluff on North Side of the American River
(similar to Key View Point N1)*

Vividness: moderate. Views are expansive, providing scenic vistas of Nimbus Dam and the American River to the east, the American River and Parkway areas to the south and west, and the urbanized areas to the south. The DFG regional office and Nimbus Fish Hatchery are viewed from a higher angle, with mostly roofs and parking areas visible. Distant views of the Sierra Nevada range can be seen in clear weather. These views have

more interest than views from the lower elevation on the bluff and are somewhat unique for the Sacramento area.

Intactness: moderate. Encroaching elements include fish hatchery structures, DFG regional offices, an equipment storage area, and cars in parking lots in foreground views. Urban development (U.S. 50, Hazel Avenue and bridge, buildings, transmission lines) detracts in the middleground and background of the views; however, the elevated view encompasses distant views of the Sierra Nevada and foothills.

Unity: low. Built features (fish hatchery, DFG regional offices, roadways, bridge, freeway, levees) and natural features (river, riparian vegetation) do not combine to form a strong cohesive pattern; however, elements within the view possess scenic integrity (distant views of urban tree canopy, interspersed with taller structures and the Sierra Nevada in the background, frame the views).

VQE rating for private views of the Proposed Site from the bluffs: moderate.

Key View Point N2: American River Parkway, Upper Parking Lot at Sailor Bar
Vividness: moderate. Foreground views include upland and riparian vegetation on both banks of the river; the Proposed Site and adjacent fish hatchery and DFG regional office building are partially screened by the vegetation. Middleground and background views of the DFG regional office are mostly blocked by river side vegetation. The scenic attributes of the view are trees and shrubs in the foreground.

Intactness: moderate. Encroaching elements are limited to post and cable fencing in the foreground, with fleeting views of urban development in the middleground and background.

Unity: moderate. The DFG regional office buildings are light in color and stand out against the darker vegetation in the middleground and foreground. The structure of vegetation blends to make a harmonious visual experience.

VQE rating for Sailor Bar views of the Proposed Site: moderate.

Key View Point N3: View of the Proposed Site from the Jedediah Smith Memorial Trail—Eastbound Perspective
Vividness: moderate. Foreground views include the gravel parking lot, which on a weekend with good weather is occupied by a number of vehicles. Stands of trees on the western boundary of the Proposed Site enhance the view. Farther along the bike trail, vegetation blocks views. However, these views possess no exceptional or unique features.

Intactness: low to moderate. Encroaching elements include a light-colored gravel parking lot with post and cable barrier, a sign, and a garbage barrel in foreground. Cars parked in the lot would further detract from the intactness of the view.

Unity: low. Views lack coherence because of the parking lot and the sign in the foreground. The light-colored gravel stands out from the surrounding darker colored vegetation. The bike trail curves to the left, which tends to draw the eye away from the

Proposed Site; however, the parking lot also tends to draw attention, creating competing elements in the same view.

VQE rating for eastbound bike trail views of the Proposed Site: low.

Key View Point N4: View of the Proposed Site from the Jedediah Smith Memorial Trail—Westbound Perspective

Vividness: moderate. The foreground view is dominated by the rock retaining wall (Exhibit 3.1-5, VP N4) and trail. Stands of trees on the northeastern side of the Proposed Site can be seen above the retaining wall. The retaining wall and mounded river cobbles give the view color and texture. The retaining walls and river cobbles are unique features in views within the Parkway.

Intactness: moderate. Encroaching elements include posts and utility poles projecting above the river's cobble slope.

Unity: low. The retaining wall and bike trail in the foreground follow parallel forms that draw the eye; however, the posts projecting above the river cobbles and the tops of trees are contrasting forms that are not in harmony with the foreground.

VQE rating for westbound bike trail views of the Proposed Site: moderate.

Key View Point N5: View of the Proposed Site from the Jedediah Smith Memorial Trail—Westbound Perspective

Vividness: low. The foreground and middleground of the view are dominated by the bike trail and DFG entry gate, roadway, bike trail stop sign, and yellow posts. Vehicles in the parking lot located on the Proposed Site are visible in the middleground as well.

Intactness: low. Encroaching elements include gate, posts, and stop sign in the foreground.

Unity: low. The yellow gate and posts are contrasting forms in opposition to the curvature of the bicycle trail. The posts and gate are contrasting colors against dark vegetation that do not create a unified whole.

VQE rating for westbound bike trail views of the Proposed Site: low.

Key View Point N6: View of the Proposed Site from the Southern Boundary of the Site

Views of the Proposed Site from the southern property boundary represent views from adjacent yards and homes.

Vividness: moderate. This view provides foreground views of seasonally changing vegetation, and middleground views provide somewhat scenic vistas of the bluffs on the north side of the American River. The bluffs become more visible in late fall and winter when trees are leafless. Views of the central portion of the site are blocked by the topography and vegetation.

Intactness: moderate. Views of the bluffs are partially screened by trees; however, the foreground view is free of intrusive elements and appears as a natural, intact setting.

Unity: moderate. The foreground view of natural vegetation harmonizes with middleground views of the bluffs with trees visible on the skyline.

VQE rating for private views of the Proposed Site from site boundaries: moderate.

Key View Point N7: View of the Proposed Site from the Folsom Lake State Recreation Area on the East Side of Hazel Avenue

Vividness: moderate. The foreground view is dominated by the Hazel Avenue Bridge and fish hatchery located on the south side of the river, to the west of the bridge. However, the view is expansive and includes scenic vistas downstream of the bridge and of the urban area beyond. The tree canopy dominates the middleground and background of the views.

Intactness: low. The view of the American River is interrupted by the linear concrete form of the Hazel Avenue Bridge in the foreground. The fish hatchery beyond the bridge encroaches on the view, as well.

Unity: low. The Hazel Avenue Bridge bisects the view, interrupting the somewhat natural line of the river. The fish hatchery buildings are light in color and stand out against the darker vegetation in the middleground and foreground. Also, the fish hatchery holding tanks are screened with dark material that leaves a rectangular shape devoid of vegetation, reducing the cohesiveness of the view.

VQE rating for westbound bike trail views of the Proposed Site: low.

Alternative 1 Refer to Exhibits 3.1-6 and 3.1-7 for the location of the key view points for the Alternative 1 Site and photographs from each of the key view points, respectively.

Key View Point K1: View East from West Side of Kilgore Road

Vividness: low. The foreground view is dominated by the vacant land adjacent to and within the Alternative 1 Site. The site has been leveled, is sparsely covered with weedy vegetation, and possesses no unique or memorable features.

Intactness: low. The site is open without significant encroaching elements in views to the east. However, adjacent properties are developed with structures that encroach on the foreground views of the Alternative 1 Site to the southeast.

Unity: low. Views of the Alternative 1 Site do not present the viewer with any cohesive visual patterns. The line of trees along Sunrise Boulevard provides the only visual interest in these views.

VQE rating for the eastern view of the Alternative 1 Site from the west side of Kilgore Road: low.

Key View Point K2: View to the South from White Rock Road and the Folsom South Canal Recreation Trail

Vividness: low. The foreground view is dominated by a small stand of trees and an electrical substation near the edge of White Rock Road. The water tower located to the south of the Alternative 1 Site provides the only point of interest in the middle distance; otherwise, the view possesses no unique or memorable features.

Intactness: low. Encroaching elements in the view include an electrical substation adjacent to the bike trail, fencing, a guard rail on the edge of the road, and utility poles in the middleground.

Unity: low. Views of the Alternative 1 Site do not present the viewer with any cohesive visual patterns. The line of trees along Sunrise Boulevard provides the only visual interest in these views.

VQE rating for the southern view of the Alternative 1 Site from White Rock Road and the Folsom South Canal Recreation Trail: low.

Key View Point K3: View Northwest from Central Area of Alternative 1 Site

Vividness: low. The foreground view is dominated by the vacant land within the Alternative 1 Site. The site has been leveled, is sparsely covered with weedy vegetation, and possesses no unique or memorable features.

Intactness: low. The site is open with encroaching elements (urban development) in view to the northwest and west.

Unity: low. Views of the Alternative 1 Site do not present the viewer with any cohesive visual patterns.

VQE rating for the northwestern view of the Alternative 1 Site from the central area of the site: low.

Key View Point K4: View North from Central Area of Alternative 1 Site

Vividness: low. The foreground view is dominated by the vacant land within the Alternative 1 Site. The site has been leveled, is sparsely covered with weedy vegetation, and possesses no unique or memorable features.

Intactness: low. Commercial buildings and shopping areas are visible in the background, north of White Rock Road and west of Kilgore Road, beyond the flat grasses of the site.

Unity: low. Views of the Alternative 1 Site do not present the viewer with any cohesive visual patterns.

VQE rating for the northern view of the Alternative 1 Site from the central area of the site: low.

Viewer Exposure and Sensitivity

Proposed Action For view points located within the American River Parkway, along the Jedediah Smith Memorial Trail, and within the Folsom Lake State Recreation Area, viewer sensitivity is considered high. People engaged in recreational activities generally have heightened awareness of their surroundings. People frequenting the Parkway's trails are familiar with the scenic resources in the Parkway and are generally seeking an experience in a natural setting.

Viewer sensitivity for residents of homes along the bluffs north of the American River is also considered high because of residents' concern for and awareness of their surroundings and because of the extended duration of views. Likewise, residents living adjacent to the south side of the Proposed Site have extended views across the site and are considered to have increased sensitivity to visual change in foreground views.

Employees working at the DFG regional office and fish hatchery may also have high sensitivity to visual change because of their familiarity with the site. Motorists traveling on the Hazel Avenue Bridge may have high sensitivity to visual change because of their familiarity with the natural surroundings; however, views would be limited by their short duration and the focus on driving. Viewer sensitivity is considered high for all groups viewing the Proposed Site.

Alternative 1 Viewers of the Alternative 1 Site include people employed in the area at offices and residents traveling to and from homes to the south of the project site. Viewer sensitivity is considered low for these groups because they are engaged in driving and have a focus on work-related or home-related activities.

Bicyclists on the Folsom South Canal Recreation Trail have extended exposure to views of the Alternative 1 Site; however, sensitivity for this group is also considered moderate to low because there are few scenic resources on the site and bike trail users would not have expectations of experiencing high-quality views in this location.

Regulatory Setting

Federal Plans, Policies, Regulations, and Laws The following Federal laws related to aesthetic resources are relevant to the project and are described in detail in Section 5.6, "Compliance with Related Laws, Rules, Regulations, and Executive Orders":

- ▶ National Wild and Scenic Rivers Act.

State Plans, Policies, Regulations, and Laws

California Wild and Scenic Rivers Act This act was passed in 1972 to preserve designated rivers possessing extraordinary scenic, recreation, fishery, or wildlife values (PRC Section 5093.50 et seq.). The Lower American River is designated as a "Recreational" river under this act. The Proposed Site is near this stretch of the American River.

California Scenic Highway Program The California Department of Transportation (Caltrans) manages the California Scenic Highway Program. The goal of the program is to preserve and protect scenic highway corridors from changes that would affect the

aesthetic value of the land adjacent to designated highways. No State-designated scenic highways are near either the Proposed or Alternative 1 Sites (Caltrans 2007).

Regional and Local Plans, Policies, Regulations, and Ordinances The JOC Relocation Project is jointly proposed by Reclamation, a Federal agency, and DWR, a State agency. The Proposed Site is Federal property owned by Reclamation. A Federal agency operating on Federal land is not required to comply with regional or local plans, policies, regulations, or ordinances. However, a Federal agency normally will conform with local regulations and State laws that do not interfere with the agency’s ability to “carry out the purposes of the government,” such as building, health, and safety codes (*Fort Leavenworth R.R. v. Lowe*, 114 U.S. 525 [1885]).

Activities at the Proposed Site would not be required to comply with regional or local regulations, but Reclamation has committed to a “good neighbor” policy and would conform with those regulations to the extent that such compliance would not conflict with or hinder the mission and purposes of the agency or the departments located at the site. Activities at the Alternative 1 Site would take place on private property and would require full compliance with all regional and local regulations.

Sacramento County General Plan The following policies from the Land Use Element of the *1993 County of Sacramento General Plan* (County General Plan) (Sacramento County 1993:64) related to visual resources are relevant to the project:

- ▶ **Policy LU-22:** Exterior building materials on nonresidential structures shall be composed of a minimum of 50 percent low-reflectance, non-polished finishes.
- ▶ **Policy LU-23:** Bare metallic surfaces such as pipes, flashing, vents, and light standards on new construction shall be painted so as to minimize reflectance.
- ▶ **Policy LU-24:** Require overhead light fixtures to be shaded and directed away from adjacent residential areas.
- ▶ **Policy LU-25:** Require exterior lighting to be low-intensity and only used where necessary for safety and security purposes.

Sacramento County General Plan Update Sacramento County is in the process of preparing a draft *Sacramento County General Plan Update* (Sacramento County 2010) and environmental impact report (EIR) to plan for growth in the period 2010–2030. Until that EIR has been certified and the update has been adopted by the Sacramento County Board of Supervisors, the 1993 general plan remains in effect. Following receipt of a third-party review in December 2010, hearings on the general plan began in spring 2011 and are ongoing.

Sacramento County American River Parkway Plan 2008 The *Sacramento County American River Parkway Plan 2008* (Parkway Plan) provides a guide to land use decisions affecting the Parkway, specifically addressing its preservation, use, development, and administration. The purpose of the Parkway Plan is to ensure preservation of the naturalistic environment while providing limited developments to

Joint Operations Center Relocation Project

facilitate human enjoyment of the Parkway and to act as the management plan for the Federal and State Wild and Scenic Rivers Acts. The Parkway Plan is a policy document for the Parkway, which is an adopted element of the County General Plan, and is referenced in the general plans for the cities of Rancho Cordova and Sacramento. The locally adopted Parkway Plan is submitted to the State legislature for adoption through the Urban American River Parkway Preservation Act (PRC Section 5840) (Sacramento County 2008:1-9).

The Parkway Plan's land use policies regulate uses within the Parkway, including the location and type of activities and the facilities and structures associated with those uses. For uses adjacent to the Parkway, the Parkway Plan provides policy guidance for jurisdictions regulating uses outside the Parkway. The purpose of the policy guidance is to ensure that adjacent uses are sensitive to the Parkway's naturalistic setting and scenic values, protect the Parkway from negative visual impacts, and encourage a positive relationship with adjacent communities.

The Parkway Plan has several distinct planning areas, each having unique features and for which area plans are adopted. The Parkway area adjacent to the Proposed Site is within the Upper Sunrise Area Plan and is designated as a "Protected Area" in the plan.

Land Use Policies 7.23 and 7.24 of the Parkway Plan, described below, address visual impacts from uses and facilities adjacent to the Parkway.

- ▶ **Policy 7.23:** Levees, landscaping, or other man-made or natural buffers should be used to separate, buffer or screen the Parkway visually from adjoining land uses, unless the adjacent land uses are indistinguishable from the Parkway.
- ▶ **Policy 7.24:** In order to minimize adverse visual impacts on the aesthetic resources of the Parkway, local jurisdictions shall regulate adjacent development visible from the Parkway. These local regulations shall take into account the extent to which the development is visible from the Parkway. Regulations may include tools to address design, color, texture and scale, such as:
 - Setbacks or buffers between the Parkway and the development.
 - Structures to be stepped away from the Parkway or limits on building scale.
 - Screening of structures visible from the Parkway with landscaping, preferably native vegetation or other naturally occurring features.
 - Use of colors and materials including non-reflective surfaces, amount of glass, and requiring medium to dark earth tone colors that blend with the colors of surrounding vegetation, particularly in sensitive bluff or river's edge locations.
 - Guidelines to discourage intrusive lighting and commercial advertising.

The Proposed Site is located adjacent to but outside of the Parkway and is on Federal land not subject to local land use regulations. However, it is the intent of Reclamation

and DWR to maintain consistency with Parkway policies relevant to adjacent land uses to the extent feasible.

3.1.2 Environmental Consequences and Mitigation Measures

Methods

Using the criteria for determining significance described above, the following procedures were employed in assessing the visual effects of the project:

- ▶ direct field observations from publicly accessible vantage points (roadways, Parkway, trails) (conducted on December 21 and 29, 2010);
- ▶ photographic documentation of the sites and surrounding areas (conducted on December 21 and 29, 2010);
- ▶ review of project plans; and
- ▶ review of Federal, State, and local plans and regulations related to visual resources.

Assumptions

Design concepts for the JOC Relocation Project are conceptual at this time and would be finalized after a site is selected and a contractor has been hired by Reclamation and DWR to design and build the facility. Two design options are being evaluated at the Proposed Site: (1) a “campus-style” option with two two-story buildings (each 35 feet tall, to house Reclamation and DWR/NWS employees), and two one-story buildings (each 25 feet tall, to accommodate the two agencies’ Project Operation Centers and DWR’s Flood Operations Center) and (2) an “office-style” option with one three-story building (approximately 50 feet tall) and two one-story buildings (each 25 feet tall). At the Alternative 1 Site, only the campus-style option is being evaluated.

As described in the project description for the JOC Relocation Project, DWR is required to obtain LEED Silver certification for new buildings and to comply with the California Green Building Code, including the following lighting measures:

Division A5.7 – NONRESIDENTIAL CHECKLISTS

Mandatory

5.106.8 Light pollution reduction. Comply with lighting power requirements in the California Energy Code and design interior and exterior lighting such that zero direct-beam illumination leaves the building site. Meet or exceed exterior light levels and uniformity ratios for lighting zones 1–4 as defined in Chapter 10 of the California Administrative Code, using the following strategies:

1. Shield all exterior luminaires or use cutoff luminaires [defined in Section 5.102 Definitions as “Luminaires whose light distribution is such that the candela per 1,000 lamp lumens does not numerically

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exceed 25 (2.5 percent) at an angle of 90° above nadir, and 100 (10 percent) at a vertical angle of 80° above nadir.”

2. Contain interior lighting within each source.
3. Allow no more than .01 horizontal foot candle 15 ft beyond the site.
4. Contain all exterior lighting within property boundaries.

(Exceptions are identified in Part 2, Chapter 12, Section 1205.6 for campus lighting requirements for parking facilities and walkways.)

This visual analysis assumes that these requirements would be implemented as part of the JOC Relocation Project at either site.

Reclamation and DWR have committed to a “good neighbor” policy at the Proposed Site, if it is selected, regarding compliance with regional and local regulations. This includes consideration of means to minimize adverse visual impacts on the adjacent Parkway properties, as described in Land Use Policy 7.24 of the Parkway Plan. This visual analysis assumes that these requirements would be considered in design of the JOC facility at the Proposed Site.

The JOC Relocation Project may include construction and use of a communications antenna as part of the facility, either on or near the facility. The radio antenna is anticipated to be 50–130 feet above ground level and may be mounted either on the rooftop of the new buildings or on a new communication tower located at the JOC site. The antenna and tower, if constructed, may instead be replaced by other communications features (such as fiber optic cable) or equipment (such as an antenna already available at the Nimbus Dam).

Criteria for Determining Significance of Effects

Determinations of significance in this EIS/EIR are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. These determinations are provided pursuant to CEQA. The Proposed Action and alternatives under consideration would be considered to have a significant impact related to aesthetics and visual resources if they would:

- ▶ have a substantial adverse effect on a scenic vista;
- ▶ substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway;
- ▶ substantially degrade the existing visual character or quality of the site and its surroundings; or
- ▶ create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

According to professional standards, a project may also be considered to have a significant impact if it would conflict with local guidelines or goals related to visual quality.

Issues Not Discussed Further in This Draft EIS/EIR

State Scenic Highways—No areas designated by Caltrans as State scenic highways are in or near the Proposed or Alternative 1 Sites; therefore, no impacts would occur as a result of damage to scenic resources within a State scenic highway. This topic is not discussed further in this EIS/EIR.

Impact Analysis

See Table 3.0-2 for a summary of impacts and mitigation measures for Alternative 2 (incorporated by reference from the Mather Field Specific Plan FEIR).

Impact 3.1-1: Potential Substantial Adverse Effect on a Scenic Vista

No-Action

Under the No-Action Alternative, no construction activities would occur; therefore, the project would not have an adverse effect on scenic vistas. **No direct or indirect impact** would occur.

Proposed Action

The Proposed Site is within scenic vistas as viewed from the public areas on the bluffs on the north side of the American River; from public areas on the bluff on the north side of the Nimbus Dam area in the Folsom Lake State Recreation Area east of Hazel Avenue; and from the Parkway, Jedediah Smith Memorial Trail, and the American River. These views are described in Key View Points N1 (bluffs); N2, N3, N4, and N5 (Parkway, trail, and river); and N7 (recreation area). These views include a mix of natural and built features, including the American River, Lake Natoma, and riparian areas alongside the river in the foreground; DFG regional office, Nimbus Fish Hatchery, and Hazel Avenue in the middleground; and multistory commercial buildings, U.S. 50, and the Sierra Nevada in the background. The visual quality of views of the Proposed Site is moderate from the bluffs; moderate to low from the Parkway, trail, and river; and low from the recreation area.

Design concepts being considered for the JOC include either one three-story building (50 feet tall) with two single-story buildings (each 25 feet tall) or a campus option with two two-story buildings (each 35 feet tall) and two single-story buildings (each 25 feet tall). With either option, the buildings would be placed on the western side of the property and lighted parking lots would be located throughout the site. Parking would be set back from the southern edge of the Proposed Site; mounds of cobble and oak trees would be left in place in the southern portion of the site. Security fencing would be placed around the occupied portion of the site, and a radio antenna 50–130 feet above ground level may be included on the project site.

Two- or three-story buildings would be visible from view points on the north side of the river. The campus option with three buildings would occupy a slightly larger area and would be more visible to viewers on the bluffs on the north side of the American River than would the campus option. These viewers include residents on the bluffs and visitors to the Folsom Lake State Recreation Area.

The nearby fish hatchery buildings and DFG regional offices are single-story structures and are located at lower elevations along the river than the Proposed Site; these facilities are clearly visible to viewers from the bluffs and Folsom Lake State Recreation Area in the area surrounding the Proposed Site. The three-story option would be more prominent than the campus option in views of the site from the adjacent Parkway, but the difference in height would not substantially modify views from the bluffs on the north side of the American River.

Reclamation and DWR have committed to designing the facilities to minimize visual effects on the Parkway to the extent feasible, based on Land Use Policy 7.4 of the Parkway Plan. Policies may include tools to address design, color, texture, and scale, such as:

- ▶ setbacks or buffers between the Parkway and the development;
- ▶ structures stepped away from the Parkway or limits on building scale;
- ▶ screened structures visible from the Parkway with landscaping, preferably native vegetation or other naturally occurring features;
- ▶ colors and materials that blend with the colors of surrounding vegetation, particularly in sensitive bluff or river's edge locations (e.g., nonreflective surfaces, medium to dark earth tones); and
- ▶ guidelines to discourage intrusive lighting and commercial advertising.

These criteria focus on reducing adverse effects on views from the Parkway and would also reduce intrusion in views from the bluffs and recreation area. With implementation of these design considerations, construction of the JOC at the Proposed Site would not substantially degrade the visual quality of views from or of the Parkway and would not have a substantial adverse effect on scenic vistas from the American River bluffs, the recreation area, or the Parkway. Therefore, this **direct** impact would be **less than significant**. **No indirect impact** would occur.

Alternative 1 Site

The Alternative 1 Site and vicinity does not provide any scenic vistas. The Alternative 1 Site provides visual open space in the form of a vacant commercial lot surrounded by residential and commercial development. The visual quality of views of the Alternative 1 Site is low and lacking in any unique visual features. Views from the Folsom South Canal Recreation Trail on the east side of the Alternative 1 Site do not include scenic vistas. Construction and operation of two-

story (30-foot-tall) buildings, a parking area, and possibly a radio antenna would not have a substantial adverse effect on scenic vistas because no viewers in the area have scenic views of or near the Alternative 1 Site. Therefore, the **direct** impact would be **less than significant** at this site. **No indirect impact** would occur.

Mitigation Measure: No mitigation is required.

Impact 3.1-2: Potential to Substantially Degrade the Existing Visual Character or Quality of the Site and Its Surroundings

No-Action

Under the No-Action Alternative, no construction activities would occur; therefore, the project would not have an adverse effect on the visual character or quality of the site or its surroundings. **No direct or indirect impact** would occur.

Proposed Action

As described in Impact 3.1-1, the Proposed Site is located adjacent to the Jedediah Smith Memorial Trail and is visible to varying degrees (often partially shielded by vegetation, topography, or retaining walls) to recreational users of the trail, the Parkway, and the American River (see Key View Points N3, N4, and N5). Homes along the southern and southwestern boundaries of the Proposed Site (Key View Point N6) have foreground views of the site; depending on the elevation, some of these views include the DFG regional office and riverside vegetation in the middleground, while views of the central portion of the Proposed Site from other homes are blocked by oak trees (up to 40 feet above ground level), vegetation, and mounds of cobble (up to 20 feet above ground level) on the south side of the Proposed Site. Homes and recreational users of trails on the bluffs have middleground views of the Proposed Site and surrounding areas.

Scenic resources on the Proposed Site and adjacent Parkway lands consist of the natural vegetation, including oak trees and foothill pine trees, many of which would be retained with either proposed site plan. Mounds of cobble also provide viewing interest. The adjacent DFG regional office and fish hatchery are developed uses in the area; the offices are one-story structures and the fish hatchery comprises a collection of buildings, large concrete tanks, and screening structures. Construction of the JOC would require removing some vegetation and would change the visual character of the Proposed Site and surroundings by placing buildings of one story (25 feet tall) and two stories (35 feet tall) or three stories (50 feet tall) on the site, along with a parking area, perimeter fencing, and possibly a radio antenna 50–130 feet above ground level.

The Proposed Site, while not a part of the Parkway, is adjacent to and visually similar to the adjoining Parkway lands; it is also adjacent to developed office uses that operate in the area without substantially impeding use of the Parkway, trail, and recreational uses. Reclamation and DWR have committed to considering Land Use policy 7.24 of the Parkway Plan in designing facilities at the Proposed

Site, if it is selected. This policy includes setbacks or buffers from the Parkway, limits on building scale, use of landscape screening, and use of nonintrusive materials and colors. In addition, both site plans for the Proposed Site avoid disturbing the cobble, trees, and vegetation on the south end of the site, allowing the natural screening to remain. As described in Chapter 2.0, “Alternatives,” a landscape design plan would be prepared and implemented at the site to provide vegetative screening and natural materials that would soften the appearance of the structures and screen views of the buildings and parking lots.

Construction of the two- or three-story JOC facilities and parking lot at the Proposed Site would convert approximately 16 acres of open space and replace it with Reclamation and DWR facilities. The site is immediately adjacent to other office and industrial-style facilities, however, and the JOC would be designed and constructed with screening and natural materials to the extent possible. This **direct** impact would be **less than significant**. **No indirect impact** would occur.

Alternative 1 Site

The visual quality and character of the Alternative 1 Site is considered low. Placement of the JOC on the Alternative 1 Site would not substantially degrade the visual character of the site or surrounding area, which is characterized by office parks and some residential areas. The site presently is covered in weedy vegetation and is lacking in unique visual features. Development of the site would remove open space; however, in keeping with the surrounding area, the visual character of the area would not be degraded by construction and operation of two-story office buildings, a large parking area, and a communications antenna. The direct impact would be **less than significant**. **No indirect impact** would occur.

Mitigation Measure: No mitigation is required.

Impact 3.1-3: Potential New Source of Light or Glare That Would Adversely Affect Daytime or Nighttime Views in the Area

No-Action

Under the No-Action Alternative, no construction activities would occur; therefore, the project would not create new sources of light or glare. **No direct or indirect impact** would occur.

Proposed Action

The JOC would create daytime glare from parked cars and office windows that would be visible to recreationists using the Parkway, river, and trail, and which may be visible from adjacent residences to the south and bluff residents to the north. The intervening trees and cobble berms that would be retained with either site plan, however, would partially shield parking lot views from residences, reducing the effect of daytime glare. Exterior nighttime lighting for building security and parking lots would affect nighttime views for adjacent residents to the south of the Proposed Site and for residents to the north on the bluffs. Compliance with California Green Building Code Section 5.106.8 policies to

allow no more than 0.01 horizontal foot candle of light 15 feet beyond the site and to contain all exterior lighting within property boundaries would limit spillover light and reduce nighttime glare. The possible inclusion of a communications antenna 50–130 feet above ground level would require red, blinking aircraft safety lighting; however, these lights are elevated above the typical view area for residents, are common on tall buildings and structures in the area, and do not contribute substantial light to the nighttime sky. This **direct** impact would be **less than significant**. **No indirect impact** would occur.

