

3.2 Aesthetics

This section describes the existing visual conditions of the study area and addresses aesthetic resources that could be affected by the proposed program, including scenic views from State-designated scenic highways. The description of existing visual resources in this section is accompanied by representative photographs. Visual resources, or aesthetics, are the natural (physical) and human-built features of the landscape that can be seen and that contribute to the public's enjoyment of the environment. Physical features that make up the visible landscape include land, water, vegetation, and geological features; the built environment includes buildings, roadways, bridges, levees, and other structures. This section is composed of the following subsections:

- Section 3.2.1, “Environmental Setting,” describes the physical conditions in the study area as they apply to aesthetics.
- Section 3.2.2, “Regulatory Setting,” summarizes federal, State, and regional and local laws and regulations pertinent to evaluation of the proposed program's impacts on aesthetics.
- Section 3.2.3, “Analysis Methodology and Thresholds of Significance,” describes the methods used to assess the environmental effects of the proposed program and lists the thresholds used to determine the significance of those effects.
- Section 3.2.4, “Environmental Impacts and Mitigation Measures for NTMAs,” discusses the environmental effects of the near-term management activities (NTMAs) and identifies mitigation measures for significant environmental effects.
- Section 3.2.5, “Environmental Impacts, Mitigation Measures, and Mitigation Strategies for LTMAAs,” discusses the environmental effects of long-term management activities (LTMAAs) and identifies mitigation measures for significant environmental effects.

NTMAs and LTMAAs are described in detail in Section 2.4, “Proposed Management Activities.”

3.2.1 Environmental Setting

The visual resource assessment is based on the visual resource inventory methodology found in the Federal Highway Administration's *Visual Impact Assessment for Highway Projects*, FHWA-HI-88-504 (FHWA

1988). This methodology is similar to the methodologies used by land management agencies such as the U.S. Forest Service to address impacts on a variety of projects. The analysis follows generally accepted procedures for conducting a visual resource inventory, defining visual character, assessing visual qualities, and evaluating the effects of visual change on visual resources.

Information Sources Consulted

Sources of information used to prepare this section include the following:

- The Federal Highway Administration's *Visual Impact Assessment for Highway Projects*, described above (FHWA 1988)
- The California Department of Transportation's online list of officially designated State scenic highways (Caltrans 2010)
- *Ecological Subregions of California: Section and Subsection Descriptions*, published by the U.S. Department of Agriculture (USDA 1997)
- The *Sacramento and San Joaquin River Basins California Comprehensive Study, Interim Report*, published by the U.S. Army Corps of Engineers and the State of California Reclamation Board (now known as the Central Valley Flood Protection Board (Board)) (USACE and The Reclamation Board 2002)

Geographic Areas Discussed

Aesthetic resources are discussed separately for the following geographic areas within the study area because of differences in their aesthetic resources and the potential effects of the program on those resources:

- Extended systemwide planning area (Extended SPA) divided into the Sacramento and San Joaquin Valley and foothills, and the Sacramento–San Joaquin Delta (Delta) and Suisun Marsh
- Sacramento and San Joaquin Valley watersheds

Landforms are described for each geographic area, then the landscapes in each geographic area are separated by type (i.e., agricultural landscapes, natural waterways, and the built environment) and the scenic resources in each landscape type are described.

None of the management activities included in the proposed program would be implemented in the SoCal/coastal Central Valley Project/State Water Project (CVP/SWP) service areas. In addition, implementation of the

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proposed program would not result in long-term reductions in water deliveries to the SoCal/coastal CVP/SWP service areas (see Section 2.6, “No Near- or Long-Term Reduction in Water or Renewable Electricity Deliveries”). Given these conditions, the program is not expected to result in adverse impacts on visual resources in the SoCal/coastal CVP/SWP service areas and detailed information about scenic resources in this geographic area is not provided in this EIR.

State Scenic Highways in the Study Area

Officially designated State scenic highways in the Extended SPA and the Sacramento and San Joaquin Valley watersheds are listed in Table 3.2-1 and shown in Figure 3.2-1. Scenic highways are roads that have been designated as scenic by the State of California or local agencies and are recognized as having exceptional scenic qualities or affording panoramic vistas. A scenic-highway designation protects the scenic values of an area. Official designation requires a local jurisdiction to enact a scenic-corridor protection program that protects and enhances scenic resources.

Table 3.2-1. Officially Designated State Scenic Highways in the Extended Systemwide Planning Area and the Sacramento and San Joaquin Valley Watersheds

County	Route Number	Location/Description
Amador	88	From Dewdrop Ranger Station east to the Nevada state line. This route passes through heavy forests topped by rocky mountain crags with a glimpse of a mountain lake. It offers a view of nearby meadowland, with distant views of forested mountainsides at higher elevations and dense desert-like brush at lower elevations.
Calaveras	4	From east of Arnold to State Route 89. This route traverses forests of aspen, cedar, pine, fir, and tamarack; high mountain meadows; glacial lakes; and mountain streams.
El Dorado	U.S. Highway 50	From Placerville to South Lake Tahoe. This route traverses the foothills, American River Canyon, and Echo Summit and enters the Tahoe Basin.
Fresno	168	From the town of Clovis to Kaiser Wilderness, Sierra National Forest. This route is the State Route 168 Sierra Heritage Scenic Byway.
Mariposa	140	From the north boundary of the Mariposa Town Planning Area to the west boundary of the El Portal Town Planning Area. This route climbs from the oak woodlands