Alternative 1 Site

Placement of the JOC on the Alternative 1 Site would introduce a new source of light and glare to the area; however, no substantial adverse effects would be anticipated since similar office parks are located in the surrounding area (Exhibit 3.1-2b RVP K1, Exhibit 3.1-6). The nearby residential areas are separated from the Alternative 1 Site by the Folsom South Canal or International Drive (Exhibit 3.1-6), and the intervening distance and street lighting would diminish any daytime glare or nighttime light spillover. The **direct** impact would be **less than significant**. **No indirect impact** would occur.

Mitigation Measure: No mitigation is required.

Residual Significant Impacts

All impacts related to aesthetics would be less than significant; therefore, no residual significant impacts would occur.

3.1.3 Cumulative Impacts

The geographic scope for analyzing the cumulative effects of visual resources is defined by the viewsheds that encompass the Proposed Site and the Alternative 1 Site, as well as their surrounding visual context. For the Proposed Site, the viewsheds are comprised of all surface areas visible from the Sailor Bar area and bluffs north of the American River (Exhibit 3.1-4, VP N1, and VP N7), from the south boundary of the site (Exhibit 3.1-4, VP N6), and from within the American River Parkway (Exhibit 3.1-4, VP N3, and N5). Visual resources within the viewshed in which the Proposed Site includes the American River and adjacent Parkway with its natural vegetation, the tree canopy, and scenic views of the Sierra Nevada foothills and mountains in the background.

Ongoing urbanization in the adjoining and nearby cities of Rancho Cordova and Folsom, and community of Fair Oaks, has resulted in a significant cumulative impact on visual resources as open space and natural landscapes have been converted to urban and suburban landscapes, and as areas adjacent to the Parkway have developed, resulting in encroachment on views of the American River and Parkway. In the immediate vicinity of the Proposed Site, the Hazel Avenue Bridge widening, the DFG regional offices, Nimbus Fish Hatchery, and residential and commercial development south of the site are among the past and present development and infrastructure projects (e.g., Hazel Avenue widening), that have contributed to the significant cumulative impact to the visual environment in the viewsheds in which the Proposed Site is located.

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The Proposed Site is an undeveloped property located adjacent to the Parkway in the Upper Sunrise Plan and Sailor Bar Plan areas. However, the property is also immediately adjacent to other developed properties and would be consistent in appearance with those uses. Structures placed on the Proposed Site would be visible from the Parkway and in views of the Parkway from adjacent areas, through the screening of existing vegetation. The structures would comply to the extent feasible with Parkway Plan policies for adjacent uses, including implementing a landscaping plan to provide vegetative screening, use of natural materials, and compliance with California Green Building Code Section 5.106.8 policies to allow no more than 0.01 horizontal foot candle of light 15 feet beyond the site and to contain all exterior lighting within property boundaries. The additional structures would not detract from the visitor experience and would not detract from views of the Parkway from viewpoints outside of the Parkway, and would not result in substantial new sources of light, glare, or skyglow. Therefore, developing the JOC on the Proposed Site would not make a cumulatively considerable incremental contribution to a significant cumulative impact to visual resources.

Viewsheds for the Alternative 1 Site comprise all surface areas visible from adjacent roads and properties (Exhibit 3.1-7, VP K1, and VP K2). Visual resources within the viewshed in which the Alternative 1 Site is located consist of landscaped office parks and landscaped parking lots. As noted above, the ongoing urbanization in the city of Rancho Cordova has resulted in significant cumulative impacts to visual resources by the elimination of natural landscapes. Visual resources presented by the Alternative 1 Site are limited because it is a disturbed site and retains little in the way of natural features, and no scenic views are available within the viewshed. Compliance with California Green Building Code Section 5.106.8 policies to allow no more than 0.01 horizontal foot candle of light 15 feet beyond the site and to contain all exterior lighting within property boundaries would reduce day and nighttime glare and skyglow effects. Therefore, developing the JOC on the Alternative 1 Site would not make a cumulatively considerable incremental contribution to a significant cumulative impact to visual resources.

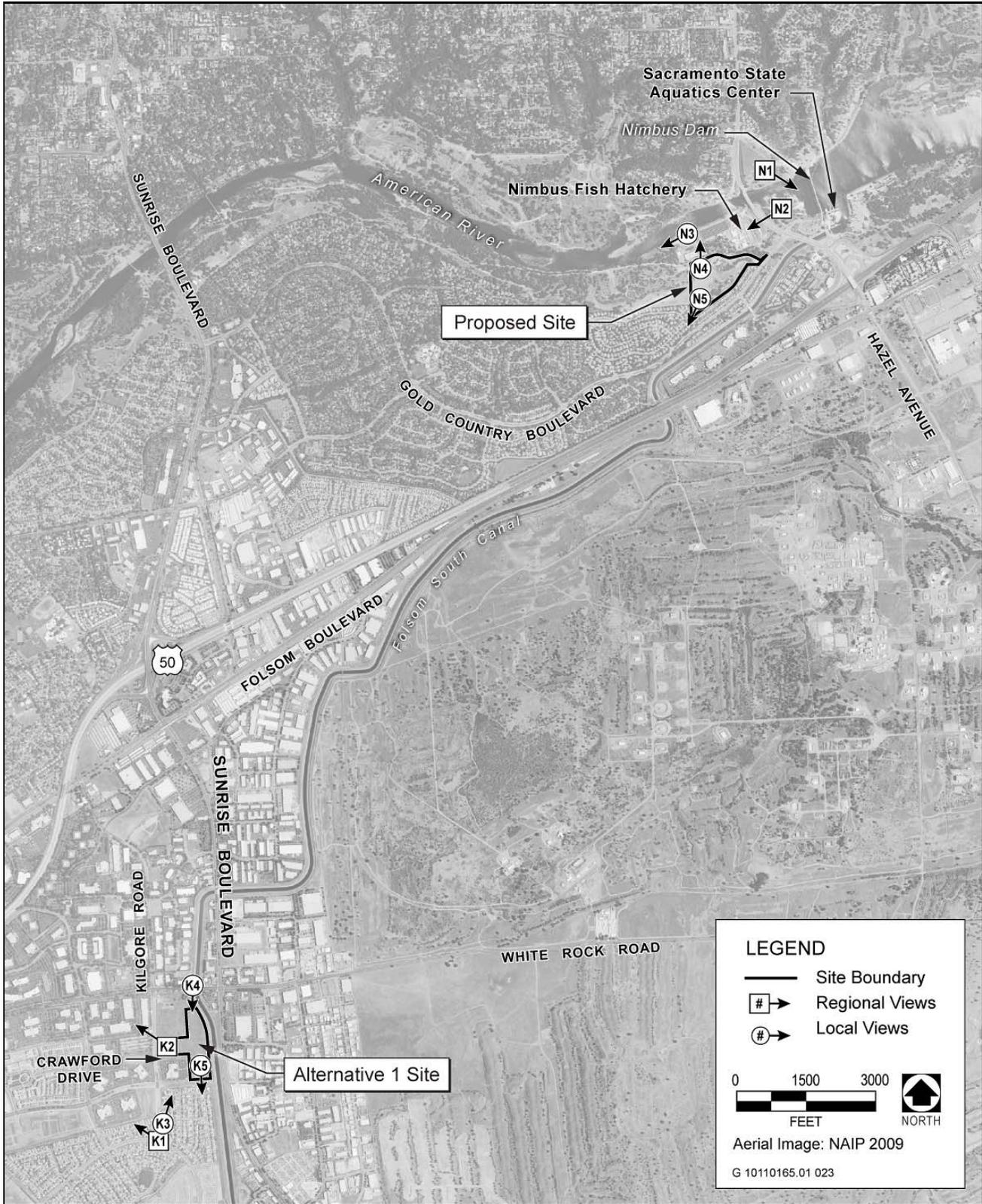


Exhibit 3.1-1. Locations of Photographs of Regional and Local Landscape Character

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RVP N1: View to the southeast from Folsom Lake State Recreation Area of Nimbus Dam, Lake Natoma, and the U.S. 50 corridor with the Sierra Nevada foothills in the background. (Photo taken by AECOM in 2010.)



RVP N2: View to the southwest from Folsom Lake State Recreation Area of the Hazel Avenue Bridge, Nimbus Fish Hatchery, and DFG regional office. The Proposed Site is in middleground. (Photo taken by AECOM in 2010.)

Exhibit 3.1-2a. Regional Landscape Character at Proposed Site



RVP K1: View of typical office park development and vacant commercial lot in the city of Rancho Cordova. (Photo taken by AECOM in 2010.)



RVP K2: View of parking lot, fire station, and warehouse across Kilgore Road from the Alternative 1 Site. (Photo taken by AECOM in 2010.)

Exhibit 3.1-2b. Regional Landscape Character at Alternative 1 Site

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LVP N3: View to the west of American River Parkway downstream from the Nimbus Fish Hatchery. (Photo taken by AECOM in 2010.)



LVP N4: View from Proposed Site showing DFG regional office, entrance to DFG parking lot, Nimbus Road, and Jedediah Smith Memorial Trail. Residences on bluff are on the north side of the American River. (Photo taken by AECOM in 2010.)

Exhibit 3.1-3a. Local Landscape Character Surrounding the Proposed Site



LVP N5: View from Proposed Site showing one- and two-story residences south of the site, partially obscured by cobble mounds and vegetation. Commercial development along U.S. 50 is visible in the background. (Photo taken by AECOM in 2010.)

Exhibit 3.1-3a. Local Landscape Character Surrounding the Proposed Site

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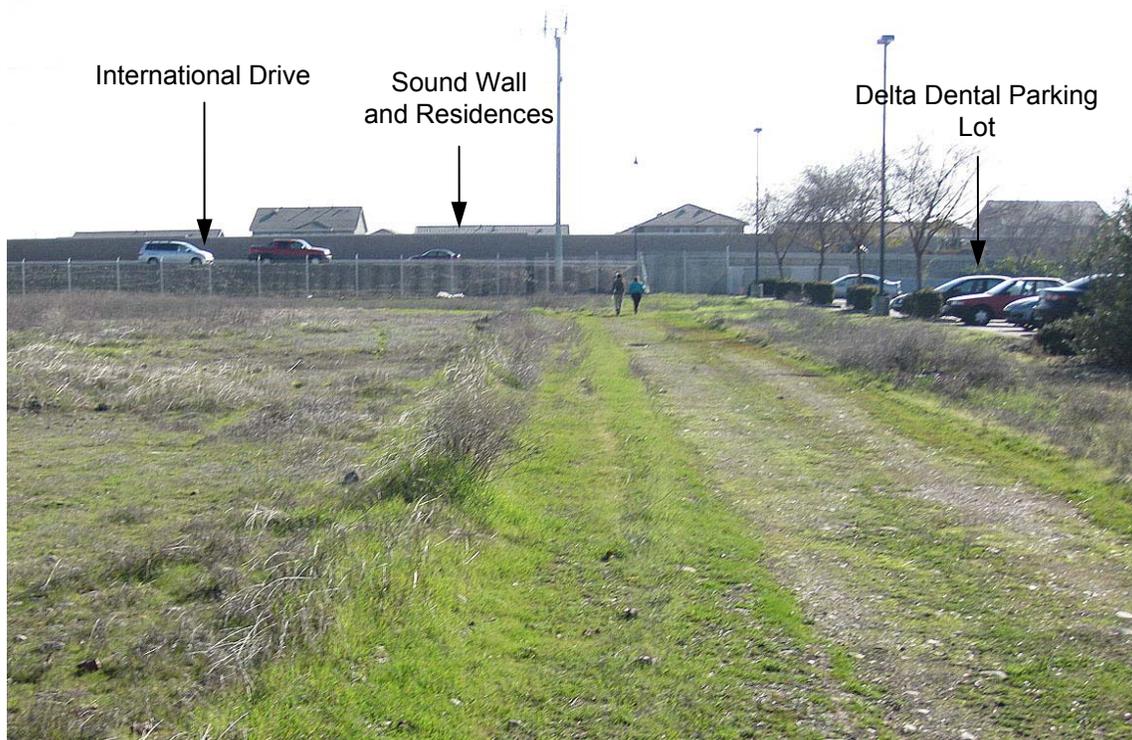


LVP K3: View of Delta Dental offices and residential area south of the Alternative 1 Site. (Photograph by AECOM in 2010)



LVP K4: View from near Folsom South Canal and recreation trail toward the Alternative 1 Site to the south. (Photograph by AECOM in 2010)

Exhibit 3.1-3b. Local Landscape Character Surrounding the Alternative 1 Site



LVP K5: View of the elevation difference between the International Drive extension and the Alternative 1 Site. (Photograph by AECOM in 2010)

Exhibit 3.1-3b. Local Landscape Character Surrounding the Alternative 1 Site



Exhibit 3.1-4. Key View Points at the Proposed Site



VP N1: American River Parkway, Lower Bluff at Sailor Bar—View to the south across the American River from trails on the lower bluff. The Proposed Site is partially visible behind the Nimbus Fish Hatchery and DFG regional office building. (Photo taken by AECOM in 2010.)



VP N2: American River Parkway and Jedediah Smith Memorial Trail, Upper Parking Lot at Sailor Bar—View to the southeast, from parking lot above the river. View of the Proposed Site is screened by the DFG regional office building, Nimbus Fish Hatchery buildings, and vegetation. (Photo taken by AECOM in 2010.)

Exhibit 3.1-5. Key View Points at the Proposed Site

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VP N3: Public Views of the Proposed Site from the Jedediah Smith Memorial Trail—Eastbound Perspective. This view of the site is in the direct line of sight of a bicyclist or pedestrian traveling east. (Photo taken by AECOM in 2010.)



VP N4: Public Views of the Site from the Jedediah Smith Memorial Trail—Westbound Perspective. View for westbound cyclists and pedestrians on the bike trail with retaining wall in the foreground. The Proposed Site is beyond the retaining wall. (Photo taken by AECOM in 2010.)

Exhibit 3.1-5. Key View Points at the Proposed Site



VP N5: Public Views of the Proposed Site from the Jedediah Smith Memorial Trail— Westbound Perspective. View for westbound cyclists and pedestrians on the bike path approaching Nimbus Road crossing of the bike path. (Photo taken by AECOM in 2010.)



VP N6: Private Views of the Proposed Site from the Southern Boundary of the Site— View of the site from the southern property boundary representing views from adjacent yards and homes. (Photo taken by AECOM in 2010.)

Exhibit 3.1-5. Key View Points at the Proposed Site



VP N7: Public View of the Proposed Site from the East Side of Hazel Avenue. View for pedestrians in the Folsom Lake State Recreation Area using the connecting path between the parking lot located above Nimbus Dam and the Jedediah Smith Memorial Trail. (Photo taken by AECOM in 2010.)

Exhibit 3.1-5. Key View Points at the Proposed Site

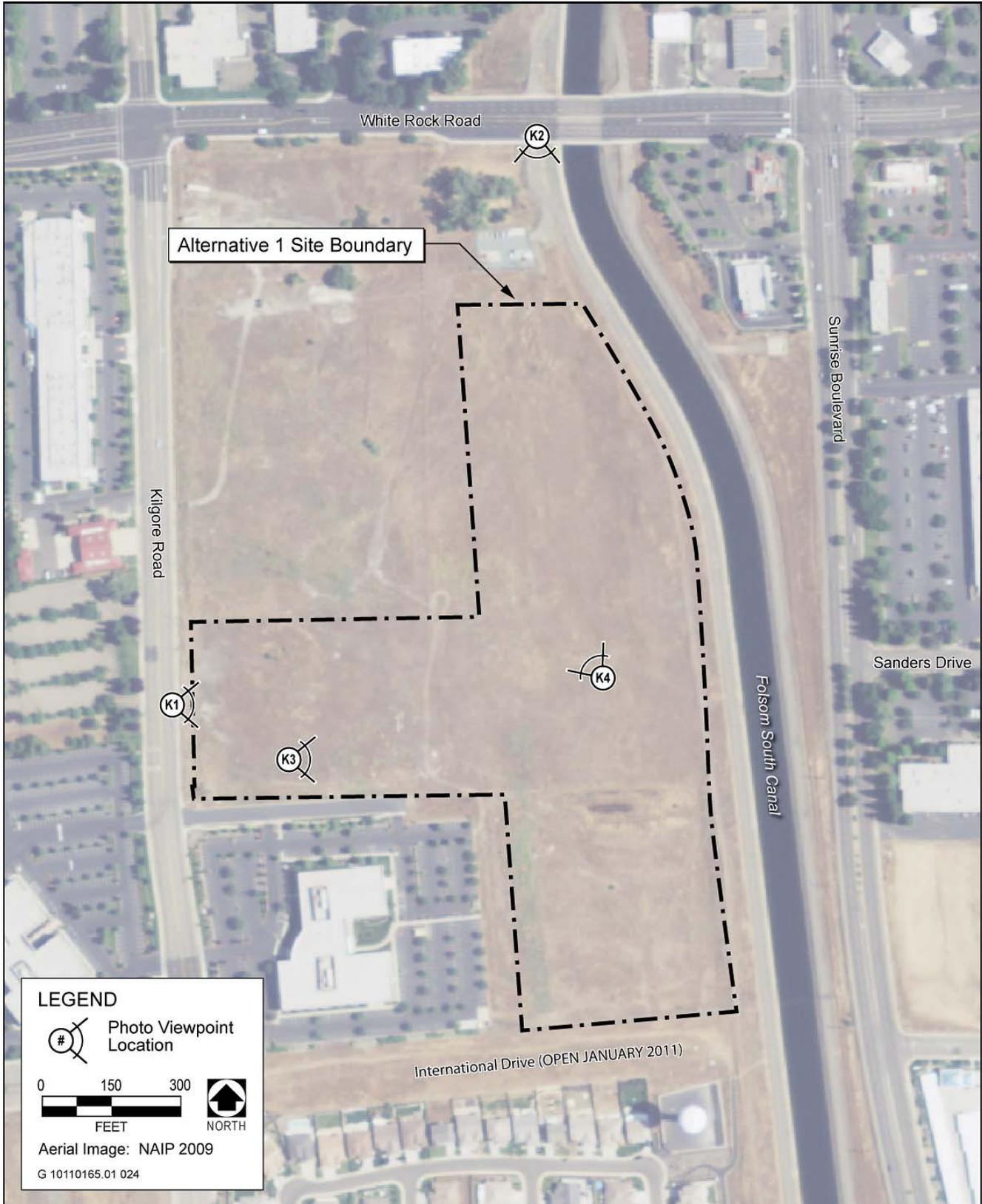


Exhibit 3.1-6. Locations of Key View Points at the Alternative 1 Site.

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VP K1: View of the Alternative 1 Site east from the west side of Kilgore Road. The tree line in the background parallels Sunrise Boulevard. (Photo taken by AECOM in 2010.)



VP K2: View of the Alternative 1 Site to the south from White Rock Road and the Folsom South Canal Recreation Trail. The water tower is located south of the Alternative 1 Site. (Photo taken by AECOM in 2010.)

Exhibit 3.1-7. Key View Points at the Alternative 1 Site.



VP K3: View northwest from central area of Alternative 1 Site. The fire station is located west of Kilgore Road in the background. (Photograph by AECOM in 2011)



VP K4: View north from central area of Alternative 1 Site. Commercial buildings and shopping areas are visible in the background, north of White Rock Road and west of Kilgore Road, beyond the flat grasses of the site. (Photograph by AECOM in 2011)

Exhibit 3.1-7. Key View Points at the Alternative 1 Site.

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3.2 Air Quality

3.2.1 Affected Environment

This section describes the affected environment related to air quality associated with the JOC Relocation Project proposed by Reclamation and DWR.

Environmental Setting

The proposed JOC site and Alternative Sites are located in the unincorporated area of Sacramento County and the city of Rancho Cordova, in Sacramento County, California. Sacramento County is under the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). SMAQMD operates at the regional level with primary responsibility for attaining and maintaining the Federal and State ambient air quality standards in Sacramento County.

Sacramento County is located within the Sacramento Valley Air Basin (SVAB), which includes all of Butte, Colusa, Glenn, Shasta, Sutter, Tehama, Yolo, and Yuba Counties, the western portion of Placer County, and the eastern portion of Solano County. Air quality in the SVAB is also regulated at the Federal level by the U.S. Environmental Protection Agency (EPA) and at the State level by the California Air Resources Board (ARB). Each of these agencies develops rules, regulations, and policies to comply with applicable legislation. Although EPA regulations may not be superseded, state, regional, and local regulations may be more stringent. Applicable regulations associated with emissions of criteria air pollutants, toxic air contaminants (TACs), and odors are described in the following sections.

Ambient concentrations of air pollutants are determined by the qualities and quantities of emissions released by sources and the atmosphere's ability to transport, dilute, and transform the emissions. Natural factors that affect transport, dilution, and transformation include terrain, wind, atmospheric stability, and sunlight. The combination of low wind speeds and restricted vertical mixing generally produces the highest concentrations of air pollutants. Therefore, existing air quality conditions in an area are determined by natural factors, such as topography, meteorology, and climate, in addition to the sources and strengths of emissions, as discussed separately below.

Topography, Climate, and Meteorology The SVAB is relatively flat and bordered by mountains to the east, west, and north. Air flows into the SVAB through the Carquinez Strait, the only breach in the western mountain barrier, and moves across the Sacramento–San Joaquin Delta (Delta), bringing with it pollutants from the heavily populated San Francisco Bay Area. The climate is characterized by hot, dry summers and cool, rainy winters.

Periods of dense and persistent low-level fog that are most prevalent between storms are characteristic of SVAB winter weather. The average winter temperature is a moderate 49°F. Most precipitation in the area results from air masses that move in from the Pacific Ocean from the west or northwest during the winter rainy season (November to April).

During the summer, daily temperatures range from 50°F to more than 100°F. The inland location and surrounding mountains shelter the area from much of the ocean breezes that keep the coastal regions moderate in temperature.

Regional and localized meteorological conditions, such as wind flow patterns, disperse pollutants and reduce pollutant concentrations. An inversion layer develops when a layer of warm air traps cooler air close to the ground. The highest frequency of air stagnation occurs in the autumn and early winter when large high-pressure cells lie over the valley. The lack of surface wind during these periods and the reduced vertical flow caused by less surface heating reduces the influx of outside air and allows air pollutants to become concentrated in the air. The surface concentrations of pollutants are highest when these conditions are combined with strong ground-level sources (SMAQMD 2009:1-7 through 1-8).

The ozone season (May–October) in the Sacramento Valley is characterized by stagnant morning air or light winds with the Delta sea breeze arriving in the afternoon from the southwest. Usually the evening breeze transports the airborne pollutants to the north out of the Sacramento Valley. During about half of the days from July to September, however, a phenomenon called the “Schultz Eddy” prevents this from occurring. Instead of allowing for the prevailing wind patterns to move north carrying the pollutants out of the valley, the Schultz Eddy causes the wind pattern and pollutants to circle back southward. This phenomenon’s effect exacerbates the pollution levels in the area and increases the likelihood of violating the Federal and State air quality standards (SMAQMD 2009:1-7–1-8).

The local meteorology of the project sites is represented by measurements recorded at the Sacramento 5 ESE station, near California State University, Sacramento. The normal annual precipitation, which occurs primarily from November through April, is approximately 18 inches (WRCC 2010a). January temperatures range from an average minimum of 40°F to an average maximum of 53°F. July temperatures range from an average minimum of 59°F to an average maximum of 92°F (WRCC 2010a). The predominant wind direction and speed is from the south-southwest at approximately 8 mph (WRCC 2010b; NCDC 2008).

Existing Air Quality

California and National Ambient Air Quality Standards ARB and EPA currently focus on the following air pollutants as indicators of ambient air quality: ozone, nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), particulate matter (PM), and lead. Because these are the most prevalent air pollutants known to be deleterious to human health and extensive documents on health-effects criteria are available, they are commonly referred to as “criteria air pollutants.” EPA has established primary and secondary national ambient air quality standards (NAAQS) for the following criteria air pollutants: ozone, NO₂, CO, SO₂, respirable particulate matter (PM₁₀), fine particulate matter (PM_{2.5}), and lead. The primary standards protect the public health and the secondary standards protect public welfare. In addition to the NAAQS, ARB has established California ambient air quality standards (CAAQS) for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particulate matter, in addition to the above-

mentioned criteria air pollutants. In most cases the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health-effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate an additional margin of safety to protect sensitive receptors, particularly children and infants (ARB 2010a). The NAAQS and CAAQS as discussed above are listed in Table 3.2-1, and health effects are described in Table 3.2-2.

California and National Area Designations Both ARB and EPA use ambient air quality monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify the areas with air quality problems and initiate planning efforts for improvement. The three basic designation categories are nonattainment, attainment, and unclassified. An “attainment” designation for an area signifies that pollutant concentrations did not exceed the established standard. In most cases, areas designated or redesignated as attainment must develop and implement maintenance plans, which are designed to ensure continued compliance with the standard (SMAQMD 2009:1-2).

In contrast to attainment, a “nonattainment” designation indicates that a pollutant concentration has exceeded the established standard. Nonattainment may differ in severity. To identify the severity of the problem and the extent of planning and actions required to meet the standard, nonattainment areas are assigned a classification that is commensurate with the severity of their air quality problem (e.g., moderate, serious, severe, extreme).

Finally, an unclassified designation indicates that insufficient data exists to determine attainment or nonattainment (SMAQMD 2009:1-2). In addition, the California designations include a subcategory of nonattainment-transitional, which is given to nonattainment areas that are progressing and nearing attainment.

Sacramento County is designated nonattainment for the Federal and State ozone, PM₁₀, and PM_{2.5} standards. However, data from air quality monitoring show that Sacramento County does meet the Federal PM₁₀ standard. Because the entire state is in attainment for SO₂ and most of the state is in attainment for lead (except for one area of Los Angeles County), SO₂ and lead will not be discussed further.

Criteria air pollutant concentrations are measured at 13 monitoring stations in Sacramento County. The Folsom station is the closest monitoring station to the Proposed Site, while the Sloughhouse station is the closest monitoring station to the Alternative 1 Site, both with recent data for ozone. The Sloughhouse station does not collect NO₂ data, but the Folsom station does. PM₁₀ data were not available at the Sloughhouse or Folsom stations and were obtained from the Branch Center Road #2 station in Sacramento, which is the next closest monitoring station to both sites. The nearest station for which CO and PM_{2.5} data were available was the Del Paso Manor station. In general, the ambient air quality measurements from these monitoring stations are representative of the air quality near the project areas. Table 3.2-3 summarizes the air quality data from the most recent 3 years for these monitoring stations.

**Table 3.2-1
Summary of Ambient Air Quality Standards and Attainment Designations**

Pollutant	Averaging Time	California		National Standards ¹		
		Standards ^{2,3}	Attainment Status (Sacramento County) ⁴	Primary ^{3,5}	Secondary ^{3,6}	Attainment Status (Sacramento County) ⁷
Ozone	1-hour	0.09 ppm (180 µg/m ³)	N	–	–	–
	8-hour	0.070 ppm (137 µg/m ³)	N	0.075 ppm (147 µg/m ³)	Same as Primary Standard	N (Severe)
Carbon monoxide (CO)	1-hour	20 ppm (23 mg/m ³)	A	35 ppm (40 mg/m ³)	–	U/A
	8-hour	9.0 ppm (10 mg/m ³)		9 ppm (10 mg/m ³)		
Nitrogen dioxide (NO ₂)	Annual Arithmetic Mean	0.030 ppm (57 µg/m ³)	A	0.053 ppm (100 µg/m ³)	Same as Primary Standard	U/A
	1-hour	0.18 ppm (339 µg/m ³)	A	0.100 ppm	–	–
Respirable particulate matter (PM ₁₀)	Annual Arithmetic Mean	20 µg/m ³		–		
	24-hour	50 µg/m ³	N	150 µg/m ³	Same as Primary Standard	N (Moderate)
Fine particulate matter (PM _{2.5})	Annual Arithmetic Mean	12 µg/m ³		15 µg/m ³		
	24-hour	No Separate State Standard	N	35 µg/m ³	Same as Primary Standard	N

Notes: ppm = parts per million; µg/m³ = micrograms per cubic meter; mg/m³ = milligrams per cubic meter

¹ National standards (other than ozone, particulate matter, and those standards based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. The PM₁₀ 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m³ is equal to or less than 1 day. For PM_{2.5}, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the U.S. Environmental Protection Agency for further clarification and current Federal policies.

² California standards for ozone, CO (except Lake Tahoe), NO₂, and particulate matter are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

³ Concentrations are expressed first in units in which they were issued (i.e., ppm or µg/m³). Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

⁴ Unclassified (U): The data are incomplete and do not support a designation of attainment or nonattainment.
 Attainment (A): The state standard for that pollutant was not violated at any site in the area during a 3-year period.
 Nonattainment (N): There was at least one violation of a state standard for that pollutant in the area.

⁵ National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

⁶ National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

⁷ Nonattainment (N): Any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.
 Attainment (A): Any area that meets the national primary or secondary ambient air quality standard for the pollutant.
 Unclassifiable (U): Any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant.

Sources: ARB 2010a, 2010b; EPA 2010a.

Table 3.2-2 Health Effects of Criteria Air Pollutants						
Pollutant	Acute ¹ Health Effects			Chronic ² Health Effects		
	Concentration	Averaging Time	Symptoms	Concentration	Averaging Time	Symptoms
Ozone	0.10 ppm–0.40 ppm	1–2 hours	Increased respiration and pulmonary resistance; cough, pain, shortness of breath	–	Long/lifetime	Permeability of respiratory epithelia, possibility of permanent lung impairment
	< or = 0.12 ppm	Hours	Lung inflammation			
Carbon monoxide (CO)	70 ppm–400 ppm	< 3 hours	Headache, dizziness, fatigue, nausea, vomiting	–	After acute exposure not resulting in death	Permanent heart and brain damage
	> 800 ppm	2–3 hours	Death			
Nitrogen dioxide (NO ₂)	10–20 ppm	Short	Coughing, difficulty breathing, vomiting, headache, eye irritation	–	Severe intoxication after acute exposure	Chronic bronchitis, decreased lung function
	–	4–12 hours	Chemical pneumonitis or pulmonary edema; breathing abnormalities, cough, cyanosis, chest pain, rapid heartbeat			
	> 150 ppm	Hours	Death			
Respirable particulate matter (PM ₁₀), Fine particulate matter (PM _{2.5})	Dependent on particle size, composition, number	–	Breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, premature death	Dependent on particle size, composition, number	Long/lifetime	Alterations to the immune system, carcinogenesis
Notes: ppm = parts per million						
¹ “Acute” refers to effects of short-term exposures to criteria air pollutants, usually at fairly high concentrations.						
² “Chronic” refers to effects of long-term exposures to criteria air pollutants, usually at lower, ambient concentrations.						
Sources: Godish 2004, NHDES 2007, USOTA 1989, EPA 2010b, 2010c						

Table 3.2-3 Summary of Annual Ambient Air Quality Data (2007–2009)			
	2007	2008	2009
Ozone¹			
Maximum concentration (1-hour/8-hour average, ppm) ²	0.097/0.089	0.148/0.108	0.122/0.099
Number of days state 1-hour standard exceeded	2	16	11
Number of days state/national 8-hour standard exceeded	17/10	37/19	34/24
Nitrogen Dioxide (NO₂)³			
Maximum concentration (1-hour, ppm)	0.049	0.042	0.038
Annual arithmetic mean concentration (ppm)	0.007	0.007	0.006
Number of days state mean/national 1-hour standard exceeded	0/0	0/0	0/0
Carbon Monoxide (CO)³			
Maximum concentration (1-hour/8-hour average, ppm) ²	3.5/2.9	2.9/2.49	3.1/2.8
Number of days state 1-hour standard exceeded	0	0	0
Number of days state 8-hour standard exceeded	0	0	0
Fine Particulate Matter (PM_{2.5})³			
State annual average design value exceeded	yes	yes	yes
National annual average design value exceeded	yes	yes	yes
Estimated number of days national 24-hour standard exceeded	26.1	24.1	8.9
Respirable Particulate Matter (PM₁₀)⁴			
Maximum 24-hour average concentration (µg/m ³) ²	60.0	89.0	76.0
Estimated number of days state 24-hour standard exceeded	30.2	68.7	12.2
Estimated number of days national 24-hour standard exceeded	0	0	0
Notes: µg/m ³ = micrograms per cubic meter; ppm = parts per million			
¹ Ozone data were obtained from the Sloughhouse monitoring station in Sacramento, which is the closest monitoring station to the project areas.			
² The 1-hour maximum concentrations are measured values; all other reported averages are based on state methods.			
³ Data from the Folsom Natoma Street station were used for NO ₂ ; data from Del Paso Manor station were used for CO and PM _{2.5} .			
⁴ Data from the Branch Center Road #2 station, the second closest monitoring station to the project areas, were used for PM ₁₀ .			
Sources: ARB 2010c, 2010d			

Criteria Air Pollutants

Ozone Ozone is a photochemical oxidant (i.e., a highly reactive gas), and even at low concentrations it is irritating and toxic. Ozone is the primary component of smog. It is not emitted directly into the air, but is formed through complex chemical reactions between precursor emissions of reactive organic gases (ROG) and oxides of nitrogen (NO_x) in the presence of sunlight. ROG are volatile organic compounds that are emitted from natural sources (such as plants), incomplete fossil fuel combustion, and the evaporation of

chemical solvents and fuels. NO_x are a group of gaseous compounds of nitrogen and oxygen that result from the combustion of fuels. ROG and NO_x are not themselves CAPs (with the exception of NO_2), but are controlled through Federal, State, regional, and local regulations, programs, and rules to limit ozone formation.

Ozone located in the upper atmosphere (stratosphere) shields the earth from harmful ultraviolet radiation that is emitted by the sun. However, ozone located in the lower atmosphere (troposphere) is a major health and environmental concern. Meteorology and terrain play a major role in ozone formation. Generally, low wind speeds and stagnant air coupled with warm temperatures and sunlight provide the optimum conditions for formation. As a result, summer is generally the peak ozone season. Because of the reaction time involved, peak ozone concentrations often occur downwind of the precursor emissions, making ozone a regional pollutant that can affect large areas. In general, ozone concentrations over or near urban and rural areas reflect an interplay of emissions of ozone precursors, transport, meteorology, and atmospheric chemistry (ARB 2009a:1-19; Godish 2004:51–55).

In 1997, EPA promulgated a new 8-hour standard in recognition of impacts resulting from daylong exposure. On April 15, 2004, EPA designated areas of the country that exceed the 8-hour standard ozone standard as nonattainment. The designations were in place as of February 2009. These designations have triggered new planning requirements for the 8-hour standard.

Because it does not meet the air quality standards for ozone, Sacramento County, as part of the larger Sacramento Federal Ozone Nonattainment Area (SFNA), is designated a “serious” nonattainment area for the Federal 8-hour ozone standard and is designated a “serious” nonattainment area for the State 1-hour ozone standard. To provide the needed time to attain the standard, SMAQMD requested a “bump up” to the “severe” classification for the Federal 8-hour ozone standard, which was submitted by ARB to EPA in February 2008 (SMAQMD 2009:1-2).

Ozone Trends On-road motor vehicles and other mobile sources are by far the largest contributors to NO_x emissions in the SVAB. According to the 2008 emissions inventory for Sacramento County, approximately 58% of NO_x emissions in Sacramento County are generated by on-road motor vehicles; an additional 33% of NO_x emissions are generated by other mobile sources, most notably off-road vehicles (ARB 2009b). Cleaner burning fuels and more stringent emission standards for mobile sources and have largely contributed to a decline in NO_x emissions in the past 30 years (ARB 2009a:A-36). On-road motor vehicles contributed 37% of the ROG emissions in Sacramento County in 2008, with other mobile sources contributing an additional 33% (ARB 2009b). ROG emissions have been decreasing significantly for the last 30 years because of more stringent motor vehicle standards and new rules for control of ROG from various industrial coating and solvent operations (ARB 2009a:A-36). Even so, the ozone problem in the SVAB ranks among the most severe in the state. Peak ozone values in the SVAB have not declined as quickly over the last several years as they have in other urban areas. The peak 8-hour indicator remained fairly constant from 1988 to 2007 (ARB 2009a:A-92). Since the early 1990s, the peak 8-hour indicator has decreased slightly, and the

overall decline for the 20-year period is approximately 10%. Looking at the number of days above the national and State standards, the trend is much more variable. The numbers of exceedance days have not declined significantly since the early 1990s (ARB 2009a:A-92).

Nitrogen Dioxide Nitrogen dioxide (NO₂) is a brownish, highly reactive gas that is present in all urban environments. The major human-made sources of NO₂ are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal-combustion engines. Combustion devices emit primarily nitric oxide (NO), which oxidizes in the atmosphere to form NO₂ (EPA 2010b). The combined emissions of NO and NO₂ are referred to as NO_x, which are reported as equivalent NO₂. Because NO₂ is formed and depleted by reactions associated with photochemical smog (ozone), the NO₂ concentration in a particular geographical area may not be representative of the local NO_x emission sources. In California, NO_x is primarily emitted by mobile sources, which account for 86% of the total state NO_x emissions (ARB 2009a:2-4).

Sacramento County is in attainment for NO₂.

Nitrogen Dioxide Trends As described previously, mobile sources are by far the largest contributors to NO_x emissions in Sacramento County, accounting for 91% of the total (ARB 2009b). Cleaner burning fuels and more stringent emission standards for mobile sources have largely contributed to a decline in NO_x emissions (ARB 2009a:4-57, A-36). Maximum 1-hour concentrations of NO₂ in Sacramento County have been variable, without significant decline since the early 1990s; however, maximum annual averages have dropped by about 25% in the past decade.

Carbon Monoxide Carbon monoxide (CO) is a colorless, odorless, and poisonous gas produced by incomplete combustion of carbon in fuels, primarily from mobile (transportation) sources, which comprised 80% of the statewide CO emissions in 2008. The remaining 20% of CO is emitted primarily from wood-burning stoves, managed burning, and incineration (ARB 2009a:2-4 through 2-11).

The highest CO concentrations are generally associated with cold, stagnant weather conditions that occur during the winter. In contrast to ozone, a regional pollutant, CO tends to cause localized problems.

Sacramento County is in attainment for CO.

Carbon Monoxide Trends On-road motor vehicles and other mobile sources are by far the largest contributors to CO emissions. Emissions of CO in Sacramento County have declined by almost a factor of 5 since 1990 (ARB 2009a:A-36). No violations of the Federal or State 8-hour CO standards have occurred since 1993.

Particulate Matter PM with an aerodynamic diameter of 10 microns or less is referred to as PM₁₀. The major portion of PM₁₀ by mass consists of coarse particulate matter emitted directly into the air. The components of PM₁₀ can be dust, soot, and smoke generated by mobile sources, stationary sources, and fires. PM_{2.5} is a subgroup of PM₁₀ and is composed of finer particles that have an aerodynamic diameter of 2.5 microns or

less. The particles are generally formed by secondary processes, such as condensation of combustion gases or transformation of ambient SO₂, NO_x, and ROG (EPA 2010b).

Sacramento County is currently designated as nonattainment for the Federal and State PM_{2.5} and PM₁₀ standards.

Particulate Matter Trends The largest sources of PM_{2.5} and PM₁₀ in Sacramento County are areawide sources, such as residential fuel combustion, construction and demolition, and road dust, which account for 73% of PM_{2.5} emissions and 89% of PM₁₀ emissions (ARB 2009b).

Direct emissions of PM₁₀ have been increasing in Sacramento County in the past 30 years, primarily from areawide sources such as paved road dust, which increases proportionally with vehicle miles traveled (VMT). The population and subsequent VMT growth rates in the SVAB are larger than statewide population and VMT growth rates during the 1980–2020 time frame (ARB 2010a:4-57). Direct emissions of PM_{2.5} have been fairly stable over the same time period. Statewide programs aimed at reducing ozone and diesel PM will also help to reduce public exposure to PM_{2.5}.

National and State maximum 24-hour concentrations of PM₁₀ have been variable in Sacramento County for the past decade, with no discernable downward trends. National and State annual average concentrations of PM₁₀ have been fairly stable over the same period of time. The number of violations of the State 24-hour standard have been variable over the past 15 years, with no decreasing trend, and the national 24-hour standards have not been violated since before 1989 (ARB 2009a:A-92).

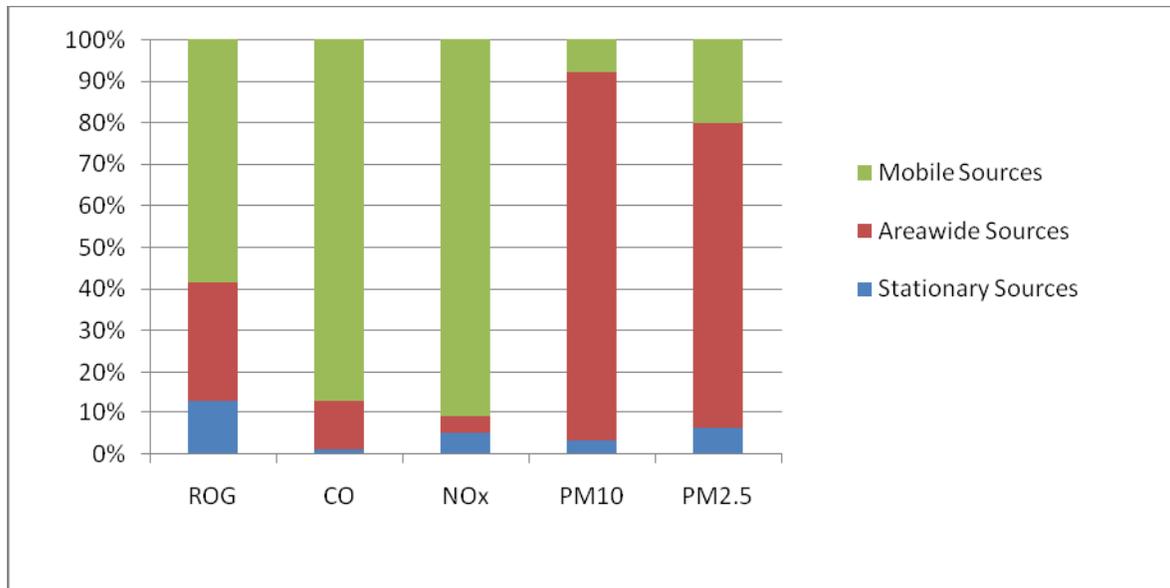
State maximum 24-hour concentrations of PM_{2.5} have been decreasing in Sacramento County in the past decade, while national maximum 24-hour concentrations of PM_{2.5} have been more variable. National and State PM_{2.5} averages have been fairly constant for the past decade (ARB 2009a:A-92).

Sacramento County exceeded the State's annual PM₁₀ standard by about 40% and the PM_{2.5} standard by 4% on average during the past 5 years. In addition, the area under SMAQMD's jurisdiction exceeded the State 24-hr PM₁₀ standard up to 14 days per year during the past 5 years (SMAQMD 2010).

Emission Sources Sources of criteria air pollutants in Sacramento County and the project areas include stationary, area, and mobile sources. According to the 2008 emissions inventory for Sacramento County, the majority of NO_x emissions are attributable to mobile sources. Stationary and areawide sources are the greatest contributors of organic gases (ozone precursors from landfills, farming, and managed burning), while areawide and mobile sources are the greatest contributors of CO (managed burning and vehicular traffic) and PM (road dust and managed burning) (ARB 2009b).

Exhibit 3.2-1 summarizes emissions of CAPs and precursors within Sacramento County for various source categories.

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Notes: ROG = reactive organic gases; CO = carbon monoxide; NO_x = oxides of nitrogen; PM₁₀ = respirable particulate matter; PM_{2.5} = fine particulate matter.

Source: ARB 2009b

Exhibit 3.2-1: Summary of 2008 Estimated Emissions Inventory for Criteria Air Pollutants and Precursors (Sacramento County, Tons/Day)

Stationary Sources Most stationary sources of criteria air pollutant emissions within Sacramento County are minor sources and include hospitals, small electrical producers and cogeneration facilities, and light commercial and industrial processes (i.e., asphalt mixing, sand and gravel production, brick and tile manufacturing, fiberglass manufacturing, food processing with and without cogeneration) (ARB 2010e, 2010f). No major stationary sources of criteria air pollutants are near the project areas.

Areawide Sources Areawide sources of emissions in Sacramento County include solvent evaporation from consumer products and application of architectural coatings, residential fuel combustion, construction and demolition, road dust, managed burning, farming, and other miscellaneous sources. Solvent evaporation is the largest contributor to ROG emissions, residential fuel combustion is the largest contributor to CO and NO_x emissions, and construction/demolition and road dust are the largest contributors to PM emissions in the county (ARB 2009b).

Mobile Sources On-road and other mobile sources are the largest contributors of ROG, CO, and NO_x within Sacramento County. On-road sources consist of passenger vehicles, trucks, buses, and motorcycles, while off-road vehicles and other mobile sources comprise heavy-duty equipment, boats, aircraft, trains, recreational vehicles, and farm equipment. Major roadways near the project areas include U.S. Highway 50 (U.S. 50), Hazel Avenue, Sunrise Boulevard, and White Rock Road.

Toxic Air Contaminants TACs are air pollutants that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. TACs

are usually present in minute quantities in the ambient air. However, their high toxicity or health risk may pose a threat to public health even at low concentrations. According to *The California Almanac of Emissions and Air Quality* (ARB 2009b:1-9, 1-12), the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important being PM from diesel-fueled engines (diesel PM, a subset of PM₁₀ emissions). Diesel PM differs from other TACs because it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. However, ARB has made preliminary estimates of concentrations based on a PM exposure method. This method uses ARB's PM₁₀ database, ambient PM₁₀ monitoring data, and the results from several studies on chemical speciation to estimate concentrations of diesel PM.

Of the TACs for which data are available in California, diesel PM, benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene pose the greatest existing ambient risks (ARB 2009a:5-2 through 5-5). Diesel PM poses the greatest health risk among these 10 TACs. Health risks associated with diesel PM are expected to drop by the year 2020 because ARB's heavy duty vehicle regulations and *Diesel Risk Reduction Plan* are being implemented (ARB 2009a:5-42 through 5-44).

Diesel PM emissions are estimated to be 2,590 tons per year in the SVAB, which constitutes approximately 7% of the diesel PM emissions in the state (ARB 2009a:5-82). Based on receptor modeling techniques, ARB estimated health risks from diesel PM exposure to be 360 excess cancer cases per million people in the SVAB in the year 2000 (ARB 2009a:5-83). Since 1990, the health risk associated with diesel PM has been reduced by 52% in the SVAB. Overall, levels of most TACs, except for para-dichlorobenzene and formaldehyde, have decreased since 1990 in the SVAB (ARB 2009a:5-83 through 5-84).

Several stationary sources of TACs exist in Sacramento County, including manufacturers of foods, chemicals, building products, and fabrics; hospitals; crematoriums; quarries; and petroleum storage and terminals (ARB 2010f).

The only stationary source of TACs near either project area is Aerojet (near the Alternative 1 Site), which reported numerous types and quantities of toxic emissions in 2008 or prior years (ARB 2010e, 2010f). Quantitative health risk assessments were performed in 1994, and the SMAQMD's prioritization thresholds were not exceeded.

Sensitive Receptors Some members of the population are especially sensitive to air pollutant emissions and should be given special consideration when evaluating air quality impacts from projects. These people include children, the elderly, persons with preexisting respiratory or cardiovascular illness, and athletes and others who engage in

frequent exercise. Structures that house these persons or places where they gather are defined as sensitive receptors.

Residential areas are considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposures to any pollutants present. Recreational land uses are considered moderately sensitive to air pollution. Exercise places a high demand on respiratory functions, which can be impaired by air pollution even though exposure periods during exercise may be short. In addition, noticeable air pollution can detract from the enjoyment of recreation. Commercial and industrial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent because the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

ARB defines sensitive receptors as residential uses, schools, daycare centers, playgrounds, and health care facilities (including hospitals and nursing homes) (ARB 2005:ES-1). Residential homes are adjacent to both project sites.

Odors Typically odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals can smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person (e.g., from a fast-food restaurant or bakery) may be perfectly acceptable to another. In addition, an unfamiliar odor is easier to detect and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

SMAQMD lists several examples of common land use types that typically generate substantial odor impacts, including wastewater treatment plants, landfills, composting/

green waste facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting/coating operations, rendering plants, and food packaging plants.

Regulatory Setting

Criteria Air Pollutants

Federal Plans, Policies, Regulations, and Laws At the Federal level, EPA has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the Federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments made by Congress were in 1990.

The CAA required EPA to establish primary and secondary NAAQS (Table 3.2-1). The CAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The Federal Clean Air Act Amendments of 1990 (CAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA is responsible for reviewing all state SIPs to determine whether they conform to the mandates of the CAAA and whether implementation will achieve air quality goals. If EPA determines a SIP to be inadequate, a Federal Implementation Plan that imposes additional control measures may be prepared for the nonattainment area. Failure to submit an approvable SIP or to implement the plan within the mandated time frame may result in applying sanctions to transportation funding and stationary air pollution sources in the air basin.

In addition, general conformity requirements were adopted by Congress as part of the CAAA and were implemented by EPA regulations in 1993. General conformity requires that all Federal actions conform to the SIP as approved or promulgated by EPA. The purpose of the general conformity program is to ensure that actions taken by the Federal government do not undermine State or local efforts to achieve and maintain NAAQS. Before a Federal action is taken, it must be evaluated for conformity with the SIP. All reasonably foreseeable emissions, both direct and indirect, predicted to result from the action are considered and their location and quantity must be identified. If the action would create emissions above de minimis threshold levels specified in EPA regulations, or if the activity is considered regionally significant because its emissions exceed 10% of an area's total emissions, the action cannot proceed unless mitigation measures are specified that would bring the project into conformance.

General conformity applies in both Federal nonattainment and maintenance areas. Within these areas, it applies to any Federal action not specifically exempted by the CAA or EPA regulations. Emissions from construction activities are also included. General conformity does not apply to projects or actions that are covered by the transportation conformity rule. If a Federal action falls under the general conformity rule, the Federal agency responsible for the action is responsible for making the conformity determination. In some instances, a Federal agency will delegate responsibility for making the conformity determination to the State. Private developers are not responsible for making a

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conformity determination, but a determination can directly affect them. General conformity with respect to the project will be determined within the record of decision.

The JOC Relocation Project is subject to these Federal plans, policies, regulations, and laws because the SVAB is a nonattainment area for several criteria air pollutants under the NAAQS; that is, levels of these pollutants do not meet the Federal air quality standard as regulated by EPA.

State Plans, Policies, Regulations, and Laws ARB is the agency responsible for coordinating and overseeing State and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). The CCAA was adopted in 1988. It required ARB to establish CAAQS (Table 3.2-1). The CCAA requires that all local air districts in the State endeavor to achieve and maintain the CAAQS by the earliest practical date. The act specifies that local air districts should focus particular attention on reducing the emissions from transportation and areawide emission sources and provides districts with the authority to regulate indirect sources.

Other ARB responsibilities include overseeing local air districts' compliance with Federal and California laws, approving local air quality plans, submitting SIPs to EPA, monitoring air quality, determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

ARB and local air pollution control districts are currently developing plans for meeting new national air quality standards for ozone and PM_{2.5}. On September 27, 2007, ARB adopted its State Strategy for the 2007 SIP. The State Strategy consists of the April 26, 2007, draft strategy and several changes that were made as ARB staff proceeded through the public comment and ARB adoption process. California's adopted 2007 State Strategy was submitted to EPA as a revision to the SIP in November 2007 (ARB 2010g).

On April 23, 2009, ARB adopted a staff proposal to consider a revision to the SIP reflecting implementation of the 2007 State Strategy. EPA requested this revision to aid their approval of the SIP. The proposed revision accounts for emission reductions from the regulations adopted in 2007 and 2008, clarifies ARB's legal commitments in light of EPA's approval criteria, and clarifies the discussion of the long-term strategy for identifying future technologies to achieve the last increment of reductions. The proposed revision does not change the emission reductions of NO_x, ROGs, oxides of sulfur, and direct PM_{2.5} that ARB committed to achieve by specific years when it adopted the 2007 State Strategy. The proposed revision also includes a commitment to reduce emissions in the Sacramento area, which had not been quantified at the time the 2007 State Strategy was adopted.

The JOC Relocation Project is subject to State plans, policies, regulations, and laws because it is in California and is subject to CEQA, and because the SVAB is a nonattainment area for several criteria air pollutants under the CAAQS.

Regional and Local Plans, Policies, Regulations, and Ordinances

Sacramento Metropolitan Air Quality Management District SMAQMD attains and maintains air quality conditions in Sacramento County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. SMAQMD's clean-air strategy includes preparing plans to attain ambient air-quality standards, adopting and enforcing rules and regulations concerning sources of air pollution, and issuing permits for stationary sources of air pollution. SMAQMD also inspects stationary sources of air pollution and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by the CAA, amendments thereof, and CCAA.

SMAQMD's *Guide to Air Quality Assessment in Sacramento County* is an advisory document that provides lead agencies, consultants, and project applicants with uniform procedures for addressing air quality in environmental documents. A new version of the guide was released in December 2009 and supersedes the version released in July 2004 (SMAQMD 2009). Lead agencies must use the December 2009 CEQA guide beginning January 1, 2010, for all projects that have not released a draft environmental document for public review on or before that date. The 2009 version of the guide does not include developing new thresholds of significance; however, it does include updated methodologies for evaluating potential impacts and a refined list of recommended mitigation measures. The 2009 guide contains the following applicable components:

- ▶ criteria and thresholds for determining whether a project may have a significant adverse air quality impact;
- ▶ specific procedures and modeling protocols for quantifying and analyzing air quality impacts;
- ▶ methods available to mitigate air quality impacts; and
- ▶ information for use in air quality assessments and EIRs that will be updated frequently, such as air quality data, regulatory setting, climate, and topography.

As mentioned above, SMAQMD adopts rules and regulations. All projects are subject to SMAQMD rules and regulations in effect at the time of construction. Specific rules applicable to the construction of the Proposed Action and Alternative 1 may include, but are not limited to, the following:

- ▶ *Rule 201: General Permit Requirements.* Any project that includes the use of equipment capable of releasing emissions to the atmosphere may require permit(s) from SMAQMD before equipment operation. The applicant, developer, or operator of a project that includes an emergency generator, boiler, or heater should contact SMAQMD early to determine whether a permit is required, and to begin the permit application process. Portable construction equipment (e.g., generators, compressors, pile drivers, lighting equipment) with an internal combustion engine over 50

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horsepower (hp) are required to have a SMAQMD permit or ARB portable equipment registration.

- ▶ *Rule 402: Nuisance.* The developer and proposed project cannot emit any quantities of air contaminants or other materials that would cause injury, detriment, nuisance, or annoyance to any considerable number of persons or the public; or which endanger the comfort, repose, health, or safety of any persons or the public; or which cause or have natural tendency to cause injury or damage to business or property.
- ▶ *Rule 403: Fugitive Dust.* The developer or contractor is required to control dust emissions from earthmoving activities or any other construction activity to prevent airborne dust from leaving the project areas.
- ▶ *Rule 417: Wood Burning Appliances.* The developer or contractor is prohibited from installing any new, permanently installed, indoor or outdoor, uncontrolled fireplaces in new or existing developments.
- ▶ *Rule 442: Architectural Coatings.* The developer or contractor is required to use coatings that comply with the volatile organic compound (VOC) content limits specified in the rule.

In addition, effective as of October 10, 2005, if modeled construction-generated emissions for a project are not reduced to SMAQMD's threshold of significance (85 pounds per day [lb/day] of NO_x) by applying the standard construction mitigation measures, then an off-site construction mitigation fee must be paid before a grading permit can be issued. SMAQMD uses this fee to purchase off-site emissions reductions. Such purchases are made through SMAQMD's Heavy Duty Incentive Program, through which select owners of heavy-duty equipment in Sacramento County can repower or retrofit their old engines with cleaner engines or technologies. SMAQMD provides a Mitigation Fee Calculator for determining the fee for construction projects when off-site mitigation is needed (SMAQMD 2010).

The JOC Relocation Project would be subject to SMAQMD regulations because the project is located within the SVAB under SMAQMD jurisdiction.

Air Quality Plans

Federal 1-Hour Ozone On November 6, 1991, the Sacramento region was designated a "serious" nonattainment area for the 1-hour ozone NAAQS with a November 15, 1999, attainment deadline. The SFNA included Sacramento, Yolo, Placer, El Dorado (except Lake Tahoe Basin portions), Solano (eastern portion), and Sutter (southern portion) Counties. The 1994 Sacramento Area Regional Ozone Attainment Plan (OAP) was prepared. The OAP demonstrated that a comprehensive control strategy to reduce VOC and NO_x emissions could achieve the ozone standard by 2005. In response, EPA reclassified the Sacramento region as "severe;" extended the attainment deadline to November 15, 2005; and approved the 1-hour ozone plan in 1997.

As a “severe nonattainment” area, the Sacramento region was required to submit rate-of-progress milestone evaluations per Section 182(g) of the CAA. SMAQMD prepared milestone reports for 1996, 1999, and 2002.

In 2004, EPA published the Phase 1 Rule to implement the 1997 8-hour ozone NAAQS, which revoked the 1-hour ozone NAAQS effective June 15, 2005. In 2009, SMAQMD submitted a request to exclude certain 1-hour exceedances from elevated ozone levels caused by wildfires from June 21, 2008 through August 11, 2008. In the following year, the region requested EPA to formally determine attainment for the Sacramento nonattainment area based on the exclusion of these exceedances.

Federal 8-Hour Ozone In 1997, NAAQS for ozone was lowered from 0.12 parts per million of ozone averaged over 1 hour to 0.08 parts per million of ozone averaged over 8 hours. In 2004, the Sacramento region was designated nonattainment for the 1997 NAAQS and classified as a “serious” area with an attainment deadline of June 15, 2013. To reduce emissions, the Sacramento region needs to rely on the longer term strategies from Federal and State control programs for mobile sources; therefore, the 2013 attainment date could not be met. Consequently, on February 14, 2008, ARB, on behalf of the air districts in the Sacramento region, submitted a letter to EPA requesting a voluntary reclassification (bump-up) of the SFNA from a “serious” to a “severe” 8-hour ozone nonattainment area with an extended attainment deadline of June 15, 2019, and additional mandatory requirements. On May 5, 2010, EPA approved the request effective June 4, 2010.

State 1-Hour Ozone The Sacramento region is designated a nonattainment area for the State 1-hour and 8-hour ozone standards, and SMAQMD must undertake planning efforts to reach this health-based standard at the county level (i.e., Sacramento County, among others, which are also part of the SFNA).

SMAQMD, in coordination with the air quality management districts and air pollution control districts of El Dorado, Placer, Solano, Sutter, and Yolo Counties, prepared and submitted the 1994 *Air Quality Attainment Plan* (AQAP) in compliance with the requirements set forth in the CCAA, which specifically addressed the nonattainment status for ozone and, to a lesser extent, CO and PM₁₀.

The CCAA also requires annual progress reports and triennial assessments of the extent of air quality improvements and emission reductions achieved through the use of control measures. As part of the assessment, the attainment plan must be reviewed and, if necessary, revised to correct for deficiencies in progress and to incorporate new data or projections.

The requirement of the CCAA for a first triennial progress report and revision of the 1991 AQAP was fulfilled with the preparation and adoption of the 1994 OAP, which stressed attainment of ozone standards and focused on strategies for reducing ROG_s and NO_x.

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Federal PM₁₀ In 2002, EPA officially determined that Sacramento County had attained the PM₁₀ NAAQS based on PM₁₀ air quality monitoring data recorded during 1998 to 2000, which showed no measured exceedances of the 24-hour PM₁₀ NAAQS or violations of the annual standard between 1998 and 2000. The current air monitoring network includes seven PM₁₀ stations throughout Sacramento County, and no measured violations of the PM₁₀ NAAQS have occurred to date.

To reclassify Sacramento County as attainment for the national PM₁₀ standards, SMAQMD submitted their PM₁₀ Implementation/Maintenance Plan and Redesignation Request for Sacramento County on October 28, 2010. The plan shows that the 1987 standard for PM₁₀ was attained and establishes the strategy for maintaining the standard through 2022.

Federal PM_{2.5} On October 16, 2006, EPA promulgated a new 24-hour standard for PM_{2.5}. The standard lowered the daily standard from 65 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) to 35 $\mu\text{g}/\text{m}^3$ to protect the general public from short-term exposure to PM_{2.5}. Because Sacramento County does not meet the new standards, in October 2007 the SMAQMD completed a boundary analysis based on the EPA's nine factor requirements. In December 2007 ARB made their recommendations to EPA for the boundary of the nonattainment area.

The EPA Administrator signed the final PM_{2.5} nonattainment designations for Sacramento on October 8, 2009. An attainment plan must be submitted not later than 3 years after the effective date of the designation and must include transportation conformity budgets (limits on mobile-source emissions for the region) and control measures.

State PM In 2003, the California Legislature enacted Senate Bill (SB) 656 (SB 656, Sher, Health and Safety Code Section 39614) to reduce adverse health impacts, including development of lung and heart disease and premature death from exposure to PM levels above the State ambient air quality standards.

SB 656 required ARB to develop a list of the most readily available, feasible, and cost-effective control measures that could be employed to reduce PM emissions. The ARB list is based on California rules and regulations existing as of January 1, 2004, and was adopted by ARB in November 2004. Subsequently, under SB 656, each air district is required to prioritize the measures identified by ARB based on the cost effectiveness of the measures and their effect on public health, air quality, and emission reductions. On July 28, 2005, SMAQMD adopted an implementation schedule for the most cost-effective measures.

Sacramento County General Plan The policies from the 1993 County of Sacramento General Plan (Sacramento County 1993) regarding air quality and odors that apply to the Proposed Action and alternatives under consideration are listed below:

- ▶ **Policy AQ-1:** Minimize air pollutant emissions from Sacramento County facilities and operations.

- ▶ **Policy AQ-2:** Use ARB, SMAQMD, and Sacramento Area Council of Governments (SACOG) guidelines for Sacramento County facilities and operations in order to comply with mandated measures to reduce emissions from fuel consumption, energy consumption, surface coating operations, and solvent usage.
- ▶ **Policy AQ-3:** Promote optimal air quality benefits through energy conservation measures in new development.
- ▶ **Policy AQ-4:** Support SMAQMD's development of improved ambient air quality monitoring capabilities and the establishment of standards, thresholds and rules to more adequately address the air quality impacts of proposed project plans and proposals.
- ▶ **Policy AQ-5:** Require BACT to reduce air pollution emissions.
- ▶ **Policy AQ-6:** Provide disincentives for single-occupant vehicle trips through parking supply and pricing controls in areas where supply is limited and alternative transportation modes are available so as not to cause economic disruption, or through other measures identified by SMAQMD and incorporated into regional plans.
- ▶ **Policy AQ-7:** Support the use of demand management and pricing controls as near-term measures for attaining AQAP goals and policies.
- ▶ **Policy AQ-8:** Implement the Sacramento City/County Bikeways Master Plan.
- ▶ **Policy AQ-9:** Secure adequate funding for Regional Transit so that transit is a viable transportation alternative. Development shall pay its fair share of the cost of transit facilities required to serve the project.
- ▶ **Policy AQ-15:** All new major indirect sources of emissions shall be reviewed and modified or conditioned to achieve a reduction in emissions. This indirect source review program will be developed in coordination with SACOG and SMAQMD, and include the following features:
 - A 15% reduction in emissions from the level that would be produced by a base-case project assuming full trip generation per the current Institute of Transportation Engineers (ITE) Trip Generation Handbook.
 - A focus on cost-effectiveness measured in terms of cost per ton of pollutant avoided.
 - A list of cost-effective measures to be developed, maintained, and annually reviewed by SMAQMD.
 - A maximum expenditure cap which will be computed for each indirect source on the basis of factors including, but not limited to, total emissions and project value.

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- A process for obtaining a waiver from the 15% requirement if it is found that a lower level of reduction is all that can be achieved with cost-effective measures and offsets, or that achieving the full 15% reduction would cost more than expenditure cap.
 - An exception for projects which have already undergone the indirect source review at some point in the development approval process.
 - A procedure to give full credit for other measures required in a project that may also achieve a reduction in emissions.
- ▶ **Policy AQ-17:** Require that development projects be located and designed in a manner which will conserve air quality and minimize direct and indirect emission of air contaminants.
 - ▶ **Policy AQ-18:** Encourage employment-intensive development, having the potential to employ 200 or more employees, where adequate transit service is planned, and discourage such development where adequate transit service is not planned.
 - ▶ **Policy AQ-19:** Identify the air quality impacts of development proposals to avoid significant adverse impacts and require appropriate mitigation measures or offset fees.
 - ▶ **Policy AQ-20:** Submit development proposals to SMAQMD for review and comment in compliance with CEQA prior to consideration by the appropriate decision making body.
 - ▶ **Policy AQ-21:** Provide for the location of ancillary employee services (including, but not limited to, child care, restaurants, banking facilities, convenience markets) at major employment centers for the purpose of reducing midday vehicle trips.
 - ▶ **Policy AQ-22:** Provide for buffers between sensitive land uses and sources of air pollution or odor.
 - ▶ **Policy AQ-24:** Provide for increased intensity of development along existing and proposed transit corridors.
 - ▶ **Policy AQ-25:** Require that new development be designed to promote pedestrian and bicycle access and circulation.
 - ▶ **Policy AQ-26:** Accommodate growth within existing urban areas (infill) as a priority over urban expansion.
 - ▶ **Policy AQ-27:** Require that all employee parking areas for new development be designed with controllable access.

- ▶ **Policy AQ-29:** Require traffic counter loops and traffic management hardware at nonresidential garage entrances, driveways, new intersections, and other appropriate locations.
- ▶ **Policy AQ-37:** Maximize air quality benefits through selective use of vegetation in landscaping and through revegetation of appropriate areas.

Sacramento County General Plan Update Sacramento County is in the process of preparing a draft Sacramento County General Plan Update (Sacramento County 2010) and EIR to plan for growth in the period 2010–2030. Until that EIR has been certified and the update has been adopted by the Sacramento County Board of Supervisors, the 1993 general plan remains in effect. Following receipt of a third-party review in December 2010, hearings on the general plan began in spring 2011 and are ongoing.

City of Rancho Cordova General Plan Goals and policies from the *Rancho Cordova General Plan* (City of Rancho Cordova 2006) related to air quality and odors that apply to the Alternative 1 Site under consideration are listed below:

- ▶ **Policy AQ.1.2:** Evaluate projects for compliance with State and federal ambient air quality standards and the Sacramento Metropolitan Air Quality Management District's (SMAQMD) thresholds of significance.
- ▶ **Policy AQ.1.5:** Require odor impact analyses be conducted for evaluating new development requests that either could generate objectionable odors that may violate SMAQMD Rule 402 or any subsequent rules and regulations regarding objectionable odors near sensitive receptors or locate new sensitive receptors near existing sources of objectionable odors. Should objectionable odor impacts be identified, odor mitigation shall be required in the form of setbacks, facility improvements or other appropriate measures.
- ▶ **Policy AQ.2.1:** Promote strategic land use patterns for businesses that reduce the number and length of motor vehicle trips and that encourage multiple forms of transportation for employees and patrons.
- ▶ **Policy AQ.2.3:** Encourage infill development as a way to reduce vehicle trips and improve air quality.
- ▶ **Policy AQ.2.4:** Maximize air quality benefits through selective use of landscaping vegetation that is low in emission of volatile organic compounds, and through revegetation of appropriate areas.
- ▶ **Policy AQ.2.5:** Utilize the guidelines in the California Air Resources Control Board's *Air Quality and Land Use Handbook: A Community Health Perspective* (ARB 2005) when evaluating new development requests that either would generate toxic air contaminant emissions near sensitive receptors or locate new sensitive receptors near existing sources of air toxic emissions or order to minimize health hazards, and implement all feasible best available control technology, as required by SMAQMD.

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- ▶ **Policy AQ.3.1:** Promote walking and bicycling as viable forms of transportation to services, shopping, and employment.
- ▶ **Policy AQ.3.2:** Promote mass transit as an alternative to single-occupant motor vehicle travel.
- ▶ **Policy AQ.3.4:** Emphasize “demand management” strategies that seek to reduce single occupant vehicle use in order to achieve state and federal air quality plan objectives.
- ▶ **Policy AQ.4.1:** Promote improved air quality benefits through energy conservation measures for new and existing development.
- ▶ **Policy AQ.4.3:** Support SMAQMD’s program of retrofitting construction equipment to reduce air pollution.
- ▶ **Policy AQ.5.1:** Encourage employers to participate in SMAQMD’s public education programs.

The JOC Relocation Project is jointly proposed by Reclamation, a Federal agency, and DWR, a State agency. The Proposed Site is Federal property owned by Reclamation. A Federal agency operating on Federal land is not required to comply with regional or local plans, policies, regulations, or ordinances. However, a Federal agency normally will conform with local regulations and State laws that do not interfere with the agency’s ability to “carry out the purposes of the government,” such as building, health, and safety codes (*Fort Leavenworth R.R. v. Lowe*, 114 U.S. 525 [1885]).

Activities at the Proposed Site would not be required to comply with regional or local regulations, but Reclamation has committed to a “good neighbor” policy and would conform with those regulations to the extent that such compliance would not conflict with or hinder the mission and purposes of the agency or the departments located at the site. Activities at the Alternative 1 Site would take place on private property and would require full compliance with all regional and local regulations.

Toxic Air Contaminants TACs are not considered criteria air pollutants and are not specifically addressed through the setting of ambient air quality standards. Instead, EPA and ARB regulate hazardous air pollutants (HAPs) and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology (MACT and BACT) to limit emissions. These in conjunction with additional rules set forth by SMAQMD establish the regulatory framework for TACs (see discussion under “State and Local Toxic Air Contaminant Programs” below).

Federal Hazardous Air Pollutant Program

EPA has programs for identifying and regulating HAPs. Title III of the CAAA directed EPA to promulgate national emissions standards for HAPs (NESHAPs). The NESHAPs for major sources of HAPs may differ from those for area sources. Major sources are defined as stationary sources with potential to emit more than 10 tons per year of any HAP or more

than 25 tons per year of any combination of HAPs; all other sources are considered area sources.

The CAAA called on EPA to promulgate emissions standards in two phases. In the first phase (1992–2000), EPA developed technology-based emissions standards designed to reduce emissions as much as feasible. These standards are generally referred to as requiring MACT. For area sources, the standards may be different, based on generally available control technology. In the second phase, EPA promulgated emissions standards based on health risks, which were deemed necessary to address risks remaining after implementing the technology-based NESHAP standards.

The CAAA also required EPA to promulgate vehicle or fuel standards with reasonable requirements for controlling toxic emissions of, at a minimum, benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of benzene, formaldehyde, and 1,3-butadiene. In addition, Section 219 of the CAAA required reformulated gasoline to be used in areas with the most severe ozone nonattainment conditions to further reduce mobile-source emissions.

State and Local Toxic Air Contaminant Programs

TACs can be separated into carcinogens and noncarcinogens based on the effects associated with exposure to the pollutant. For regulatory purposes, carcinogens are assumed to have no safe threshold below which health impacts would not occur and cancer risk is expressed as excess cancer cases per 1 million exposed individuals. Noncarcinogens differ because a safe level of exposure is assumed to exist below which no negative health impact would occur. These levels are determined on a pollutant-by-pollutant basis. Acute and chronic exposure to noncarcinogens is expressed using the Hazard Index, which is the ratio of expected exposure levels to exposure levels acceptable to human health.

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807 [Chapter 1047, Statutes of 1983]) and the Air Toxics Hot Spots Information and Assessment Act (AB 2588 [Chapter 1252, Statutes of 1987]). AB 1807 sets forth a formal procedure for ARB to designate substances as TACs. Research, public participation, and scientific peer review must occur before ARB can designate a substance as a TAC. To date, ARB has identified more than 21 TACs and adopted EPA's list of HAPs as TACs. Most recently, PM emissions from diesel exhaust (diesel PM) was added to the ARB list of TACs.

After a TAC is identified, ARB then adopts an airborne toxics control measure (ATCM) for sources that emit that particular TAC. If a safe threshold exists for a substance at which no toxic effect would occur, the control measure must reduce exposure below that threshold. If no safe threshold exists, the measure must incorporate BACT to minimize emissions; for example, the ATCM limits truck idling to 5 minutes (Title 13, Section 2485 of the California Code of Regulations).

ARB has adopted control measures for diesel PM and more stringent emissions standards for various on-road mobile sources of emissions, including transit buses and off-road

diesel equipment (e.g., tractors, generators). In February 2000, ARB adopted a new rule for public-transit bus fleets and emissions standards for new urban buses.

Recent and future milestones include the requirement for low-sulfur diesel fuel and tighter emissions standards for heavy-duty diesel trucks (2007) and off-road diesel equipment (2011) nationwide. Over time, replacing older vehicles will result in a vehicle fleet that produces substantially lower levels of TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1,3-butadiene, diesel PM) have been appreciably reduced over the last decade and will be reduced further in California through a progression of regulatory measures (e.g., Low Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations) and control technologies. With implementation of ARB's *Diesel Risk Reduction Plan*, diesel PM concentrations are expected to be reduced by 75% in 2010 and 85% in 2020 from the estimated 2000 level. Adopted regulations are also expected to continue to reduce formaldehyde emissions from cars and light-duty trucks. As emissions are reduced, risks associated with exposure to the emissions are also expected to be reduced.

At the local level, air pollution control or management districts may adopt and enforce ARB control measures. The siting of new stationary sources of TACs (e.g., generators, loading docks, industrial facilities) is subject to SMAQMD Rule 202 (New Source Review). Each new stationary source is evaluated to determine whether it has the potential to emit TACs. SMAQMD assesses the impact from TACs based on its guidance document—*Supplemental Risk Assessment Guidelines for New and Modified Sources*—as well as guidance documents from OEHHA, ARB, and the California Air Pollution Control Officers Association. SMAQMD requires emission controls, similar to BACT, called Toxic Best Available Control Technology (T-BACT) for certain sources.

In addition to T-BACT requirements, permits for equipment that may emit TACs may contain conditions required by EPA's NESHAPs and ARB's ATCMs (Rules 801 and 904). In short, a new stationary source of TACs would not be authorized to be constructed or permitted to operate if it would result in:

- ▶ an incremental increase in cancer risk greater than 10 in 1 million at any off-site receptor; and/or
- ▶ an off-site, ground-level concentration of noncarcinogenic TACs generated from the project that would result in a Hazard Index greater than 1 (unless approved by OEHHA).

These permitting requirements are identical to SMAQMD's thresholds of significance for TACs generated by stationary sources or land uses that included nonpermitted sources (e.g., truck distribution yards). Therefore, lead agencies can determine that a new stationary source of TACs that SMAQMD authorizes to be constructed and permits to operate would not exceed the applicable TAC thresholds of significance (SMAQMD 2009:5-7).

If a source cannot reduce the risk below the threshold of significance even after T-BACT has been implemented, SMAQMD will deny the permit required by the source. This helps to prevent new problems and reduces emissions from existing older sources by requiring them to apply new technology for controlling TACs when retrofitting emissions sources.

For the JOC Relocation Project, stationary sources that would emit TACs are one or more backup generators that may operate for brief periods during power outages. These generators would be subject to permitting by SMAQMD as described above, and permit requirements would include a limit to the number of hours per year that each generator may be operated.

Odors SMAQMD adopted a nuisance rule that addresses odor exposure. Rule 402 states that “a person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.” The provisions of Rule 402 do not apply to odors emanating from agricultural operations necessary for the growing of crops or raising of fowl or animals.

SMAQMD recommends that odor impacts be addressed in a qualitative manner and include a discussion about whether the project would result in excessive nuisance odors, as defined under the California Code of Regulations and Section 41700 of the California Health and Safety Code, and thus would constitute a public nuisance related to air quality.

Two situations increase the potential for odor problems. The first occurs when a new odor source is located near existing sensitive receptors. The second occurs when new sensitive receptors are developed near existing sources of odors. In the first situation, SMAQMD recommends operational changes, add-on controls, process changes, or buffer zones where feasible to address odor complaints. In the second situation, the potential conflict is considered substantial if the new sensitive receptor is at least as close as any other site that has already experienced substantial odor problems related to the odor source. For projects being developed near a source of odors where no nearby development has resulted in filed complaints and for odor sources being developed near existing sensitive receptors, SMAQMD recommends that the determination of potential conflict be based on the distance and frequency at which odor complaints from the public have occurred near a similar facility.

Odors in Sacramento County are regulated by SMAQMD, although no specific rules or standards related to odor emissions exist. Any actions related to odors are based on citizen complaints to local governments and/or SMAQMD.

3.2.2 Environmental Consequences and Mitigation Measures

Methods

Temporary and short-term emissions of criteria air pollutants and ozone precursors from construction activities and operations were assessed in accordance with methods recommended by SMAQMD. Where quantification was required, temporary, short-term construction and long-term operational emissions were modeled using the URBEMIS 2007 Version 9.2.4 computer program, as recommended by SMAQMD's *Guide to Air Quality Assessment in Sacramento County* (SMAQMD 2009). URBEMIS is designed to model construction emissions for land use development projects and allows for the input of project-specific information including building size, land use and type, disturbed acreage, and seasons and years in which construction occurs. Modeling was based on project-specific data, when available. However, when project-specific information (e.g., amount of land to be disturbed/graded per day, types of equipment to be used, number of construction employees) was not available, reasonable assumptions and default settings were used to estimate criteria air pollutant emissions.

Predicted temporary and short-term emissions caused by construction activities were compared with applicable SMAQMD thresholds for determination of significance. Although the primary purpose of estimating daily construction emissions is to analyze the project with respect to SMAQMD's mass emission threshold for construction-generated NO_x, SMAQMD also recommends reporting the emissions of ROG, PM₁₀, and PM_{2.5} for the purposes of added disclosure to readers of the environmental impact analysis (SMAQMD 2009:3-4).

Long-term operational exposure of sensitive receptors to emissions of TACs was assessed qualitatively. For the purposes of evaluating health risks, the guidance contained in ARB's *Air Quality and Land Use Handbook: A Community Health Perspective*, was used. The *Air Quality and Land Use Handbook* includes recommendations for the siting of sensitive receptors near facilities associated with TAC emissions, such as freeways and high-traffic roads, commercial distribution centers, dry cleaners, gasoline stations, and industrial facilities (ARB 2005). Additionally, guidance contained within SMAQMD's *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways, Version 1.0* (SMAQMD 2007) was used to assess exposures of sensitive receptors to nearby, off-site mobile sources.

Assumptions

Project Features A detailed list of modeling assumptions is provided in Appendix C1, "Air Quality Modeling Assumptions and Results." Key assumptions include, for construction activities, information such as the types and number of construction vehicles, number of construction workers, and hours of construction per day. Assumptions relating to operations include number of employees, square footage, and number of employee vehicles. These assumptions were derived based on the information about the project provided in Chapter 2.0, "Alternatives," and, where specific information was not available, by default settings in the modeling.

To conform with SMAQMD guidelines, the maximum daily disturbed acreage is assumed to be 25% of the total disturbed acreage for the Proposed Action and Alternative 1. The Proposed Site is approximately 25.5 acres; therefore, the maximum daily disturbed acreage is assumed to be 6.3 acres. The Alternative 1 Site is approximately 21.2 acres; therefore, the maximum daily disturbed acreage is assumed to be 5.3 acres.

Given that exhaust emission rates of the construction equipment fleet in the State are expected to decrease over time because of State-led efforts, maximum daily construction emissions were estimated using the earliest calendar when construction would begin (i.e., 2012). However, in later years, advancements in engine technology, retrofits, and turnover in the equipment fleet are anticipated to result in lower levels of emissions. This approach allows the analysis to generate conservative estimates of construction emissions, regardless of whether the project is constructed in one continuous two-year period or in two periods (see Chapter 2.0, “Alternatives”).

Project-generated emissions of criteria air pollutants (e.g., PM₁₀) and precursors (i.e., ROG and NO_x) were modeled using URBEMIS and based on general information provided in the project description and default SMAQMD-recommended settings and parameters attributable to the proposed land use types and site location. Because the construction phasing schedule was unknown at the time of preparation, the analysis assumes that the entire site would be rough graded during the initial construction period. This approach allows the analysis to generate conservative estimates of construction emissions, particularly PM₁₀, regardless of whether the project is constructed in one continuous two-year period or in two periods (see Chapter 2.0, “Alternatives”).

Long-term (i.e., operational) regional emissions of criteria air pollutants and precursors, including mobile- and area-source emissions, were also quantified using URBEMIS assuming that the buildings would be occupied by the year 2015. Area-source emissions were modeled according to the size and type of land uses proposed under all action alternatives. One of the objectives of the Proposed Action and Alternative 1 is to achieve a minimum of the (LEED®) Silver Rating. While various strategies can be used to achieve LEED Silver, the Proposed Action or Alternative 1 would, at a minimum, incorporate mandatory prerequisite measures that increase energy efficiency and conserve water resources. However, no emission benefits associated with the LEED Rating were assumed in this analysis.

Mobile-source emissions were modeled based on the total daily vehicle trips and vehicle miles traveled (VMT) that would result from project operations. This is a conservative assumption because the expected increase in trips or VMT from implementing the project would be small, since the Interim JOC houses approximately 500 employees and the project would provide space for approximately 600 employees. To ensure a conservative approach, this analysis does not subtract the existing trips from the approximately 500 existing employees and, instead, shows the maximum emissions associated with the project.

Analysis of traffic-related emissions is based on information and modeling results provided in Appendix C4a, “Traffic Impact Technical Report.”

SMAQMD Rules and Requirements Control of fugitive dust is required by SMAQMD Rule 403, as described above. To accomplish this requirement, all construction projects are required to implement SMAQMD's Basic Construction Emission Control Practices (SMAQMD 2009: 3-3 through 3-4):

- ▶ Water all exposed surfaces two times daily. Exposed surfaces include soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- ▶ Cover or maintain at least 2 feet of freeboard space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.
- ▶ Use street sweepers with a wet power vacuum to remove any visible trackout of mud or dirt on adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- ▶ Limit vehicle speeds on unpaved roads to 15 miles per hour.
- ▶ All roadways, driveways, sidewalks, and parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.
- ▶ Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (as required by the state airborne toxics control measure [Title 13, Section 2485 of the California Code of Regulations]). Provide clear signage that posts this requirement for workers at the entrances to the site.
- ▶ Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.

The JOC Relocation Project would comply with Rule 403, including Basic Construction Emission Control Practices, and other SMAQMD-required rules as listed above.

Criteria for Determining Significance of Effects

Determinations of significance in this EIS/EIR are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. These determinations are provided pursuant to CEQA. Guidance from SMAQMD is also considered. The Proposed Action and alternatives under consideration would be considered to have a significant impact related to air quality and odors if they would:

- ▶ conflict with or obstruct implementation of the applicable air quality plan,
- ▶ violate any air quality standard or contribute substantially to an existing or projected air quality violation,
- ▶ result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable NAAQS or CAAQS

(including releasing emissions that exceed quantitative thresholds for ozone precursors),

- ▶ expose sensitive receptors to substantial pollutant concentrations, or
- ▶ create objectionable odors affecting a substantial number of people.

As stated in Appendix G, the significance criteria established by the applicable air quality management district may be relied on to make the above determinations. Thus, in accordance with SMAQMD-recommended thresholds for evaluating project-related air quality impacts (SMAQMD 2009), implementation of the Proposed Action or alternatives under consideration would result in a significant impact if it would:

- ▶ generate construction-related criteria air pollutant or precursor emissions that exceed the SMAQMD-recommended threshold of 85 lb/day for NO_x, or result in or substantially contribute (at a level equal to or greater than 5%) to emissions concentrations of PM₁₀ and PM_{2.5} that exceed the NAAQS or CAAQS;
- ▶ generate long-term regional criteria air pollutant or precursor emissions that exceed the SMAQMD-recommended threshold of 65 lb/day for ROG and NO_x, or result in or substantially contribute (at a level equal to or greater than 5%) to emissions concentrations of PM₁₀ and PM_{2.5} that exceed the NAAQS or CAAQS;
- ▶ contribute to localized concentrations of air pollutants at nearby receptors that would exceed applicable ambient air quality standards;
- ▶ expose sensitive receptors to TAC emissions that exceed an incremental increase of 10 in 1 million for the carcinogenic risk (i.e., the risk of contracting cancer) and/or a noncarcinogenic Hazard Index of 1.0 for the Maximally Exposed Individual (for stationary-source TAC emissions); or
- ▶ expose sensitive receptors to excessive nuisance odors, as defined under SMAQMD Rule 402 (see “Odors” above).

SMAQMD further recommends that PM₁₀ emissions be addressed as a localized pollutant. Thus, SMAQMD considers PM₁₀ emissions to be a significant impact at the project level if they would exceed SMAQMD’s concentration-based threshold of significance at an off-site receptor location. Because PM_{2.5} is a subset of PM₁₀, SMAQMD assumes that construction projects that do not exceed SMAQMD’s concentration-based PM₁₀ threshold would also be considered to generate less-than-significant concentrations of PM_{2.5}.

SMAQMD recommends that lead agencies model the PM₁₀ emission concentrations generated by construction activity for all projects unless they meet both of the following conditions:

- ▶ The project would implement all Basic Construction Emission Control Practices.

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- ▶ The maximum daily disturbed area (i.e., grading, excavation, cut and fill) would not exceed 15 acres.

SMAQMD considers that projects meeting the above two conditions would not have the potential to exceed or contribute to the concentration-based threshold of significance for PM₁₀ and PM_{2.5} at an off-site location. Thus, the PM₁₀ emission concentrations generated by construction projects that meet these criteria are considered to have a less-than-significant impact with regard to construction-related emissions of PM₁₀.

SMAQMD has established a two-tiered qualitative screening threshold to determine whether a project would have the potential to exceed the ambient air quality standard for CO. A project would result in a less-than-significant impact on air quality for local CO if:

- ▶ traffic generated by the proposed project would not result in deterioration of intersection level of service (LOS) to LOS E or F, or
- ▶ the proposed project would not contribute additional traffic to an intersection that already operates at LOS E or F.

If the first tier of screening criteria is not met, SMAQMD provides a second tier of screening criteria. If all of the following criteria are met, the Proposed Action or alternative under consideration would result in a less-than-significant impact on air quality for local CO:

- ▶ The project would not result in an affected intersection experiencing more than 31,600 vehicles per hour.
- ▶ The project would not contribute traffic to a tunnel, parking garage, bridge underpass, urban street canyon, below-grade roadway, or other locations where horizontal or vertical mixing of air would be substantially limited.
- ▶ The mix of vehicle types at the intersection is not anticipated to be substantially different from the Sacramento County average (as identified by the EMFAC or URBEMIS models).

No significance thresholds have been established by SMAQMD for exposure of sensitive receptors to mobile-source TAC emissions.

Issues Not Discussed Further in This EIS/EIR

Sulfur Dioxide and Lead—Because the entire state is in attainment for SO₂ and most of the state is in attainment for lead (except for one area of Los Angeles County, which is not applicable to the project), SO₂ and lead are not discussed further in this EIS/EIR.

Exposure to Mobile-Source TAC Emissions—Because none of the roadways within 500 feet of the project sites (Hazel Avenue, Sunrise Boulevard, White Rock Road) approach average daily volumes of 100,000 vehicles under any of the alternatives, SMAQMD's *Recommended Protocol for Evaluating the Location of Sensitive Land Uses*

Adjacent to Major Roadways does not apply, and no impact from traffic-generated TAC emissions would occur. Therefore, this issue is not discussed further in this EIS/EIR.

Impact Analysis

See Table 3.0-2 for a summary of impacts and mitigation measures for Alternative 2 (incorporated by reference from the Mather Field Specific Plan FEIR).

Impact 3.2-1: Generation of Temporary, Short-Term Construction-Related Emissions of ROG, NO_x, PM₁₀, and PM_{2.5} That Exceed Thresholds

No Action

Under the No-Action Alternative, the Interim JOC would continue to operate at its existing location. Because expansion is infeasible at the Interim JOC, no construction would be possible at that site. Therefore, the No-Action Alternative would not result in an increase in short-term, construction-related emissions of ROG, NO_x, PM₁₀, and PM_{2.5}. Therefore, **no impact** would occur.

Proposed Action and Alternative 1

Construction emissions are described as “short term” or temporary in duration but have the potential to adversely affect air quality. Construction-related activities such as site preparation (e.g., excavation, grading, and clearing), use of off-road equipment, material delivery, and exhaust emissions from construction worker commutes would result in project-generated emissions of ROG, NO_x, PM₁₀, and PM_{2.5}.

Emissions of ROG and NO_x are associated primarily with exhaust from construction equipment. Given that exhaust emission rates of the construction equipment fleet in the State are expected to decrease over time as stricter standards take effect, maximum daily construction emissions were estimated using the earliest calendar year when construction could begin (i.e., 2012) to generate conservative estimates. If construction were to occur in later years or if construction occurs in two phases, advancements in engine technology, retrofits, and turnover in the equipment fleet are anticipated to result in lower levels of emissions.

Fugitive dust emissions are associated primarily with site preparation and vary as a function of soil silt content, soil moisture, wind speed, acreage of disturbance, VMT, and other factors. During typical construction projects, the majority of PM emissions are generated in the form of fugitive dust during ground disturbance activities. Most fugitive dust is generated during the grading phase. PM emissions are also generated by equipment exhaust and reentrained road dust from vehicle travel on paved and unpaved surfaces.

Construction of the project would occur over an approximately 2-year period. The first phase of construction would focus on preparing the site and connecting utilities, ensuring that sufficient utility infrastructure would be available to the project site. This phase would take approximately 10 months to complete. The

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second phase involves constructing buildings (e.g., excavating foundations; constructing piers, foundations, frame, and decking; placing the exterior surface on the building frame; and finishing the building interior) and final site work, such as landscaping. The second phase would take approximately 14 months. To estimate the timeline of each of the individual construction phases, a development timeline calculator was used (SJVAPCD 2008). Outputs from the calculator are designed to be used in URBEMIS 2007.

All construction projects are required to implement SMAQMD’s Basic Construction Emission Control Practices (SMAQMD 2009). Control of fugitive dust is required by SMAQMD Rule 403. In accordance with SMAQMD guidelines, the maximum daily disturbed acreage is assumed to be 25% of the total disturbed acreage for the Proposed Action and Alternative 1. The Proposed Site is approximately 25.5 acres; therefore, the maximum daily disturbed acreage would be assumed to be 6.3 acres. The Alternative 1 Site is approximately 21.2 acres; therefore, the maximum daily disturbed acreage would be assumed to be 5.3 acres. Fewer than 15 acres would be disturbed on any given day. Because the project would meet both of SMAQMD’s screening criteria presented under “Criteria for Determining Significance of Impacts” above, the impact from construction-generated PM₁₀ emissions would be less than significant.

Daily construction-related emissions of ROG, NO_x, PM₁₀, and PM_{2.5} are summarized in Table 3.2-4. Appendix C1, “Air Quality Modeling Assumptions and Results,” summarizes the URBEMIS modeling assumptions, inputs, and outputs.

Source	Emissions (lb/day) ¹			
	ROG	NO _x	PM ₁₀	PM _{2.5}
2012 construction activities	6.9	32.0	107.6	23.6
2013 construction activities	141.5	15.4	1.1	1.0
Maximum Daily Emissions	141.5	32.0	107.6	23.6
SMAQMD Significance Threshold²	—	85	AAQS	—
Exceeds Threshold?	NA	No	No	No
Notes: AAQS = ambient air quality standards; lb/day = pounds per day; ROG = reactive organic gases; NA = not applicable; NO _x = oxides of nitrogen; PM ₁₀ = respirable particulate matter; PM _{2.5} = fine particulate matter; SMAQMD = Sacramento Metropolitan Air Quality Management District.				
¹ Maximum daily construction emissions represent a summer construction day in the earliest construction year (2012).				
² SMAQMD has not identified mass emissions thresholds for construction-related emissions of ROG, PM ₁₀ or PM _{2.5} .				
Source: Modeling performed by AECOM in 2010				

As indicated in Table 3.2-4, daily construction-related emissions of the ozone precursor NO_x would not exceed SMAQMD’s significance threshold of 85 lb/day. SMAQMD has not established a construction emission threshold for ROG

because construction equipment emits low levels of these pollutants. The Proposed Action and Alternative 1 would both meet SMAQMD's screening criteria for PM₁₀ and would implement Basic Construction Emission Control Practices as part of project construction. For these reasons, both the Proposed Action and Alternative 1 would have a **less-than-significant direct** temporary and short-term construction-related impact with regard to ROG, NO_x, PM₁₀, and PM_{2.5}. No **indirect** impact would occur.

Mitigation Measure: No mitigation is required.

Impact 3.2-2: Generation of Long-Term Operational (Regional) Emissions of ROG and NO_x That Exceed SMAQMD Thresholds

No-Action

Under the No-Action Alternative, the Interim JOC would continue to operate at its existing location. Because expansion is infeasible at the Interim JOC, no increase in staffing would be possible at that site. Therefore, the No-Action Alternative would not result in an increase in long-term operational emissions of ROG and NO_x. The **direct** generation of operational emissions would continue unchanged, resulting in **no impact**.

An **indirect** increase in ROG and NO_x emissions could result if increased staffing becomes necessary to perform the required duties of the Reclamation, DWR, and NWS offices and operations centers housed at the Interim JOC. In that event, additional employees would be hired at other Reclamation, DWR, or NWS facilities in the Sacramento area, requiring these employees to travel to the Interim JOC to fulfill their job requirements rather than being housed in the same facility. Although the number of additional employees can be estimated at 100 (the amount of expansion anticipated at the new facility), the increase in VMT cannot be estimated without undue speculation. Thus the level of significance of this **indirect** impact relating to long-term operational emissions of ROG and NO_x would be considered too **speculative** for meaningful consideration.

Proposed Action and Alternative 1

Operation of the Proposed Action or Alternative 1 would result in long-term regional emissions of ROG, NO_x, and PM₁₀ associated with area sources, such as natural gas emissions, landscaping, application of architectural coatings, and vehicle-exhaust emissions.

The Proposed Action and Alternative 1 would allow for a 100-employee increase over existing conditions. The Proposed Action and Alternative 1 would relocate the 500 current employees, and their commute-related motor vehicle emissions, to another location within Sacramento County. This analysis uses the trip generation rates developed for the project in Appendix C4a, "Traffic Impact Technical Report," to assess long-term operational emissions, even though most of those emissions exist under current conditions.

According to the traffic data used to prepare this EIS/EIR section, full buildout of the project would result in approximately 2,275 daily vehicle trips. Operational emissions were modeled using the URBEMIS 2007 Version 9.2.4 computer program, as recommended by SMAQMD. Modeled operational emissions for the project are presented in Table 3.2-5.

Table 3.2-5 Summary of Modeled Long-Term Operational Emissions				
Source	Emissions (lb/day)			
	ROG	NO _x	PM ₁₀	PM _{2.5}
Operational Sources¹				
Mobile-Source Emissions	12.1	19.1	29.9	5.7
Area-Source Emissions	1.3	1.3	0	0
Total Operational Emissions	13.4	20.4	29.9	5.7
SMAQMD Significance Threshold¹	65	65	—	—
Exceed Threshold?	No	No	—	—
Notes: CAAQS = California ambient air quality standards; lb/day = pounds per day; µg/m ³ = micrograms per cubic meter; ROG = reactive organic gases; NO _x = oxides of nitrogen; PM ₁₀ = respirable particulate matter; PM _{2.5} = fine particulate matter; SMAQMD = Sacramento Metropolitan Air Quality Management District See Appendix C1 for modeling assumptions and results. ¹ SMAQMD has not identified mass emissions thresholds for operational emissions of PM ₁₀ or PM _{2.5} . Emission levels are shown for informational purposes only. Source: Modeling performed by AECOM in 2010				

Based on the modeling conducted, and as summarized in Table 3.2-5, operation of either the Proposed Action or Alternative 1 would result in total long-term regional emissions of approximately 13 lb/day of ROG, 20 lb/day of NO_x, 30 lb/day of PM₁₀, and 6 lb/day of PM_{2.5}. Operational area- and mobile-source emissions from implementing the Proposed Action or Alternative 1 would not exceed the SMAQMD-recommended threshold of 65 lb/day for ROG and NO_x and, therefore, would not result in or substantially contribute to emissions concentrations that exceed the NAAQS or CAAQS. As a result, this long-term **direct** impact would be **less than significant**. **No indirect impacts** would occur.

Mitigation Measure: No mitigation is required.

Impact 3.2-3: Generation of Long-Term, Operational, and Local Mobile-Source Emissions of CO That Exceed SMAQMD Thresholds

No-Action

Under the No-Action Alternative, the Interim JOC would continue to operate at its existing location. Because expansion is infeasible at the Interim JOC, no increase in staffing would be possible at that site. Therefore, the No-Action Alternative would not result in an increase in long-term, operational, and local

mobile-source emissions of CO. The **direct** generation of these emissions would continue unchanged, resulting in **no impact**.

An **indirect** increase in CO emissions could result if increased staffing becomes necessary to perform the required duties of the Reclamation, DWR, and NWS offices and operations centers housed at the Interim JOC. In that event, additional employees would be hired at other Reclamation, DWR, or NWS facilities in the Sacramento area, requiring these employees to travel to the Interim JOC to fulfill their job requirements rather than being housed in the same facility. This increase in VMT would likely contribute additional CO emissions because the Interim JOC is located at a distance from regional travel corridors and, as a result, staff members would increase the time spent idling at intersections or traveling in congested traffic. Although the number of additional employees can be estimated at 100 (the amount of expansion anticipated at the new facility), the increase in VMT cannot be estimated without undue speculation. Thus the level of significance of this **indirect** impact relating to long-term operational emissions of ROG and NO_x would be considered too **speculative** for meaningful consideration.

Proposed Action

The primary mobile-source pollutant of localized concern is CO. Local mobile-source emissions of CO near roadway intersections are a direct function of traffic volume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. Under specific meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels for local sensitive land uses such as residential units, hospitals, schools, and childcare facilities.

Based on modeling results described in Appendix C4a, “Traffic Impact Technical Report,” several intersections would operate at LOS F with the Proposed Action under Cumulative 2035 plus Project Conditions, even after implementation of identified traffic mitigation:

- ▶ Nimbus Road/Gold Country Boulevard (weekday a.m. and p.m. peak hours),
- ▶ Hazel Avenue/Gold Country Boulevard (weekday a.m. and p.m. peak hours),
- ▶ Hazel Avenue/Folsom Boulevard (weekday a.m. and p.m. peak hours),
- ▶ Hazel Avenue/US 50 eastbound ramps (weekday a.m. and p.m. peak hours),
and
- ▶ Hazel Avenue/US 50 westbound off-ramp/Tributary Point Drive (weekday a.m. and p.m. peak hours).

Because the Proposed Action would contribute additional traffic to these already-impaired intersections, the SMAQMD’s first-tier screening criteria for CO impact significance are not met.

Applying SMAQMD's second-tier screening criteria for CO impact significance, the roadways and intersections affected by the Proposed Action would not increase traffic volumes to more than 31,600 vehicles per hour. The project would not contribute traffic to a location where horizontal or vertical mixing of air would be substantially limited, and the mix of vehicle types at these intersections is not anticipated to have a greater percentage of heavy-duty vehicles and would not be substantially different from the Sacramento County average. Therefore, emissions of CO from local mobile sources and generated by long-term project operations of the Proposed Action would not result in or substantially contribute to emissions concentrations that exceed the 1-hour ambient air quality standard of 20 ppm or the 8-hour standard of 9 ppm, respectively. As a result, this impact would be **less than significant**. **No indirect** impacts would occur.

Alternative 1

Based on modeling results described in Appendix C4a, "Traffic Impact Technical Report," several intersections would continue to operate at LOS E or F with Alternative 1 under Cumulative 2035 plus Project Conditions even after implementation of identified traffic mitigation. Because Alternative 1 would contribute additional traffic to these already-impaired intersections, SMAQMD's first-tier screening criteria are not met.

The roadways and intersection volumes affected by Alternative 1 would not exceed 31,600 vehicles per hour. The project would not contribute traffic to a location where horizontal or vertical mixing of air would be substantially limited, and the mix of vehicle types at these intersections is not substantially different from the Sacramento County average. Therefore, based on SMAQMD's second tier of screening criteria, emissions of CO from local mobile sources and generated by long-term project operations of Alternative 1 would not result in or substantially contribute to emissions concentrations that exceed the 1-hour ambient air quality standard of 20 ppm or the 8-hour standard of 9 ppm. As a result, this impact would be **less than significant**. **No indirect impacts** would occur.

Mitigation Measure: No mitigation is required.

Impact 3.2-4: Exposure of Sensitive Receptors to Temporary, Short- and Long-Term Emissions of Toxic Air Contaminants

No-Action

Under the No-Action Alternative, the Interim JOC would continue to operate at its existing location. Because expansion is infeasible at the Interim JOC, no increase in staffing would be possible at that site. Therefore, the No-Action Alternative would not result in an increase in exposure of sensitive receptors to temporary, short- and long-term emissions of TACs. **No direct or indirect impact** would occur.

Proposed Action and Alternative 1

Construction of the Proposed Action or Alternative 1 would result in temporary and short-term emissions of diesel exhaust from on-site heavy duty equipment and off-site haul trucks. Diesel PM was identified as a TAC by the ARB in 1998.

The variable nature of construction activity affects the amount of time that equipment is typically within a distance that would expose sensitive receptors to substantial concentrations. Concentrations of mobile-source diesel PM emissions are typically reduced by 70% at a distance of approximately 500 feet (ARB 2005). The nearest sensitive receptors to the Proposed Site and the Alternative 1 Site are residences located adjacent to the sites. However, based on the preliminary site plans, equipment would not be operating within 500 feet of sensitive receptors at either site because of identified setbacks, buffer areas, and design features. Because the use of mobilized equipment would be temporary, diesel PM from construction activities would not be anticipated to result exposing sensitive receptors to significant levels of TACs.

In addition, the long-term operation of the project would not result in any nonpermitted sources of TAC emissions because backup generators, the only stationary source of TACs, would be regulated by SMAQMD through the permitting process and would only be allowed to function up to a specified number of hours per year. As a result, this impact would be **less than significant**. **No indirect impacts** would occur.

Mitigation Measure: No mitigation is required.

Impact 3.2-5: Exposure of Sensitive Receptors to Odorous Emissions

No-Action

Under the No-Action Alternative, the Interim JOC would continue to operate at its existing location. No odorous emissions have been identified by SMAQMD at this site since Reclamation, DWR, and NWS occupied it in 1992. Therefore, the No-Action Alternative would not result in exposures of sensitive receptors to odorous emissions. **No direct or indirect impact** would occur.

Proposed Action and Alternative 1

Minor sources of odors would be associated with constructing the project. The predominant source of power for construction equipment is diesel generators and engines. Exhaust odors from diesel engines and emissions associated with asphalt paving and the application of architectural coatings may be considered offensive to some individuals. Similarly, diesel-fueled trucks traveling on local roadways during the construction period would produce associated diesel exhaust fumes. However, odors associated with diesel fumes would be temporary and would disperse rapidly with distance from the source. Construction-generated and mobile-source odors would not result in the routine exposure of on-site receptors to objectionable odor emissions. Operation of the project would not be a source of odors or locate sensitive receptors near an existing source of odors, as described

in SMAQMD Rule 402. Therefore, the **direct** impact would be **less than significant**. **No indirect impacts** would occur.

Mitigation Measure: No mitigation is required.

Residual Significant Impacts

All air quality impacts would be less than significant; therefore, no residual significant impacts would occur.

3.2.3 Cumulative Impacts

The geographic scope for analyzing the cumulative effects on air quality is the SVAB, which includes all of Butte, Colusa, Glenn, Shasta, Sutter, Tehama, Yolo, and Yuba Counties; the western portion of Placer County; and the eastern portion of Solano County. By its very nature, air pollution is largely a cumulative impact. The Proposed Action and alternatives are under the jurisdiction of SMAQMD and are located in the SVAB. The nonattainment status of regional pollutants is a result of past and present development within the SVAB, and this regional impact is cumulative—that is, it is the combined result of all past and present projects, rather than being attributable to any one source. No single project would be sufficient in size, by itself, to result in nonattainment of the regional air quality standards. Instead, a project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and reasonably foreseeable future development projects (SMAQMD 2009). The nonattainment status of the SVAB with regard to ozone, PM₁₀, and PM_{2.5} is considered a significant cumulative impact.

The SMAQMD's thresholds of significance are relevant to whether a project's individual emissions would result in a cumulatively considerable incremental contribution to the SVAB's existing significant cumulative impact on air quality conditions. If a project's emissions would be less than these threshold levels, the project would not be expected to result in a cumulatively considerable incremental contribution to the significant cumulative impact (SMAQMD 2009).

The Proposed Action and Alternative 1 are consistent with demographic projections (e.g., population, employment, VMT) assumed in the applicable air quality attainment plan. As mentioned earlier, the number of employees is projected to increase by approximately 100 over the life of the project, from approximately 500 at the Interim JOC to approximately 600 at buildout of the project. The project's contribution to air pollutant emissions is expected to be similar to those of related projects in the region. The potential for significant cumulative effects of the Proposed Action and Alternative 1 is discussed below.

Construction-Related Impacts

The determination of cumulative air quality impacts for construction-generated ozone emissions is based on whether the Proposed Action or Alternative 1 would result in emissions that exceed the applicable project-level thresholds of significance. Daily construction-related emissions of the ozone precursor NO_x would not exceed SMAQMD's significance threshold of 85 lb/day. Therefore, NO_x emissions associated

with construction of the Proposed Action or Alternative 1 would not result in a cumulatively considerable incremental contribution to a significant cumulative impact.

Cumulative impacts associated with PM emissions are based on both the size of the project and whether that project implements basic control practices for construction emissions. The maximum disturbed acreage is approximately 6.3 acres for the Proposed Site and approximately 5.3 acres for the Alternative 1 Site. Fewer than 15 acres would be disturbed on any given day, and the project would implement basic construction emissions control practices required by SMAQMD. Therefore, PM emissions associated with construction of the Proposed Action or Alternative 1 would not result in a cumulatively considerable incremental contribution to a significant cumulative impact.

Long-Term Operational Impacts

The Proposed Action or Alternative 1 would not result in mass emissions of ROG and NO_x that exceed SMAQMD's significance threshold of 65 lb/day. According to SMAQMD, if operational emissions do not exceed project-level thresholds, the impacts related to the project would be less than significant for this cumulative impact. Therefore, the Proposed Action or Alternative 1 would not result in a cumulatively considerable incremental contribution to a significant cumulative impact.

Toxic Air Contaminants

Activities related to temporary, short-term construction and long-term operation of the Proposed Action or Alternative 1 could expose nearby existing off-site or proposed on-site sensitive receptors to TAC emissions. Because the use of mobilized equipment would be temporary, diesel PM from construction activities would not expose sensitive receptors to significant levels of TACs. In addition, long-term project operations would not result in any nonpermitted sources of TAC emissions. Therefore, the Proposed Action or Alternative 1 would not result in a cumulatively considerable incremental contribution to a significant cumulative impact.

Odors

Cumulative odor impacts involve exposure of on- and off-site sensitive receptors to odors generated on- or off-site. Construction of the Proposed Action or Alternative 1 would result in temporary, short-term, and less-than-significant odors in the vicinity of each site as described above for Impact 3.2-5. At the Proposed Site, there is not at present, and would not be in the future, a significant cumulative impact of odor exposure from past, present, and reasonably foreseeable future projects. Moreover, no odor complaints have been received by SMAQMD near the Proposed Site. Therefore, the Proposed Action would not result in a cumulatively considerable incremental contribution to a significant cumulative impact of odor exposure during construction of the Proposed Action.

Construction of Alternative 1 would result in odors associated with diesel and other construction-related fumes, but these would be temporary and would disperse rapidly with distance from the source. Construction-generated and mobile-source odors would not result in the routine exposure of on-site receptors to objectionable odor emissions. Although there is a significant cumulative impact from odors caused by solvent fumes at various nearby painting and body repair facilities, the temporary construction-generated

odors associated with Alternative 1, for the reasons stated above, would not result in a cumulatively considerable incremental contribution to the existing and likely future significant cumulative impact.

Neither the Proposed Action nor Alternative 1 would result in long-term operational odors, as they would not involve numerous mobile diesel sources, or stationary or area sources of odorous emissions. There would not be a significant cumulative impact of odor exposure at the Proposed Site as there are no other major sources of odor. Although there is an existing significant cumulative impact of odor exposure at Alternative 1 from nearby solvent fumes from numerous sources, operations of Alternative 1 would have negligible incremental contribution to this existing odor impact. Consequently, the Proposed Action or Alternative 1 would not result in a cumulatively considerable incremental contribution to a significant cumulative impact of odor exposure during JOC operations.

Impact 3.2-6: Exposure of Sensitive Receptors to Odorous Emissions (Cumulative)

Because locating sensitive receptors (i.e., JOC workers) in an existing industrial area at the Alternative 1 Site could expose them to existing and future odors, 10 years of odors complaints for the Alternative 1 Site were obtained from SMAQMD and reviewed. Numerous complaints were noted within about 2,000 feet from the Alternative 1 Site, mostly on Fitzgerald Road. Solvent fumes from various nearby painting and auto body repair facilities accounted for the majority of the complaints and could enter the new JOC's heating, ventilation, and air conditioning system. As specified by SMAQMD, the potential odor conflict is considered substantial "if the new sensitive receptor is at least as close as any other site that has already experienced substantial odor problems related to the odor source." Furthermore, SMAQMD recommends that "the determination of potential conflict be based on the distance and frequency at which odor complaints from the public have occurred near a similar facility." Given the numerous complaints identified above regarding the existing conditions, Alternative 1 would result in cumulatively considerable incremental exposures of new sensitive receptors (i.e., JOC staff) to existing and future odors from nearby industrial sources, especially painting and auto body repair facilities. No feasible mitigation measures are available to reduce this impact to a less-than-significant level. This cumulative impact of exposures of new sensitive receptors to major existing and likely future odors is considered to be **significant and unavoidable**.

3.3 Biological Resources

3.3.1 Affected Environment

This section describes the affected environment related to the common and sensitive biological resources on and surrounding the Proposed Site and the Alternative 1 Site, and evaluates potential impacts on the biological resources at these sites. The methods for conducting the evaluation are described in “Methods and Assumptions” below.

Reconnaissance-level surveys were conducted at the Proposed Site on November 3 and December 29, 2010, and at the Alternative 1 Site on January 10, 2011. A focused protocol-level survey for elderberry shrubs and the valley elderberry longhorn beetle (VELB) was conducted on December 29, 2010.

Environmental Setting

The Proposed Site is undeveloped. Mounds of dredge tailings, mainly cobble-sized rock, from past mining operations cover the entire site (Natural Resources Conservation Service [NRCS] 2009). As a result, the site is characterized by undulating topography with depressions between the mounds that pond during the rainy season and, in some cases, support seasonal or perennial wetland plant species. Vegetation and wildlife habitat on the site include annual grassland with weedy (ruderal) plants, oak woodland, freshwater marsh and open water, and occasional terrestrial shrubs and riparian shrubs and trees. Much of the wetland and riparian vegetation could have colonized the site after the disturbance. Residential development surrounds much of the southern half of the site, while the remainder of the site is surrounded by similar disturbed habitats as those on the site. The Parkway is west of the site, with Nimbus Road, Jedediah Smith Memorial Trail, DFG regional office, and Nimbus Fish Hatchery located north between the site and the American River.

Like the Proposed Site, the Alternative 1 Site is undeveloped and, although not as evident, dredge tailings cover the entire site (NRCS 2009). The site has occasional mounds of concrete and asphalt debris; however, the site appears to have been excavated and the topography is relatively flat. Vegetation and wildlife habitat on the site are limited to annual grassland with ruderal plants and a few native shrubs. An area of undeveloped land adjacent and to the west and north of the site contains the same vegetation, but the parcel to the north also contains a stand of woodland. The Folsom South Canal extends along the site’s eastern boundary. None of this adjacent property would be affected by this project. The entire site is surrounded by commercial, light industrial, and some residential development.

Habitat Types Habitat types described below are based on those of the classification systems presented in *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) and *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988), but were modified to reflect the specific conditions observed on the project sites because of the disturbed environment at the Proposed and Alternative 1 Sites. A complete list of the common and scientific names of all plant and wildlife

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species mentioned below is provided in Appendix C3, “Common and Scientific Names of Plant and Wildlife Species Noted in the EIS/EIR.”

The following documents were used as references during preparation of this biological resources section:

- ▶ Draft Environmental Assessment for the Nimbus Fish Hatchery Weir Replacement Project (Reclamation 2005) and
- ▶ Draft Environmental Impact Statement/Environmental Impact Report for the Nimbus Hatchery Fish Passage Project, Rancho Cordova, California (Reclamation 2010).

Habitat types on the Proposed Site consist of annual grassland, oak woodland, freshwater marsh, and seasonal wetland (Exhibit 3.3-1a and b), while the Alternative 1 Site is characterized exclusively by annual grassland habitat (Exhibit 3.3-2). A small number of riparian tree and shrub species, including Fremont cottonwood, red willow, tree tobacco, and arroyo willow, also appear occasionally across the Proposed Site. These scattered trees and shrubs were not mapped as a separate habitat type because they lack sufficient characteristics, especially associated species, to constitute a riparian plant community.

Annual Grassland Approximately 8.3 acres of annual grassland occur on the Proposed Site. This community is dominated by a mixture of ruderal (i.e., weedy) annual grasses and forbs. Native grasses, shrubs, and wildflowers are uncommon in this habitat type but they were observed occasionally during field surveys. Characteristic nonnative grass species include wild oat, ripgut brome, soft chess, Bermuda grass, hare barley, and Italian ryegrass.

Common nonnative ruderal forbs include mustard, Italian thistle, yellow star-thistle, poison hemlock, horseweed, redstem filaree, cut-leaved geranium, prickly lettuce, and vetch. Native species include coyote brush, miner’s lettuce, California poppy, Fitch’s tarweed, bush monkeyflower, and blue elderberry.

Approximately 21.2 acres of annual grassland occur on the Alternative 1 Site. This community covers the entire site and contains the same annual grass and ruderal species found on the Proposed Site, with the addition of blessed milk thistle and stinkwort, but lacks the native grasses and wildflowers. One native shrub, coyote brush, occurs occasionally on the site.

Oak Woodland Approximately 6.2 acres of oak woodland occur on the Proposed Site. This community is characterized by interior live oak and valley oak species. The southeast half of the Proposed Site includes this oak woodland community and a smaller patch exists along the northern border. Other species associated with this community include foothill pine, which appears occasionally on the site, and poison oak, which is the primary understory species. Other associated species include coyote brush, blue elderberry, miner’s lettuce, and various grasses that are also characteristic of the annual grassland.

Oak woodlands do not occur on the Alternative 1 Site.



Source: Sacramento County 2009

Exhibit 3.3-1a: Habitat at the Proposed Site (Campus-Style Option)

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Source: Sacramento County 2009

Exhibit 3.3-1b: Habitat at the Proposed Site (Three-Story Option)



Source: Sacramento County 2009

Exhibit 3.3-2: Habitat at the Alternative 1 Site

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Freshwater Marsh The Proposed Site includes approximately 0.8 acre of freshwater marsh. This habitat occurs in three depressions surrounded by dredge tailings deposited from past mining activity, and at least some of the depressions were used as waste ponds by the Libby Olive Processing Plant from 1917 to 1976. Shallow water collects in the depressions following precipitation during the winter and early spring wet season and likely remains throughout the spring and into the summer. As a result, numerous perennial plant species suited to wetlands are present. No standing water was observed in the ponds during the November 2010 site visit, but the soils likely remain saturated throughout the year, as evidenced by the presence of perennial wetland plants. The deepest and largest area supporting this community is located on the northern border of the site (which may have formerly been associated with the Hazel Avenue Ponds, a discharge area for olive plant processing water) and is dominated by dense areas of common tule and narrow-leaved cattail around the perimeter. Other freshwater marsh species in this and the other two ponds include common nutsedge, seacoast bulrush, and Mexican rush. Seasonal standing water or unvegetated soil appears in the center of the depressions.

Freshwater marsh does not occur on the Alternative 1 Site.

Seasonal Wetlands The Proposed Site includes approximately 0.2 acre of seasonal wetlands. This habitat occurs in topographic depressions located on the southwest and central portion of the site. These areas become inundated and saturated temporarily following heavy winter precipitation events, but the majority of the surface water infiltrates somewhat quickly into the soil and the surrounding mounds of gravel and cobble associated with the dredge tailings. Small portions of these wetlands, generally low areas, retain shallow surface water longer, but it is unclear how long it remains after precipitation events or into the spring.

Four days before a wetland delineation performed on February 20, 2011, 2.76 inches of precipitation was recorded locally at a National Weather Service-operated gauge at Folsom Dam (DWR 2011). Despite this substantial precipitation, very little surface water was observed in the seasonal wetlands at the time. During a second delineation performed on February 24, 2011, no precipitation had been recorded at the same gauge for 4 days (DWR 2011), and nearly all of the previously observed surface water was gone. The exception was one very small area of highly turbid water in the lowest portion of one of the wetlands. Characteristic plant species in this community include Mexican rush, seacoast bulrush, Italian ryegrass, barley and beard grass species, and other grass and forb species not identifiable at the time of surveys.

Seasonal wetlands do not occur on the Alternative 1 Site.

Barren Ground and Developed Land Approximately 9.0 acres of barren (unvegetated) ground appear on the Proposed Site in the form of rocky dredge tailings and soil used for fill; approximately 1.0 acre of developed land occurs on the Proposed Site as paved road that borders the northern portion of the site.

No barren ground is found at the Alternative 1 Site.

Wildlife Because of the proximity of the Proposed Site to the American River and the Parkway, the Proposed Site supports a diversity of wildlife. The Proposed Site includes oak woodland, freshwater marsh, seasonal wetland, and grassland habitats. A complete list of the common and scientific names of all plant and wildlife species mentioned below (including scientific names) is provided in Appendix C3, “Common and Scientific Names of Plant and Wildlife Species Noted in the EIS/EIR.”

The oak woodland habitat and scattered large trees on the Proposed Site provide roosting and potential breeding habitat for both resident and migratory raptors, while the open areas of annual grassland provide foraging habitat. Much of the vegetation associated with the annual grassland, however, is dominated by yellow star-thistle and other tall ruderal species that decrease the quality of foraging habitat. Oak woodlands are also attractive to many other common wildlife species in Sacramento County, such as black-tailed deer, tree squirrels, bats, and a variety of birds.

Some of the common bird species either observed or expected to occur on the Proposed Site include Cooper’s hawk, western scrub-jay, oak titmouse, red-tailed hawk, red-shouldered hawk, northern flicker, American crow, American kestrel, black phoebe, mourning dove, blackbirds, finches, warblers, and sparrows. Other common wildlife expected to occur on the site includes black-tailed jackrabbit, gopher snake, California ground squirrel, and western fence lizard.

The Alternative 1 Site is located within the city of Rancho Cordova and is completely surrounded by development. The site only includes annual grassland vegetation and appears as a fragment of the large areas of relatively undeveloped rangeland approximately 5 miles to the south and east; however, the Alternative 1 Site is highly disturbed and now covered entirely by dredge tailings. Due to the site’s isolated location and homogeneous habitat, the site supports a low diversity of wildlife. Nevertheless, numerous common bird species such as mourning dove, blackbirds, finches, and sparrows; and mammals such as black-tailed jackrabbit, California ground squirrel, and western fence lizard inhabit the site. Other species observed during a reconnaissance-level field survey conducted on January 10, 2011 included coyote and western bluebird, which likely occur occasionally.

Sensitive Biological Resources Sensitive biological resources addressed in this section include those that are afforded consideration or protection under CEQA, California Fish and Game Code, California Endangered Species Act (CESA), Federal Endangered Species Act (ESA), Clean Water Act (CWA), and Porter-Cologne Water Quality Control Act (Porter-Cologne Act).

Special-status species addressed in this section include plants and animals in the following categories:

- ▶ species officially listed by the State of California or the Federal government as endangered, threatened, or rare;

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- ▶ species that are candidates for State or Federal listing as endangered, threatened, or rare;
- ▶ taxa (i.e., taxonomic categories or groups) that meet the criteria for listing, even if not currently included on any list, as described in California Code of Regulations Section 15380 of the State CEQA Guidelines, as amended;
- ▶ wildlife species identified by DFG as “California species of special concern” because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction (these species receive no formal protection under the California Fish and Game Code);
- ▶ plants considered jointly by DFG and the California Native Plant Society (CNPS) to be “rare,” “threatened,” or “endangered,” which consist of the following California Rare Plant Ranks (CRPR), formerly referred to as “CNPS Lists”:
 - CRPR 1A—Plants presumed to be extinct in California;
 - CRPR 1B—Plants that are rare, threatened, or endangered in California and elsewhere; and
 - CRPR 2—Plants that are rare, threatened, or endangered in California but more common elsewhere;
- ▶ species listed as “fully protected” under the California Fish and Game Code; and
- ▶ species afforded protection under local or regional planning documents.

Sensitive habitats are those that are of special concern to resource agencies or that are afforded specific consideration under CEQA, Section 1602 of the California Fish and Game Code, Section 404 of the CWA, and the Porter-Cologne Act. A complete list of the common and scientific names of all plant and wildlife species mentioned below (including scientific names) is provided in Appendix C3, “Common and Scientific Names of Plant and Wildlife Species Noted in the EIS/EIR.”

Special-Status Plants Special-status plant species were identified from database searches of the California Natural Diversity Database (CNDDDB) (2010), the CNPS Inventory of Rare and Endangered Plants (2010), and the U.S. Fish and Wildlife Service’s (USFWS’s) Endangered Species Web site (2010). No Federally listed plant species were identified from these searches.

A total of nine special-status plant species were evaluated for their potential to occur on the Proposed and Alternative 1 Sites. Seven species were identified within a 3-mile radius of the Proposed and Alternative 1 Sites from CNDDDB geographic information system (GIS) data in polygon format (Exhibit 3.3-3), and two additional species were identified from the CNDDDB, CNPS, and USFWS databases by searching the Buffalo Creek, Carmichael, Citrus Heights, and Folsom U.S. Geological Survey (USGS) 7.5-minute quadrangles.

Of the nine special-status plant species evaluated, five species (Ahart's dwarf rush, legenere, pincushion navarretia, slender Orcutt grass, and Sacramento Orcutt grass) were eliminated from further consideration because they are restricted to vernal pool habitat, which does not occur on either project site. A sixth species (Brandegees clarkia) was eliminated because it is restricted to elevations greater than 230 feet, and a seventh species (stinkbells) was eliminated due to its affinity to serpentinite and/or clay soils.

The level of disturbance on the Proposed and Alternative 1 Sites means that the two remaining species (Boggs Lake hedge-hyssop and Sanford's arrowhead) have low potential to occur; however, because of those species' habitat requirements and the wetland communities found on the Proposed Site, they cannot be completely ruled out. Table 3.3-1 below lists each of these species with their listing status, habitat and blooming period, and potential to occur.

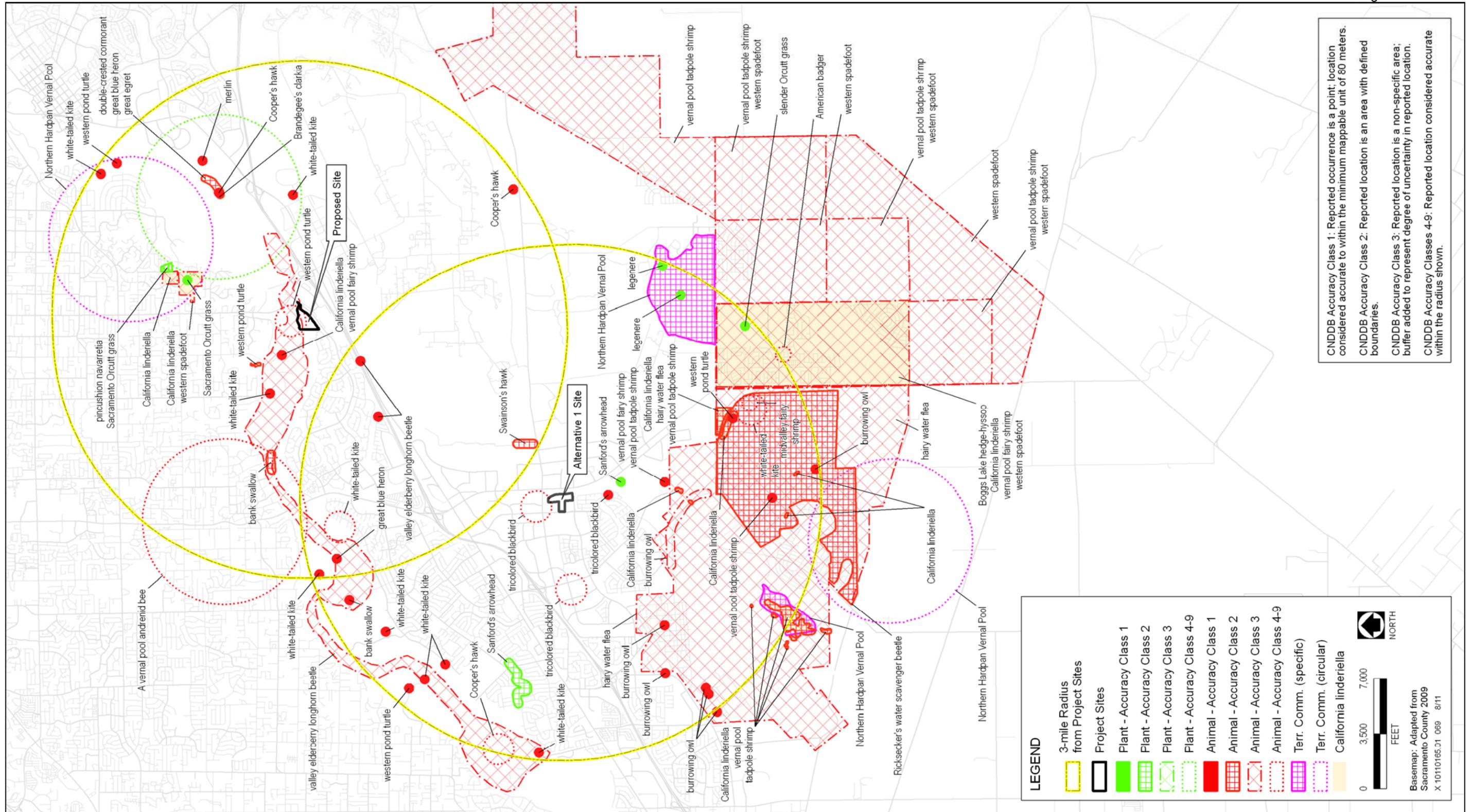
Special-Status Wildlife

Overview Special-status fish and wildlife species were researched from database searches of the CNDDDB (2010) and USFWS Endangered Species Web site (2010). Overall, 36 species were evaluated for their potential to occur on the Proposed and Alternative 1 Sites. Twenty-one species were identified within a 3-mile radius of the Proposed and Alternative 1 Sites from CNDDDB's GIS data in polygon format (Exhibit 3.3-3). Eleven species were identified from the CNDDDB and USFWS databases by searching the Buffalo Creek, Carmichael, Citrus Heights, and Folsom USGS 7.5-minute quadrangles. Four species were added because of undocumented sightings or knowledge of these species having potential to occur in the region. No fish species were identified in the database search.

Ten Federally listed special-status fish and wildlife species were identified from these searches; however, five of those species were eliminated from further consideration because they are fish or species restricted to vernal pool habitats that do not occur on the Proposed or Alternative 1 Sites. Three Federally listed species have the potential to occur on the project sites and, therefore, are evaluated further: California tiger salamander, VELB, and California red-legged frog.

Twenty-four additional species were identified in the CNDDDB searches; however, 14 of these species were eliminated from further consideration because they are either restricted to habitats (e.g., riverine and vernal pool) that do not occur on either project site or because they do not meet the definition of special-status species as provided above (e.g., egrets and herons protected for rookery sites). The remaining 10 species, as well as the three Federally listed species identified above, are listed in Table 3.3-2 with their listing status, habitat affiliation, and potential to occur.

Table 3.3-1 Special-Status Plant Species with Potential to Occur on the Proposed Site or Alternative 1 Site					
Species	Status ¹			Habitat and Blooming Period	Potential for Occurrence ²
	USFWS	DFG	CNPS/ CRPR		
Bogg's Lake hedge-hyssop <i>Gratiola heterosepala</i>	–	E	1B	Lake margin marshes and swamps, vernal pools, and other seasonal wetlands, primarily in clay soils; 30 to 8,000 foot elevation; blooms April–August.	Could occur in wetland habitat on the Proposed Site, but the dredge tailing substratum provides poor soil and habitat conditions; the closest CNDDDB occurrence is approximately 6 miles south in an area mapped as non-specific in 1993. Unlikely to occur on Alternative 1 Site due to lack of suitable habitat.
Sanford's arrowhead <i>Sagittaria sanfordii</i>	–	–	1B	Shallow freshwater marshes and swamps; below 2,200 foot elevation; blooms May–October.	Could occur in wetland habitat on the Proposed Site, but the dredge tailing substratum provides poor soil and habitat conditions; the closest CNDDDB occurrence is approximately 4 miles southwest of in a drainage area and wetland east of the Folsom South Canal. Unlikely to occur on Alternative 1 Site due to lack of suitable habitat.
<p>Notes: CNDDDB = California Natural Diversity Database; CNPS = California Native Plant Society; CRPR = California Rare Plant Rank; DFG = California Department of Fish and Game; USFWS = U.S. Fish and Wildlife Service.</p> <p>¹ Legal Status Definitions</p> <p>California Department of Fish and Game:</p> <p>E Endangered (legally protected)</p> <p>California Native Plant Society Categories:</p> <p>1B Plant species considered rare or endangered in California and elsewhere (protected under the California Environmental Quality Act, but not legally protected under the federal Endangered Species Act or the California Endangered Species Act)</p> <p>² Potential for Occurrence Definitions</p> <p>Could occur: Suitable habitat is available; however, there are little to no other indicators that the species might be present.</p> <p>Unlikely to occur: Species is unlikely to be present due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.</p> <p>Sources: CNDDDB 2010; CNPS 2010; Hickman 1993; data compiled by AECOM in 2010</p>					



Source: CNDDDB 2010

Exhibit 3.3-3: CNDDDB Information on Special-Status Species near the Proposed and Alternative 1 Sites

Table 3.3-2 Special-Status Wildlife with Potential to Occur on the Proposed Site or Alternative 1 Site				
Species	Listing Status ¹		Habitat	Potential for Occurrence ²
	Federal	State		
Invertebrates				
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	T	–	Vernal pools	Unlikely to occur in the seasonal wetlands on the Proposed Site due to constant high turbidity and short-lived inundation. Unlikely to occur on Alternative 1 Site due to lack of aquatic habitat.
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	T/PD	–	Elderberry shrubs below 3,000 feet in elevation, especially in riparian habitat.	Could occur due to the presence of elderberry shrubs on the Proposed Site; CNDDDB occurrences are documented less than 1 mile away along on the American River. Unlikely to occur on Alternative 1 Site due to lack of suitable habitat.
Vernal pool tadpole shrimp <i>Lepidurus packardi</i>	E	–	Vernal pools	Unlikely to occur in the seasonal wetlands on the Proposed Site due to constant high turbidity and short-lived inundation. Unlikely to occur on Alternative 1 Site due to lack of aquatic habitat.
Amphibians and Reptiles				
Western pond turtle <i>Actinemys marmorata</i>	–	SC	Permanent or nearly permanent water in a wide variety of habitats with basking sites and suitable uplands for nesting; nest in nearby uplands with sparse vegetation.	Unlikely to occur on the Proposed Site because the wetlands dry out in the summer; Unlikely to occur on Alternative 1 Site due to lack of suitable habitat. Several CNDDDB occurrences are documented within the 3-mile radius of the Proposed and Alternative 1 Sites, but they are all in creeks, ponds, or the American River and other permanent waters.
California tiger salamander <i>Ambystoma californiense</i>	T	C	Vernal pools and seasonal wetlands with a minimum 10-week inundation period and surrounding uplands; primarily in grasslands with burrows and other belowground refugia (e.g., rock or soil crevices).	Unlikely to occur on the Proposed Site because the wetlands are isolated and surrounded by development, grassland habitat is degraded and composed mainly of dredge tailings that lack friable soils and upland refugia; no CNDDDB occurrences are documented within the 3-mile radius, and the nearest occurrence is from 2004 and is more than 17 miles southeast in a stockpond off of Ione Road. Unlikely to occur on Alternative 1 Site due to lack of suitable habitat.

Table 3.3-2				
Special-Status Wildlife with Potential to Occur on the Proposed Site or Alternative 1 Site				
Species	Listing Status ¹		Habitat	Potential for Occurrence ²
	Federal	State		
California red-legged frog <i>Rana aurora draytonii</i>	T	SC	Inhabits streams, lakes, and ponds, often with dense, shrubby, or emergent vegetation.	Unlikely to occur on the Proposed Site because the wetlands are isolated and surrounded by development, grassland habitat is degraded and composed mainly of dredge tailings that lack friable soils and upland refugia; no CNDDDB occurrences are documented within the 3-mile radius of the Proposed Site, the species is presumed extirpated from the valley floor; the nearest occurrence is over 7.5 miles northeast in El Dorado County, and the nearest reproducing population is more than 30 miles east near Pollock Pines. Unlikely to occur on Alternative 1 Site due to lack of suitable habitat.
Birds				
Tricolored blackbird <i>Agelaius tricolor</i> (nesting colony)	–	SC	Forages in agricultural lands and grasslands; nests in marshes, riparian scrub, and other areas that support cattails or dense thickets of shrubs or herbs.	Could occur on the Proposed Site because freshwater marsh habitat provides marginal nesting and foraging habitat; three CNDDDB occurrences are documented 3.5 miles or more to the southwest, near the Alternative 1 Site, but all are extirpated by development. Unlikely to occur on Alternative 1 Site due to lack of suitable habitat.
Burrowing owl <i>Athene cucularia</i> (burrow sites)	–	SC	Nests and forages in grasslands, agricultural lands, open shrublands, and open woodlands with existing ground squirrel burrows or friable soils.	Unlikely to occur on the Proposed Site and Alternative 1 Site because the substratum on both sites consists mainly of rocky dredge tailings that is not friable and unsuitable for nesting.
Swainson's hawk <i>Buteo swainsoni</i> (nesting)	–	T	Forages in grasslands and agricultural lands; nests in riparian and isolated trees.	Could occur on the Proposed Site due to suitable woodland habitat, but the site is beyond typical nesting range; Unlikely to occur on the Alternative 1 Site due to lack of suitable nesting habitat. The grassland on both sites consists of tall ruderal vegetation and is poor foraging habitat. The closest CNDDDB occurrence is 0.7 miles east of the Alternative 1 Site in large undeveloped areas of rangeland with large trees.
White-tailed kite <i>Elanus leucurus</i> (nesting)	–	FP	Forages in grasslands and agricultural fields; nests in riparian zones, oak woodlands, and isolated trees.	Likely to occur on the Proposed Site due to suitable woodland habitat; numerous CNDDDB occurrences are documented in the vicinity along the American River. Unlikely to occur on Alternative 1 Site due to lack of suitable nesting habitat.

Table 3.3-2 Special-Status Wildlife with Potential to Occur on the Proposed Site or Alternative 1 Site				
Species	Listing Status ¹		Habitat	Potential for Occurrence ²
	Federal	State		
Bald eagle <i>Haliaeetus leucocephalus</i> (nesting and wintering)	D	E/FP	Forage primarily in large inland fish-bearing waters with adjacent large trees or snags; occasionally in uplands with abundant rabbits, other small mammals, or carrion. Often roosts communally in winter.	Could occur on the Proposed Site, roosting in woodlands, but nesting is unlikely. Unlikely to occur on Alternative 1 Site due to lack of woodland habitat. No CNDDDB occurrences are documented within the 3-mile radius of the Proposed and Alternative 1 Sites; one individual, likely foraging, was observed in winter on power lines near the Nimbus Fish Hatchery.
Mammals				
Pallid bat <i>Anthrozous pallidus</i>	–	SC	Desert, grassland, shrubland, woodland and forest habitats; most common in open dry areas with rocky areas for roosting; may also roost in oak hollows, under bridges, and in buildings.	Could occur on the Proposed Site due to suitable roosting habitat in oak and other trees. Unlikely to occur on Alternative 1 Site due to lack of woodland or other suitable habitat.
Western mastiff bat <i>Eumops perotis californicus</i>	–	SC	Open, arid coastal scrub, chaparral, grassland, conifer forest, and deciduous woodland; primarily roosts in crevices on cliffs and rocks, but occasionally in tall trees and buildings.	Could occur on the Proposed Site due to suitable roosting habitat in oak and other trees. Unlikely to occur on Alternative 1 Site due to lack of woodland or other suitable habitat.
Western red bat <i>Lasiurus blossevilli</i>	–	SC	Wooded areas at lower elevations; typically roosts in snags and the foliage of riparian trees with moderately dense canopies; forages in grassland, shrubland, and open woodland habitat.	Could occur on the Proposed Site due to suitable roosting habitat in oak and other trees. Unlikely to occur on Alternative 1 Site due to lack of woodland or other suitable habitat.
Notes: CNDDDB = California Natural Diversity Database; ESA = Federal Endangered Species Act; USGS = U.S. Geological Survey.				
¹ Legal Status Definitions				
Federal:		State:		
PD: Proposed for Delisting		C: Candidate for listing (legally protected)		
D: Delisted (no ESA protection)		E: Endangered (legally protected)		
T: Threatened (legally protected)		FP: Fully protected (legally protected)		
		SC: Species of special concern (no formal protection other than CEQA consideration)		
		T: Threatened (legally protected)		
² Potential for Occurrence Definitions				
Could occur: Suitable habitat is available; however, there are little to no other indicators that the species might be present.				
Likely to occur: Habitat conditions, behavior of the species, known occurrences in the project vicinity, or other factors indicate a relatively high likelihood that the species would occur.				
Unlikely to occur: Species is unlikely to be present due to poor habitat quality, lack of suitable habitat features, or restricted current distribution of the species.				
Source: CNDDDB 2010; USFWS 2010				

Valley Elderberry Longhorn Beetle Elderberry shrubs provide habitat for VELB and are known to occur on the Proposed Site. Following the procedures outlined in the USFWS *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 1999), a focused protocol-level survey for elderberry shrubs on the Proposed Site was conducted by AECOM biologists on December 29, 2010. The survey followed the procedures outlined in the USFWS Guidelines and included measuring all stems greater than or equal to (\geq) 1 inch in diameter at ground level, tabulating the measurements according to three size classes (stems \geq 1 inch and \geq 3 inches, stems $>$ 3 inches and $<$ 5 inches, and stems \geq 5 inches), and inspecting all elderberry stems for VELB exit holes. Five elderberry shrubs in good health were observed and surveyed (Exhibit 3.3-1a and 3.3-1b). Multiple stems $>$ 1 inch and potential exit holes from VELB were recorded on each shrub. None of these shrubs are located in riparian habitat. Survey results are included in Table 3.3-3.

Shrub No.	Stem Diameter Class			Riparian	Exit Holes
	\geq 1 and \leq 3 inches	$>$ 3 and $<$ 5 inches	\geq 5 inches		
1	2	7	2	N	Y
2	5	1	1	N	Y
3	7	1	4	N	Y
4	1	0	0	N	N
5	4	4	6	N	Y

Source: Survey data compiled by AECOM in 2011

A reconnaissance-level biological survey was conducted on the Alternative 1 Site by biologists on January 10, 2011. No elderberry shrubs were found on the site.

Sensitive Natural Communities

Oak Woodlands Approximately 6.2 acres of oak woodlands occur on the Proposed Site, mainly on the southeast portion of the site. The dominant species in this community is interior live oak, but several large valley oak trees are also on the site. The woodland habitat’s proximity to the American River and the American River Parkway make the habitat important for providing cover, foraging, nesting, and roosting habitat for a variety of wildlife species, including special-status species such as Swainson’s hawk and white-tailed kite. The woodland habitat also provides movement corridors for these and many other species.

While valley oak woodland is tracked as a sensitive habitat in the CNDDDB, interior live oak woodland is not. Nevertheless, the passing of Senate Bill 1334 mandated counties to require feasible and proportional habitat mitigation for impacts on all oak woodlands as part of the CEQA process under California Public Resources Code Section 21083.4. Senate Bill 1334 and California Public Resources Code Section 21083.4 were the direct consequences of a growing concern regarding the incremental loss of oak woodland

habitat throughout the state as a result of habitat conversions, residential and commercial uses, and other compounding factors, such as lack of regeneration, spread of Sudden Oak Death syndrome, and pressures from invasive species. More recently, global climate change has added to the concern for protecting large tracts of unfragmented habitat to provide migration corridors for species, to preserve the state's biodiversity, and to allow for adaptive resource management. Oak woodlands and native oak trees are also considered sensitive and protected by county and city policies. In addition, revisions to the State CEQA Guidelines in 2010 incorporated consideration of forest land, as defined in California Public Resources Code Section 12220.8(g), into the evaluation of agricultural resources; this topic is addressed in the applicable section of this EIS/EIR.

Wetlands and Other Waters of the United States The Proposed Site contains approximately 0.8 acre of freshwater marsh and 0.2 acre of seasonal wetlands. Wetland habitats are of special concern and considered sensitive because they may be of high value to plant and wildlife species and may have a higher potential to support special-status species. These habitats also enhance flood and erosion control, recharge groundwater, and maintain water quality. Many wetland functions are interdependent and if one function becomes impaired, other wetland functions can be adversely affected.

A formal wetland delineation was conducted on the Proposed Site on February 20 and 24, 2011 (AECOM 2011a). The freshwater marsh on the site is not anticipated to be claimed as jurisdictional waters by USACE because the marsh lacks adjacency, does not directly abut a USACE-jurisdictional wetland or traditional navigable water (TNW), and does not have a significant nexus with a TNW. In this case, the freshwater marsh would be considered waters of the State, and the regulation of fill would fall to the Central Valley Regional Water Quality Control Board (RWQCB) under the Porter-Cologne Act. However, whether a wetland feature is subject to Federal jurisdiction is USACE's decision and is determined during verification of a formal wetland delineation. Seasonal wetland areas on the site would be considered waters of the U.S., and therefore subject to USACE jurisdiction, but are not likely to be habitat for special-status invertebrates because of the short duration of ponding. The preliminary wetland delineation is anticipated to be submitted to USACE for review and concurrence in late 2011.

No aquatic features exist on the Alternative 1 Site; therefore, no waters of the United States or waters of the State exist there.

Regulatory Setting

Federal Plans, Policies, Regulations, and Laws. The following Federal laws related to biological resources are relevant to the project and are described in detail in Section 5.6, "Compliance with Related Laws, Rules, Regulations, and Executive Orders":

- ▶ Endangered Species Act of 1973, as Amended
- ▶ Clean Water Act, Section 404
- ▶ Migratory Bird Treaty Act of 1918
- ▶ Executive Order 13186: Migratory Birds
- ▶ Executive Order 11990: Protection of Wetlands
- ▶ Executive Order 11312: Invasive Species

State Plans, Policies, Regulations, and Laws

California Endangered Species Act Pursuant to CESA, a permit from DFG is required for projects that could result in take of a plant or animal species that California lists as threatened or endangered. Under CESA, “take” is defined as an activity that would directly or indirectly kill an individual of a species. The CESA definition of take does not include “harming” or “harassing,” as the Federal ESA definition does. Therefore, the threshold for take may be higher under CESA than under ESA because habitat modification is not necessarily considered take under CESA. No take permit would be required under Section 2081 because no species take would occur.

California Fish and Game Code Sections 3503 and 3503.5 – Protection of Bird Nests and Raptors Section 3503 of the California Fish and Game Code states that taking, possessing, or needlessly destroying the nest or eggs of any bird is unlawful. Section 3503.5 specifically states that taking, possessing, or destroying any raptors (i.e., species in the orders Falconiformes and Strigiformes), including their nests or eggs, is unlawful. Typical violations of these codes include destroying active nests by removing vegetation containing nests. Violation of Section 3503.5 could also include failure of active raptor nests resulting from disturbance of nesting pairs by nearby project construction. This statute does not provide for the issuance of any type of incidental take permit.

California Fish and Game Code: Fully Protected Species Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species and do not provide for authorization of incidental take of fully protected species.

Porter-Cologne Water Quality Control Act Under the Porter-Cologne Act, waters of the State fall under the jurisdiction of the appropriate RWQCB. The RWQCB must prepare and periodically update water quality control plans (basin plans). Each basin plan sets forth water quality standards for surface water and groundwater. To achieve and maintain these standards, the plans also set forth actions to control nonpoint and point sources of pollution. Projects that discharge waste to wetlands or waters of the State must meet the waste discharge requirements of the RWQCB, which may be issued in addition to a water quality certification or waiver under Section 401 of the CWA.

The appropriate RWQCB also generally takes jurisdiction over waters of the State that are not subject to USACE jurisdiction under the CWA. Mitigation to ensure no net loss of wetlands functions and values of waters of the State is typically required.

Regional and Local Plans, Policies, Regulations, and Ordinances The JOC Relocation Project is jointly proposed by Reclamation, a Federal agency, and DWR, a State agency. The Proposed Site is Federal property owned by Reclamation. A Federal agency operating on Federal land is not required to comply with regional or local plans, policies, regulations, or ordinances. However, a Federal agency normally will conform with local regulations and State laws that do not interfere with the agency’s ability to “carry out the purposes of the government,” such as building, health, and safety codes (*Fort Leavenworth R.R. v. Lowe*, 114 U.S. 525 [1885]).

Activities at the Proposed Site would not be required to comply with regional or local regulations, but Reclamation has committed to a “good neighbor” policy and would conform with those regulations to the extent that such compliance would not conflict with or hinder the mission and purposes of the agency or the departments located at the site. Activities at the Alternative 1 Site would take place on private property and would require full compliance with all regional and local regulations.

Sacramento County General Plan Policies from the *1993 County of Sacramento General Plan* (Sacramento County 1993) related to biological resources that apply to the Proposed Action and Alternative 1 are listed below.

Open Space Element

- ▶ **Policy OS-1:** Permanently protect, as open space, areas of natural resource value, including wetlands preserves, riparian corridors, woodlands, and floodplains.
- ▶ **Policy OS-2:** Maintain open space and natural areas that are interconnected and of sufficient size to protect biodiversity, accommodate wildlife movement and sustain ecosystems.

Conservation Element

Habitat Protection Policies:

- ▶ **Policy CO-62:** Ensure no net loss of marsh and riparian woodland acreage, functions, and values.

Native and Landmark Tree Protection Policies:

Conservation of native tree species other than oaks, and preservation of native oak trees and landmark trees is the intent of policies in the section. Landmark trees are generally defined as any nonnative oak tree measuring 19 inches in diameter at breast height (dbh). Native oak trees which measure 6 inches dbh are protected under provisions of the County Tree Ordinance.

- ▶ **Policy CO-130:** Make every effort to protect and preserve non-oak native, excluding cottonwoods, and landmark trees and protect and preserve native oak trees measuring 6 inches dbh in urban and rural areas, excluding parcels zoned exclusively for agriculture.
- ▶ **Policy CO-132:** If the project site is not capable of supporting all the required replacement trees, per Country Tree Ordinance, a sum equivalent to the replacement cost of the number of trees that cannot be accommodated shall be paid to the County’s Tree Preservation Fund. The replacement cost of trees shall be established in accordance with the Council of Tree and Landscape Appraiser’s standards for appraising trees.
- ▶ **Policy CO-133:** For discretionary projects involving native oaks, ensure no net loss of canopy area by (1) preserving the main, central portions of consolidated and isolated groves constituting the existing healthy and unhealthy native oak canopy and

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(2) provide an area on-site to mitigate any canopy lost. Native oak mitigation area must be a contiguous area on-site which is equal to the size of canopy area lost and shall be adjacent to existing oak canopy to ensure opportunities for regeneration. If on-site mitigation area is not available due to area limitations, developer shall provide off-site mitigation consistent with policy proposed in CO-136.

- ▶ **Policy CO-134:** Mitigate for loss of trees for road expansion and development consistent with County Tree Ordinance and General Plan policies.
- ▶ **Policy CO-135:** In 15 years the native oak canopy within on-site mitigation areas shall be 50 percent canopy coverage for valley oak and 30 percent canopy coverage for blue oak and other native oaks.
- ▶ **Policy CO-136:** If on-site mitigation is not possible given site limitation, off-site mitigation may be considered. Such a mitigation area must meet all of the following criteria to preserve, enhance, and maintain a natural woodland habitat in perpetuity, preferably by transfer of title to an appropriate public entity. Protected woodland habitat could be used as a suitable site for replacement tree plantings required by ordinances or other mitigations.
 - Equal or greater in area to the total area that is included within a radius of 30 feet of the dripline of all trees to be removed;
 - Adjacent to protected stream corridor or other preserved natural areas;
 - Supports a significant number of native broadleaf trees; and
 - Offers good potential for continued regeneration of an integrated woodland community.

Protection of Rare and Endangered Species Habitat Policies:

- ▶ **Policy CO-150:** To the extent feasible, plans for urban development and flood control projects shall incorporate habitat corridors connecting on-site or adjoining areas (if any) not designated for alteration.

Sacramento County General Plan Update Sacramento County is in the process of preparing a draft *Sacramento County General Plan Update* (Sacramento County 2010) and EIR to plan for growth in the period 2010–2030. Until that EIR has been certified and the update has been adopted by the Sacramento County Board of Supervisors, the 1993 general plan remains in effect. Following receipt of a third-party review in December 2010, hearings on the general plan began in spring 2011 and are ongoing.

Sacramento County Tree Preservation Ordinance The following specifications and policies regarding the protection of trees are stated in the Sacramento County Tree Preservation Ordinance and could help develop mitigation for tree removal deemed necessary to implement the Proposed Action.

Native oak trees with a dbh of 6 inches or greater or multi-trunked native oak trees having an aggregate diameter of 10 inches or more in urban and rural areas, excluding parcels zoned as agricultural land. Oaks must be replaced with in-kind species at the diameter which shall equal the combined diameter of the trees removed. If the project site is not capable of supporting all replacement trees, the replacement cost must be paid to the County's Tree Preservation Fund.

- ▶ Removal or damage of heritage oak trees, which are defined as California oak trees with a dbh of 60 inches or greater, should be avoided whenever feasible.
- ▶ No person shall trench, grade or fill within the dripline of any tree or destroy, kill or remove any protected tree as defined above, in the designated urban area of the unincorporated area of Sacramento County, on any property, public or private, without a tree permit, or unless authorized as a condition of a discretionary project approval by the Board of Supervisors, County Planning Commission, Zoning Board of Appeals, the Zoning Administrator or the Subdivision Review Committee.
- ▶ A permit shall be required before any person shall plant, transplant, move, separate, trim, prune, cut above or below the ground, disrupt, alter or do surgery upon any public tree located on an easement, planting easement, street, or public premises, irrespective of whether the tree is alive or dead.
- ▶ The preservation or removal of trees as a condition of approval of a discretionary project shall be the sole and continuing responsibility of the approving body which granted approval of the project.
- ▶ The approving body may mandate any or all of the following control measures to mitigate damage to oak trees caused by land development:
 - no grade cuts greater than one foot shall occur within the driplines of oak trees, and no grade cuts whatsoever shall occur within five feet of their trunks;
 - no fill greater than one foot shall be placed within the driplines of oak trees and no fill whatsoever shall be placed within five feet of their trunks;
 - no trenching whatsoever shall be allowed within the driplines of oak trees. If it is absolutely necessary to install underground utilities within the driplines of an oak tree, the trench shall be either bored or drilled; and
 - no irrigation system shall be installed within the driplines of oak tree(s) which may be detrimental to the preservation of the oak tree(s) unless specifically authorized by the approving body or the Director of Public Works.
 - Landscaping beneath oak trees may include non-plant materials such as boulders, cobbles, wood chips, etc. The only plant species which shall be planted within the driplines of oak trees are those which are tolerant of the natural semi-arid environs of the trees. Limited drip irrigation approximately twice per summer is recommended for the understory plants.

Sacramento County Swainson's Hawk Ordinance Title 16, Chapter 16.130, of the Sacramento County Code addresses the reduction in Swainson's hawk foraging habitat within unincorporated Sacramento County. Under the County's Swainson's Hawk Mitigation Program, no intensive new disturbances, such as heavy equipment operation associated with construction, should be initiated within one-quarter mile of an active Swainson's hawk nest in an urban setting or within one-half mile in a rural setting between March 1 and September 15 (the nesting season). As mitigation, the Sacramento County Department of Environmental Review and Assessment may ask for nesting surveys if known nests or appropriate nesting habitat exists within the project vicinity. If surveys show that no active nests are within the distances specified above, then no additional mitigation would be required. If active nests are found and disturbances such as construction would occur during the nesting season, then protective measures specified by DFG would be required. Impacts on foraging habitat are assessed when agricultural and agricultural-residential parcels are rezoned to smaller minimum parcel sizes. The ordinance requires mitigation in the form of replacement habitat, the size of which is based on the original and rezoned size of the parcel being developed.

Sacramento County American River Parkway Plan 2008 The American River Parkway (Parkway) stretches 29 miles along both sides of the American River from the western boundary of Reclamation's property at the Proposed Site downstream to its confluence with the Sacramento River. The Parkway reportedly supports riparian, freshwater marsh, oak woodland, grassland, oak grassland, and shrub grassland habitats; which in turn support a variety of plant and wildlife species, including several that are listed as special-status species by Federal and State agencies. The Proposed Site is located upslope and beyond the boundary of the Parkway, but the project applicant(s), acting as good neighbors, would make every effort, to the extent feasible, to adhere to the goals and recommendations of the *Sacramento County American River Parkway Plan 2008*. The "Terrestrial Resource Policies" in the plan that relate to biological resources and apply to the Proposed Action and alternatives under consideration are as follows:

- ▶ **Policy 3.2:** Agencies managing the Parkway shall protect, enhance and expand the Parkway's native willow, cottonwood, and valley oak-dominated riparian and upland woodlands that provide important shaded riverine aquatic habitat, seasonal floodplain, and riparian habitats; and the native live oak and blue oak woodlands and grasslands that provide important terrestrial and upland habitats.
 - 3.2.1 Vegetation plantings shall be consistent with the approved list of trees, shrubs, and herbaceous plants native to the Parkway. This list shall be approved by the Recreation and Parks Commission, upon recommendation by the Director of the Department of Regional Parks, working in cooperation with resource and flood control managers, and organizations with native vegetation expertise. This list shall include species appropriate to the plant communities and habitats within the Parkway. Only plants on this approved list shall be planted within the Parkway, the exception being turf in permitted locations.
 - 3.2.2 Native vegetation shall be reintroduced in areas of the Parkway where the substrate will support it, especially in areas that have been disturbed by

- construction, past gravel mining and agricultural activity, except in sites of human historical value.
- 3.2.3 Nonnative trees and shrubs can be beneficial for native wildlife or be benign to the ecosystem. Nonnative trees and shrubs may be removed over time if they:
 - a) constitute a hazard to the users of the Parkway,
 - b) the removal is a part of the on-going normal maintenance practices of the Parkway by its managers, or
 - c) the vegetation was approved to be removed as a part of a discretionary project in accordance with the policies of this Plan.
 - 3.2.4 Agencies managing the Parkway shall remove invasive nonnative vegetation species that conflict with habitat management goals, recreation uses, flood control or water supply conveyance.
 - 3.2.5 New turf planting and associated irrigation within the dripline of existing mature native oaks shall be prohibited. Turf areas can be placed where there are immature native trees, provided the trees are not damaged by turf maintenance activities, such as summer watering, mowing, and string trimming.
- ▶ **Policy 3.3:** The Parkway shall be managed to create habitat connectivity and wildlife travel corridors that provide for the habitat needs of the endangered Valley Elderberry Longhorn Beetle (VELB) and other important native wildlife species, without compromising the integrity of flood control facilities, the flood conveyance capacity of the Parkway, or other Parkway management goals.

City of Rancho Cordova General Plan Policies of the *Rancho Cordova General Plan* (City of Rancho Cordova 2006) related to biological resources that apply to the Alternative 1 Site are as follows:

- ▶ **Policy NR 1.1:** Protect rare, threatened, and endangered species and their habitats in accordance with federal law.
- ▶ **Policy NR 1.2:** Conserve Swainson's hawk habitat consistent with state policies and Department of Fish and Game guidelines.
- ▶ **Policy NR 1.7:** Require a biological resources evaluation for private and public development projects in areas identified to contain or possibly contain listed plant and/or wildlife species based on General Plan mapping of biological resources.
- ▶ **Policy NR 1.8:** Encourage creation of habitat preserves that are immediately adjacent to each other in order to provide interconnected open space areas for animal movement.

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- ▶ **Policy NR 2.1:** Require mitigation that provides for “no net loss” of wetlands consistent with current state and federal policies.
- ▶ **Policy NR 2.2:** Ensure that direct and indirect effects to wetland habitats are minimized by environmentally sensitive project siting and design, to the maximum extent feasible.

Each of the Natural Resource policies listed above has one or more associated action items designed for implementation of these policies.

3.3.2 Environmental Consequences and Mitigation Measures

Methods

This section presents the methods used to analyze impacts on biological resources from implementing the Proposed Action and alternatives under consideration for the JOC Relocation Project. Potential impacts on biological resources include those to terrestrial special-status species and sensitive habitats. Impacts were analyzed using data collected during biological field surveys; information obtained from the CNDDDB, CNPS, and USFWS databases; and reviews of existing documentation that address biological resources on or near the Proposed and Alternative 1 Sites.

The evaluation is based on data collected during biological field surveys, review of aerial photographs, and information obtained from previously completed studies. Qualified biologists attended an initial site visit and tour of the Proposed Site on November 3, 2010. A focused protocol-level survey for VELB, a species Federally listed as threatened, and a reconnaissance-level biological survey was conducted on the Proposed Site on December 29, 2010, by qualified biologists to assess the site for habitats that are sensitive, such as wetlands, and/or have the potential to support special-status plant and wildlife species.

A reconnaissance-level biological survey was conducted on the Alternative 1 Site on January 10, 2011. Habitat types and potential USACE and State jurisdictional waters present on the site were mapped onto aerial photographs during the surveys and later digitized as GIS overlays for creating associated maps. Common plant and wildlife species and features with potential to support common and special-status species were documented.

A wetland delineation was performed at the Proposed Site on February 20, 2011. Because of unusually heavy precipitation in the days immediately preceding the wetland delineation, a second delineation was performed on February 24, 2011, to confirm the findings. The USACE 1987 wetland delineation manual (Environmental Laboratory 1987) and Regional Supplement to the *Corps of Engineers Wetland Delineation Manual: Arid West Region* (Environmental Laboratory 2008) were used to delineate wetlands that could be subject to USACE jurisdiction under Section 404 of the CWA. The 1987 manual and 2008 Arid West Region supplement provided technical guidelines and methods for the three-parameter approach to determining the location and boundaries of jurisdictional wetlands. (AECOM 2011a.)

Assumptions

Conceptual site plans have been prepared for campus-style and office-style layouts at the Proposed Site and for a campus-style layout at the Alternative 1 Site. All site plans were designed with the intent that buildings and parking areas would avoid biological resources where feasible.

The following assumptions about design and construction of the Proposed Site have been made for the purposes of the impact analysis:

- ▶ Although reasonable attempts will be made to adjust the design of the project to avoid oak woodland and seasonal wetland habitats, this analysis assumes that total avoidance is unlikely.
- ▶ Although reasonable attempts will be made to adjust the design of the project to avoid blue elderberry shrubs, which have the potential to support the Federally listed VELB, this analysis assumes that total avoidance is unlikely.

A radio antenna estimated to be no higher than 50–130 feet above ground level may be mounted either on the rooftop of the new buildings or on a new communication tower located at the JOC site. The antenna and tower, if they are constructed, are anticipated to be 50–130 feet above ground level but may instead be replaced by other communications features (such as fiber optic cable) or equipment (such as an antenna already available at the Nimbus Dam).

Regarding construction of a communications antenna, Reclamation and DWR will consult with USFWS regarding guidelines, *Service Guidance on the Siting, Construction, Operation and Decommissioning of Communications Towers* (USFWS 2000) to minimize effects on raptors and migratory bird species. The guidance provides direction for project proponents, such as:

- ▶ Attempt to collocate the communications equipment on an existing communication tower or other structure (e.g., billboard, water tower, or building mount); where feasible, new towers should be sited within existing “antenna farms” (clusters of towers).
- ▶ Construct towers using techniques that do not require guy wires (e.g., use a lattice structure or monopole), and not installing lights if Federal Aviation Administration (FAA) regulations permit.
- ▶ If the tower design uses guy wires for support that are proposed to be located in known raptor or water bird concentration areas or daily movement routes, or in major diurnal migratory bird movement routes or stopover sites, provide daytime visual markers on the wires to prevent collisions by these diurnally moving species.

Criteria for Determining Significance of Effects

Determinations of significance in this EIS/EIR are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. These determinations are provided pursuant to CEQA. The Proposed Action and alternatives under consideration

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would be considered to have a significant impact related to biological resources if they would:

- ▶ have a substantial adverse effect, either directly or through habitat modification, on any species identified as endangered, threatened, candidate, rare, or of special concern in local or regional plans, policies, regulations, or on lists compiled by the DFG or USFWS;
- ▶ have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the DFG or USFWS;
- ▶ have a substantial adverse effect on Federally and state protected wetlands as defined by Section 404 of the CWA and as protected under the Porter-Cologne Act through direct removal, filling, hydrological interruption, or other means;
- ▶ interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native fish or wildlife migratory corridors, or impede the use of native wildlife or fish nursery sites;
- ▶ conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- ▶ conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

Issues Not Addressed Further in This EIS/EIR

Impacts on Fish Species—Table 3.3-2 identifies special-status wildlife species with potential to occur at or near the Proposed Site or the Alternative 1 Site. No fish species were identified in the CNDDB or USFWS Endangered Species Web site (2010) listings for these sites. For this reason, impacts on fish are not considered further in this EIS/EIR.

Conflicts with Adopted Habitat Conservation Plans, Natural Community Conservation Plans, or Other Approved Local, Regional, or State Habitat Conservation Plans

—The South Sacramento Habitat Conservation Plan (SSHCP) (2011), a working draft of which was released in August 2010, will cover 30 different species of plants and wildlife, including 10 that are State or Federally listed as threatened or endangered. The geographic scope of the SSHCP includes U.S. 50 to the north, Interstate 5 to the west, the Sacramento County line with El Dorado and Amador Counties to the east, and San Joaquin County to the south. Both the Proposed and Alternative 1 Sites are within the area that will be covered by the SSHCP; however, to date, the SSHCP has not been adopted and is not in effect. Therefore, consistency with the SSHCP is not considered further in this EIS/EIR.

Impact Analysis

See Table 3.0-2 for a summary of impacts and mitigation measures for Alternative 2 (incorporated by reference from the Mather Field Specific Plan FEIR).

Impact 3.3-1: Potential Loss or Disturbance of Valley Elderberry Longhorn Beetle and Its Habitat**No-Action**

Under the No-Action Alternative, no construction activities would occur and no elderberry shrubs would be removed or affected; therefore, the project would not result in impacts on VELB and their habitat. **No direct or indirect impacts** would occur.

Proposed Action

Focused protocol-level surveys for elderberry shrubs at the Proposed Site identified three shrubs on the property (Table 3.3-3 and Exhibits 3.3-1a and b). With either the campus-style or office-style layout, implementing the Proposed Action could result in the loss of at least one of the five elderberry shrubs, which have the potential to support VELB larvae, on the Proposed Site (Exhibits 3.3-1a and b). Shrubs not removed could otherwise be affected by nearby grading and other construction activities if such activities alter the environment (e.g., soil compaction, change in drainage patterns) within 100 feet of the shrubs in a manner that threatens their health and/or survival. VELB occur in various locations throughout the Sacramento Valley and removal of elderberry shrubs on the Proposed Site would not reduce the range of the species; however, the loss of elderberry shrubs through direct removal or habitat modification that results in their eventual death could result in take of VELB as defined by the Federal ESA. Therefore, **direct and indirect impacts** would be **potentially significant**.

Alternative 1

No elderberry shrubs were identified during reconnaissance-level biological surveys on the Alternative 1 Site. Therefore, implementing Alternative 1 on the Alternative 1 Site would not affect VELB and their habitat. **No direct or indirect impacts** would occur.

Mitigation Measure 3.3-1: Avoid Direct and Indirect Impacts on Elderberry Shrubs, or Initiate Section 7 Consultation with USFWS to Obtain an Incidental Take Permit and Implement Permit Conditions.**No-Action and Alternative 1**

No mitigation is required.

Proposed Action

Where feasible, Reclamation and DWR will revise the site plan to avoid locating project features within 100 feet of elderberry shrubs.

If project activities would be expected to occur within 100 feet of any elderberry shrubs, Reclamation and DWR will initiate consultation with USFWS under ESA Section 7. Project construction will not proceed in areas potentially containing VELB until USFWS has issued a biological opinion and take authorization and the project proponent has abided by all conditions of the incidental take permit relating to the proposed construction, including implementing all conservation and minimization measures. Such measures are likely to include documenting methods for relocating existing shrubs and maintaining existing shrubs and other vegetation in a conservation area.

Existing elderberry shrubs will be relocated and new elderberry seedlings planted consistent with the mitigation ratios described in the *Conservation Guidelines for the Valley Elderberry Longhorn Beetle* (USFWS 1999). The 1999 conservation guidelines mitigation ratios are based on whether the affected shrub is located in riparian or nonriparian habitat, the size of stems affected, and the presence of beetle exit holes. Compensatory mitigation for elderberry shrubs that would be removed from their current locations would be developed in consultation with USFWS during the Section 7 consultation process. Compensatory mitigation may include planting replacement elderberry seedlings or cuttings and associated native plants within the open space areas on the Proposed Site, planting replacement elderberry seedlings or cuttings and associated native plants at a suitable off-site location, purchasing credits at an approved mitigation bank, or a combination thereof. Relocated and replacement shrubs and associated native plantings will be placed in conservation areas providing a minimum of 1,800 square feet per transplanted shrub. These conservation areas will be preserved in perpetuity as habitat for VELB. The number of elderberry shrubs that would be affected by implementing the project is expected to be low because a total of three shrubs are known to be present on the Proposed Site.

The population of VELB, the general condition of the conservation area, and the condition of the elderberry and associated native plantings in the conservation area must be monitored over a period of either 10 consecutive years or for 7 years over a 15-year period. A minimum survival rate of at least 60% of the elderberry plants and 60% of the associated native plants must be maintained throughout the monitoring period. Within 1 year of discovering that survival has dropped below 60%, Reclamation and DWR will replace failed plantings to bring survival above this level. Detailed information on monitoring success of relocated and planted shrubs and measures to compensate (should success criteria not be met) would be required as a condition of the incidental take permit.

Responsibility: Reclamation and DWR

Timing: Before any ground-disturbing activity within 100 feet of VELB habitat and on an ongoing basis as required by the biological opinion.

Implementing Mitigation Measure 3.3-1 would fully reduce the impact on VELB to a **less-than-significant** level for the Proposed Action because appropriate avoidance and/or

compensatory mitigation measures would be implemented in compliance with ESA Section 7.

Impact 3.3-2: Substantial Adverse Effect on Riparian Habitat or Other Sensitive Natural Communities

No-Action

Under the No-Action Alternative, no construction activities would occur; therefore, the project would not result in a substantial adverse effect on riparian habitat or other sensitive natural communities. **No direct or indirect impacts** would occur.

Proposed Action

As described in “Environmental Setting,” a small number of riparian tree and shrub species are present across the Proposed Site. These scattered trees and shrubs are not classified as a separate habitat type on the site because they lack sufficient characteristics, especially associated species, to constitute a riparian plant community.

Approximately 6.2 acres of oak woodland are present on the Proposed Site. The southeast half of the Proposed Site includes this oak woodland community and a smaller patch exists along the northern border and Nimbus Road. The campus-style option would remove 1.01 acres (Exhibit 3.3-1a), and the office-style option would remove 0.99 acre (Exhibit 3.3-1b).

DFG considers oak woodland to be a sensitive natural community. The Sacramento County General Plan calls for no net loss of native oak woodland canopy area. No riparian habitat would be affected by the Proposed Action. Implementing the Proposed Action would result in the loss of oak woodland habitat. The exact number and sizes of oak trees being removed has not yet been determined, but approximately 1.01 acres would be removed with the campus-style option, and 0.99 acre with the office-style option, during construction of the parking areas around the proposed facility. The potential also exists for indirect impacts on this natural community from runoff from the parking areas, landscape irrigation, or other activities related to routine operation and maintenance of an office facility. Therefore, **direct and indirect impacts would be potentially significant.**

Alternative 1

Implementing Alternative 1 could result in the loss of approximately 10.7 acres of annual grassland habitat, which does not support biological resources that are protected under local policies and ordinances. **No direct or indirect impacts** would occur.

Mitigation Measure 3.3-2: Perform Tree Surveys and Avoid or Replace Native Oak Trees on the Proposed Site

No-Action and Alternative 1

No mitigation is required.

Proposed Action

During final design of site facilities and parking in areas identified to contain oak trees, Reclamation and DWR will retain a certified arborist or other qualified biologist to perform a determinate survey of the accurate location, number, species, size (i.e., dbh, approximate height, canopy diameter), and approximate age (if known) of oak tree(s) to be removed.

Where feasible, any native oaks 6 inches or greater dbh, multitrunked native oaks having an aggregate dbh of 10 inches or greater, heritage oak trees with a dbh of 60 inches or greater, or nonnative trees 19 inches or greater dbh (Landmark Tree) that have been identified by a qualified professional in the development area will be avoided. Avoidance can be achieved by the following measures:

- ▶ Avoid transplanting, moving, separating, trimming, pruning, cutting above or below the ground, disrupting, or altering in any way native oak trees, heritage trees, or landmark trees.
- ▶ Avoid grade cuts greater than 1 foot within the drip lines of oak trees, and avoid any grade cuts within 5 feet of their trunks.
- ▶ Avoid placing fill greater than 1 foot within the drip lines of oak trees, and avoid placing any fill within 5 feet of their trunks.
- ▶ Avoid trenching within the drip lines of oak trees. If installing underground utilities within the drip lines of an oak tree is necessary, the trench will be either bored or drilled.
- ▶ Avoid installing irrigation systems within the drip lines of oak tree(s), which may be detrimental to the preservation of the oak trees.
- ▶ Landscaping beneath oak trees may include nonplant materials such as boulders, cobbles, and wood chips. Within the drip lines of oak trees, plant only those species tolerant of the natural semiarid environs of the trees. Limited drip irrigation (approximately twice per summer) is recommended for the understory plants.

If all trees can be avoided in accordance with these criteria, no further mitigation is necessary.

If such trees cannot feasibly be avoided, Reclamation and DWR will replace all protected trees that would be removed or otherwise damaged by project implementation at an inch-for-inch ratio. Reclamation and DWR will consult with

the Sacramento County Director of Public Works before any tree is pruned, cut, or otherwise disturbed in any way, whether the tree is dead or alive. Reclamation and DWR will prepare and implement a mitigation plan providing complete mitigation for the removal of protected trees. The plan's tree mitigation method will be comparable to inch-for-inch replacement.

The tree planting or mitigation plan will include monitoring requirements and success criteria, as determined by a qualified professional, to ensure that replacement trees survive to maturity and can be reasonably expected to persist for the normal life span of the particular species being monitored. Monitoring of replacement trees will continue for a period of 5 years following planting, and trees that do not survive or meet the success criteria will be replaced. To ensure no net loss of native oak canopy area, Reclamation and DWR will preserve the main, central portions of consolidated and isolated groves and provide an area on-site to mitigate any canopy lost. The mitigation area will be a contiguous area on-site equal to the size of canopy area lost and will be adjacent to existing oak canopy to ensure opportunities for regeneration. If on-site mitigation is not possible given site limitation, off-site mitigation may be considered. To preserve, enhance, and maintain a natural woodland habitat in perpetuity, preferably by transfer of title to an appropriate public entity, the mitigation area must:

- ▶ be equal or greater in area to the total area that is included within a radius of 30 feet of the dripline of all trees to be removed,
- ▶ be adjacent to a protected stream corridor or other preserved natural areas,
- ▶ support a substantial number of native broadleaf trees, and
- ▶ offer good potential for continued regeneration of an integrated woodland community.

If the project site is not capable of supporting all the required replacement trees or a regeneration site and no off-site mitigation areas are available, a sum equivalent to the replacement cost of the number of trees that cannot be accommodated will be paid to the Sacramento County Tree Preservation Fund. The replacement cost of trees will be established in accordance with the Council of Tree and Landscape Appraiser's standards for appraising trees.

Responsibility: Reclamation and DWR

Timing: Before any ground-disturbing activities begin and during project construction as applicable

Implementing Mitigation Measure 3.3-2 would fully reduce this impact to a **less-than-significant** level for the Proposed Action because the mitigation measures would reduce impacts on oak woodland habitats by avoiding and/or replacing native oak woodlands to sufficiently promote the continued viability of the habitat at the project site.

Impact 3.3-3: Potential Impacts on Waters of the United States, Including Wetlands, and Waters of the State

No-Action

Under the No-Action Alternative, no construction activities would occur; therefore, the project would not result in impacts on waters of the United States, including wetlands, and waters of the State. **No direct or indirect impact** would occur.

Proposed Action

Approximately 0.23 acre of seasonal wetlands are present on the Proposed Site. The campus-style option would affect approximately 0.21 acre (Exhibit 3.3-1a) and the office-style option would affect approximately 0.21 acre (Exhibit 3.3-1b). No areas of freshwater marsh would be affected by construction of the facilities (Exhibits 3.3-1a and 3.3-1b).

A preliminary wetland delineation report for the site has been prepared for submittal to USACE; the seasonal wetlands on the site are not anticipated to be claimed as jurisdictional features by USACE because they are not adjacent to one another, do not directly abut a USACE-jurisdictional wetland or TNW, and do not have a significant connection with a TNW. Jurisdictional waters (as defined under Section 404 of the CWA) of the United States, including wetlands, also qualify as waters of the State, and waters determined to be nonjurisdictional by USACE may still qualify as waters of the State. In this case the regulation of fill would be the responsibility of the Central Valley RWQCB. However, the decision on whether a wetland feature is subject to Federal jurisdiction lies with USACE and is determined during verification of a wetland delineation. (AECOM 2011a.)

Project development could also result in indirect impacts on seasonal wetland habitat, including impacts caused by pollutants transported into the features by urban runoff and other means, changes in vegetation as a result of changes in land use and management practices, and altered hydrology from the construction of adjacent buildings, roadways, and parking lots. Therefore, **direct and indirect impacts** would be **significant**.

Alternative 1

A reconnaissance-level biological survey conducted on the Alternative 1 Site by qualified biologists on January 10, 2011, confirmed that no waters of the United States or waters of the State exist on-site. **No direct or indirect impacts** would occur.

Mitigation Measure 3.3-3: Consult with USACE and Compensate for Impacts on Waters of the United States and Waters of the State as Determined by USACE and the Central Valley RWQCB

No-Action and Alternative 1

No mitigation is required.

Proposed Action

Reclamation and DWR will submit the preliminary wetland delineation to USACE for verification. Reclamation and DWR will use the verified wetland delineation to determine the acreage of impacts on waters of the United States and waters of the State.

Depending on determinations of jurisdiction on the subject waters, Reclamation and DWR will obtain a USACE Section 404 permit and/or a Central Valley RWQCB Section 401 certification or meet waste discharge requirements. The permits will be obtained before grading plans are approved and before any ground-breaking activity begins within 250 feet of a water of the United States or water of the State.

Reclamation and DWR will replace on a “no net loss” basis (in accordance with USACE and the Central Valley RWQCB policy) the acreage of all wetlands and other waters of the United States and State that would be removed and/or degraded with implementation of project plans. Wetland habitat will be replaced through the purchase of wetland credits from an agency-approved mitigation bank authorized to sell credits to offset losses at the project site. The replacement acreage will be at a ratio agreeable to USACE and the Central Valley RWQCB, as appropriate, depending on agency jurisdiction and as determined during the Section 401 and Section 404 permitting processes or the waste discharge requirements to achieve the “no net loss of function and value” standard.

Responsibility: Reclamation and DWR

Timing: Before any ground-disturbing activities and during project construction as applicable

Implementing Mitigation Measure 3.3-3 would fully reduce this impact to a **less-than-significant** level for the Proposed Action because the mitigation measures would ensure wetland functions and values lost on the Proposed Site would be replaced on a no-net-loss basis.

Impact 3.3-4: Potential Impacts on Raptors and Migratory Birds**No-Action**

Under the No-Action Alternative, no construction activities would occur; therefore, the project would not result in impacts on raptors and migratory birds and their habitats. **No direct** or **indirect impacts** would occur.

Proposed Action

Raptors and migratory birds, including the special-status species listed in Table 3.3-2, have potential to occur on the Proposed Site. With either site plan, implementing the Proposed Action could result in the permanent loss of approximately 1.01 acres of oak woodland with the campus-style option, and 0.99 acre of same with the office-style option; 4.38 acres of annual grassland with the campus-style option, and 4.39 acres of same with the office-style option; and 0.21

acre of seasonal wetland habitat with the campus-style option, and 0.21 acre of same with the office-style option. The seasonal wetland habitat acreages could serve as nesting or foraging habitat for raptors and migratory birds. Such losses have the potential to directly affect nesting and foraging habitat potentially used by white-tailed kite, tricolored blackbird, and other raptors and migratory birds. Additionally, project construction could disturb active nests near the construction area or in trees retained on the project site, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs.

A radio antenna estimated to be no higher than 50 to 100 feet may be mounted either on the rooftop of the new buildings or on a new communication tower located at the Proposed Site. This height is substantially lower than the 199-foot threshold (USFWS 2000) at which communication towers become a high risk for bird mortality. Other risks to birds from communication towers include the installation of guy lines and lights, which are not anticipated to be included at the site. Reclamation and DWR have committed to consult with USFWS regarding compliance with USFWS guidelines to minimize effects on raptors and migratory bird species, as described in “Assumptions” above and in Chapter 2, “Alternatives.” As a result, the antenna and tower are not anticipated to have an adverse effect on raptors or migratory birds.

As described above, loss of nesting and foraging habitat could result in **direct** and **indirect** impacts on raptors and migratory birds that would be **potentially significant**.

Alternative 1

Implementing Alternative 1 could result in the loss of approximately 10.7 acres of annual grassland, which is the only plant community on the site. No woodland or wetland habitat exists on-site. The loss of annual grassland habitat does not have the potential to directly affect nesting habitat for white-tailed kite, tricolored blackbird, or other raptors or migratory birds that nest in trees or wetland habitats. The loss of annual grassland habitat, however, does have the potential to directly affect migratory birds that nest on the ground or in shrubs, which occur in a few locations on the site. Additionally, project construction could disturb active nests of ground-nesting birds near the construction area, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs.

A radio antenna estimated to be no higher than 50 to 100 feet may be mounted either on the rooftop of the new buildings or on a new communication tower located at the Proposed Site. This height is substantially lower than the 199-foot threshold (USFWS 2000) at which communication towers become a high risk for bird mortality. Other risks to birds from communication towers include the installation of guy lines and lights, which are not anticipated to be included at the site. Reclamation and DWR have committed to consult with USFWS regarding compliance with USFWS guidelines to minimize effects on raptors and migratory bird species, as described in “Assumptions” above and in Chapter 2,

“Alternatives.” As a result, the antenna and tower are not anticipated to have an adverse effect on raptors or migratory birds.

As described above, loss of nesting or foraging habitat could result in **direct** and **indirect** impacts on raptors and migratory birds that would be **potentially significant**.

Mitigation Measure 3.3-4: Avoid Impacts on Raptors and Migratory Bird Species

No-Action

No mitigation is required.

Proposed Action and Alternative 1

Before construction of the project begins, Reclamation and DWR will have a qualified biologist conduct preconstruction surveys to identify active raptor nests within 500 feet of the proposed facility. Tricolored blackbird nests and nests of other migratory birds will be identified within 250 feet of the same boundaries. Preconstruction surveys will be conducted during the nesting season (March 15 to August 15) no less than 14 days and no more than 30 days before any construction activity begins. If no nests are found, no further mitigation is required. Any construction activity that occurs between August 16 and March 14 will not require preconstruction surveys for raptors and migratory birds.

If active nests are found, impacts will be avoided by establishing appropriate buffers around active nest sites (500 feet for raptors, 250 feet for tricolored blackbirds and other migratory birds), and no new project activity will occur within the buffer areas until the young have fledged, until the nest is no longer active, or until a qualified biologist has determined, in consultation with DFG, that reducing the buffer would not result in nest abandonment. Monitoring of the nest by a qualified biologist during construction activities will be required to ensure that nests are not jeopardized.

Responsibility: Reclamation and DWR

Timing: Before any ground-disturbing activities begin and during project construction as applicable

Implementing Mitigation Measure 3.3-4 would fully reduce this impact to a **less-than-significant** level for the Proposed Action and Alternative 1 because avoidance and/or setback measures would be implemented to prevent impacts on white-tailed kite, tricolored blackbird, and other raptors and migratory birds.

Impact 3.3-5: Potential Loss or Disturbance of Bat Species

No-Action

Under the No-Action Alternative, no construction activities would occur; therefore, the project would not result in impacts on bat species. **No direct or indirect impacts** would occur.

Proposed Action

Bat species have potential to occur on the Proposed Site. Implementing the Proposed Action could result in the permanent loss of approximately 1.01 acres of oak woodland with the campus-style option, and 0.99 acre of same with the office-style option, which serves as habitat for these species. Such losses have the potential to directly affect roosting bats. Pallid bat, western mastiff bat, and western red bat could roost in small numbers in the woodland habitat on the Proposed Site and forage over nearby freshwater marsh, seasonal wetland, and annual grassland habitats. Potential roosting habitat exists in valley oak and interior live oak trees and occasional Fremont cottonwood trees that could contain cavities. Day roosts are used throughout the spring and summer and maternity colony roosts can be active from approximately early April until mid-October. Hibernation roosts may be used from approximately November to early March. Trees on the Proposed Site are not expected to support large numbers of bats or provide important day roosts, hibernation roosts, or maternity colony roosts. Bat foraging habitat is locally and regionally abundant, and no important roosting sites are known to exist on the site.

With either site plan, implementing the Proposed Action could result in the permanent loss of approximately 1.01 acres of oak woodland with the campus-style option, and 0.99 acre of same with the office-style option. A few individual bats could be lost or harmed during removal of individual trees, but the potential loss of a few individuals would not substantially reduce local population numbers. Therefore, **direct** and **indirect** impacts on special-status bats would be **less than significant**.

Alternative 1

A reconnaissance-level biological survey was conducted on the Alternative 1 Site by qualified biologists on January 10, 2011. No potential bat roosting sites were found on the site. Implementing Alternative 1 on the Alternative 1 Site would not result in impacts on bat species. **No direct or indirect impacts** would occur.

Mitigation Measure: No mitigation is required.

Impact 3.3-6: Potential Loss of or Disturbance to Special-Status Plants

No-Action

Under the No-Action Alternative, no construction activities would occur; therefore, the project would not result in impacts on special-status plants. **No direct or indirect impacts** would occur.

Proposed Action

With either site plan, implementing the Proposed Action could result in the permanent loss of approximately 0.21 acre of seasonal wetland habitat with the campus-style option, and 0.21 acre of same with the office-style option, which has potential to support special-status plant species (Table 3.3-3). Losses of seasonal wetlands would occur from constructing parking areas on the south, southeast,

and east sides of the proposed facilities. No impacts are expected on the freshwater marsh habitat because this area would be avoided in both site plans.

Two special-status plant species have potential to occur in wetland habitats on the Proposed Site (Table 3.3-1). These species are Bogg's Lake hedge hyssop and Sanford's arrowhead, both CRPR List 1B species. While the seasonal wetlands on the Proposed Site are not considered high-quality habitat for these two special-status plant species, the potential for them to occur cannot be dismissed because areas of potentially suitable habitat are present. Construction of the proposed facilities, parking lots, and associated infrastructure for the Proposed Action could result in the loss of special-status plants, if present, through habitat removal. Project development could also result in indirect impacts on special-status plants, including impacts caused by pollutants transported by urban runoff and other means, changes in vegetation as a result of changes in land use and management practices, and altered hydrology from the construction of adjacent buildings, roadways, and parking lots. Therefore, **direct** and **indirect** impacts would be **potentially significant**.

Alternative 1

Implementing Alternative 1 could result in the loss of approximately 10.7 acres of annual grassland habitat, which does not support any special-status plant species. **No direct or indirect impacts** would occur.

Mitigation Measure 3.3-6: Conduct Special-Status Plant Surveys and Implement Avoidance and Mitigation Measures or Compensatory Mitigation

No-Action and Alternative 1

No mitigation is required.

Proposed Action

Before construction of the project begins, Reclamation and DWR will hire a qualified biologist to conduct protocol-level surveys for the special-status plants listed in Table 3.3-1 at the appropriate time of year (May–August) when the target species would be flowering or otherwise clearly identifiable. Surveys will be conducted in accordance with current DFG (2009) and USFWS (1996) guidelines.

If special-status plant populations are found, Reclamation and DWR will consult with DFG and USFWS, as appropriate for the species status, to determine the appropriate mitigation measures for direct and indirect impacts on any special-status plant population that could occur as a result of implementing the project. Mitigation measures may include preserving and enhancing existing populations, creating off-site populations on project mitigation sites through seed collection or transplantation, and/or restoring or creating suitable habitat in sufficient quantities to achieve no net loss of occupied habitat or individuals.

Responsibility: Reclamation and DWR

Timing: Before any ground-disturbing activities begin and during project construction as applicable

Implementing Mitigation Measure 3.3-6 would reduce this impact to a **less-than-significant** level for the Proposed Action because special-status plant surveys focused at a protocol level would be conducted to determine the presence or absence of special-status plants and appropriate measures would be determined by DFG and USFWS to avoid impacts on special-status plant species or compensation would be provided for the loss of special-status plants through creation of off-site populations, conservation easements, or other appropriate measures.

Impact 3.3-7: Potential Conflict with Local Policies or Ordinances for Protecting Biological Resources

No-Action

Under the No-Action Alternative, no construction activities would occur; therefore, the project would not result in any conflicts with local policies or ordinances for protecting biological resources. **No direct or indirect impacts** would occur.

Proposed Action

Implementing the Proposed Action with either site plan could conflict with ordinances and policies intended to protect unique biological resources and habitats because, even though the project is being designed to minimize impacts on biological resources to the extent feasible and to mitigate for significant impacts, unique biological resources and habitats could be affected.

The Sacramento County General Plan calls for no net loss of native oak woodland canopy area and, together with the Sacramento County Tree Preservation Ordinance, provides protection for native oak trees with a dbh of 6 inches or greater, heritage oak trees with a dbh of 60 inches or greater, and landmark trees with a dbh of 19 inches or greater.

If elderberry shrubs, protected trees, and seasonal wetlands cannot be avoided, implementing the Proposed Action could result in the loss of VELB and their habitat (Impact 3.3-1), individual oak trees and oak woodland habitat (Impact 3.3-2), and seasonal wetland habitat (Impact 3.3-3). The potential also exists for impacts on rare, threatened, and endangered species and their habitats (Impacts 3.3-4 and 3.3-6). Therefore, **direct and indirect impacts** would be **potentially significant**.

Alternative 1

Implementing Alternative 1 could result in the loss of approximately 21.2 acres of annual grassland habitat, which does not support biological resources that are protected under the city of Rancho Cordova's local policies and ordinances. **No direct or indirect impacts** would occur.

Mitigation Measure 3.3-7: Avoid or Reduce Conflicts with Local Policies or Ordinances for Protecting Biological Resources

No-Action and Alternative 1

No mitigation is required.

Proposed Action

The following mitigation measures, described above, will be implemented by Reclamation and DWR to avoid or fully reduce potential conflicts with local policies or ordinances for protecting VELB and their habitat, raptors and other migratory bird species, special-status plants, and waters of the United States and waters of the State:

- ▶ Mitigation Measure 3.3-1: Avoid Direct and Indirect Impacts on Elderberry Shrubs, or Initiate Section 7 Consultation with USFWS to Obtain an Incidental Take Permit and Implement Permit Conditions.
- ▶ Mitigation Measure 3.3-2: Perform Tree Surveys and Avoid or Replace Native Oak Trees on the Proposed Site.
- ▶ Mitigation Measure 3.3-3: Consult with USACE and Compensate for Impacts on Waters of the United States and Waters of the State as Determined by USACE and the Central Valley RWQCB.
- ▶ Mitigation Measure 3.3-4: Avoid Impacts on Raptors and Migratory Bird Species.
- ▶ Mitigation Measure 3.3-6: Conduct Special-Status Plant Surveys and Implement Avoidance and Mitigation Measures or Compensatory Mitigation.

Responsibility: Reclamation and DWR

Timing: Before any ground-disturbing activities begin and during project construction as applicable

Implementing Mitigation Measure 3.4-7 would reduce this impact to a **less-than-significant** level for the Proposed Action because Reclamation and DWR would construct and operate the project consistent with local policies or ordinances to protect biological resources.

Impact 3.3-8: Substantial Interference with the Movement of Native Resident or Migratory Wildlife Species or with Established Native Resident or Migratory Wildlife Corridors, or Impede the Use of Native Wildlife Nursery Sites

No-Action

Under the No-Action Alternative, no construction activities would occur; therefore, the project would not interfere with migratory wildlife species, established wildlife corridors, or wildlife nursery sites. **No direct or indirect impacts** would occur.

Proposed Action

Implementing the Proposed Action with either site plan would result in a minor reduction in the area available for native resident or migratory wildlife to travel through the area. The site is adjacent to the American River Parkway, which provides protected habitat connectivity and wildlife travel corridors along the length of the site. In addition, both site plans retain a natural area on the south site boundary that would remain available for wildlife movement. For these reasons, the **direct** and **indirect** impact would be **less than significant**.

Alternative 1

The Alternative 1 Site consists of 21.2 acres of upland habitat adjacent to the Folsom South Canal. No established migratory corridor or wildlife travel corridor has been identified on or near the site. Therefore, the **direct** and **indirect** impact would be **less than significant**.

Mitigation Measure: No mitigation is required.

Impact 3.3-9: Potential Introduction and Spread of Invasive Weeds

No-Action

Under the No-Action Alternative, no construction activities would occur; therefore, the project would not result in the introduction or spread of invasive weeds. **No direct** or **indirect impacts** would occur.

Proposed Action

Several invasive weeds, including yellow star-thistle and Italian thistle, currently occur in the Proposed Site. Construction activities on the site and vehicles moving in and out of the site have the potential to spread these and introduce new invasive weed species. The spread and introduction of invasive weeds could potentially adversely affect habitat quality for native plant and wildlife species on the Proposed Site and the Parkway by excluding native vegetation, altering habitat structure, and reducing food resources for wildlife. It could also alter the hydrology of the wetland habitats, which are considered sensitive ecosystems. Depending on the types of weeds introduced and the extent of the populations, these effects could be considered potentially significant. Therefore, **direct** and **indirect** impacts would be **potentially significant**.

Alternative 1

The same invasive species occur on the Alternative 1 Site, but because no wetland or other sensitive communities occur on the site and the surrounding landscape is highly developed, the potential to spread or introduce invasive species or alter native or sensitive ecosystems would not occur. **No direct** or **indirect impacts** would occur.

Mitigation Measure 3.3-9: Prevent the Introduction and Spread of Invasive Weeds during Construction

No-Action and Alternative 1

No mitigation is required.

Proposed Action

Reclamation and DWR will implement the following measures to reduce potential impacts resulting from the introduction and spread of invasive weeds:

- ▶ A target list of invasive weeds with the potential to occur and be problematic in the area will be developed. This may be accomplished by reviewing the California Invasive Plant Council's "Invasive Plant Inventory" (Cal-IPC 2006), the California Department of Food and Agriculture's "Pest Ratings of Noxious Weed Species and Noxious Weed Seed" (CDFA 2010), and by consulting knowledgeable botanists and plant ecologists.
- ▶ Equipment used during construction will be checked before entering and exiting the site to ensure it is free of mud or seed-bearing material.

Responsibility: Reclamation and DWR

Timing: Before any ground-disturbing activities begin, and during project construction.

Implementing Mitigation Measure 3.3-9 would reduce this impact to a **less-than-significant** level for the Proposed Action because Reclamation and DWR would control the introduction and spread of invasive species at the project site.

Residual Significant Impacts

Implementing the mitigation measures described in this section would reduce significant effects on sensitive biological resources to a less-than-significant level; therefore, no residual significant effects would occur.

3.3.3 Cumulative Impacts

The geographic scope for analyzing the cumulative effects on biological resources includes the majority of the Sacramento Valley and the northern end of the San Joaquin Valley. This designated region supports plant and wildlife communities (valley and foothill woodland, annual grassland, agricultural land, freshwater marsh, and seasonal wetland) similar to those found on or adjacent to the Proposed and Alternative 1 Sites.

Habitat types present on the Proposed Site include annual grassland, oak woodland, seasonal wetland, and freshwater marsh; although, the latter is not anticipated to be adversely affected. The Alternative 1 Site is covered entirely by annual grassland. Surrounding land uses include open space (Proposed Site only), residential, and commercial.

Joint Operations Center Relocation Project

The proposed development on the Proposed Site would remove approximately 4.38 acres of low-quality annual grassland with the campus-style option, and 4.39 acres of same with the office-style option; 1.01 acres of oak woodland with the campus-style option, and 0.99 acre of same with the office-style option; and 0.21 acre of seasonal wetland with the campus-style option, and 0.21 acre of same with the office-style option. The proposed development on the Alternative 1 Site would remove approximately 10.7 acres of annual grassland. The Alternative 1 Site, however, is entirely surrounded by dense commercial and residential development.

Past development in the region converted a substantial amount of open space land to agricultural production more than 100 years ago and more recently expanded residential and commercial development, both of which have resulted in substantial losses of native habitats. The land conversions to agriculture have benefited a few species, such as Swainson's hawk and other common species adapted to agricultural uses, but the overall effect on native plants, animals, and habitat has been adverse. Many future projects proposed in the vicinity of the project sites are expected to result in substantial impacts on biological resources and would be required to mitigate those impacts (in compliance with CEQA, Federal ESA, CESA and other Federal, State, regional, and local statutes); however, many types of habitats and species are provided no protection. Therefore, the net loss of native habitat for plants and wildlife and the loss of open space areas that support important biological resources in this region can be expected to continue.

Many of the projects located in undeveloped portions of Sacramento County are expected to result in cumulatively significant impacts on special-status species and sensitive habitats. The remaining undeveloped land in this region serves as important habitat for a variety of wildlife and vegetation. The continued development of these lands will result in the incremental decline in the amount of habitat remaining to support special-status species, such as tricolored blackbird, white-tailed kite, and VELB. Thus, a cumulatively significant biological resources impact exists in the region.

Implementing the project on the Proposed Site has the potential to result in a significant impact on VELB, white-tailed kite, and other raptor and migratory bird species. These impacts would be reduced to less-than-significant levels with implementation of the mitigation measures identified above, which include surveys and avoidance measures, where feasible, for VELB habitat, oak woodland, and wetlands. The surveys and avoidance measures would help to avoid and minimize losses of these resources. Where avoidance cannot be achieved, compensatory mitigation would include transplanting habitat (elderberry), replacing habitat, or protecting habitat. Habitat would be protected through fee title acquisition; through purchase of credits at an approved habitat mitigation bank in accordance with the appropriate Federal, State, regional, and local agencies; or by preserving in perpetuity existing off-site habitat approved by USFWS. Furthermore, the amount of habitat that would be removed as a result of implementing the project is proportionately insignificant relative to the amount of these habitat types present in the Sacramento County region. Thus, implementing the Proposed Action or Alternative 1 would not result in a cumulatively considerable incremental contribution to significant cumulative impacts associated with these biological resources.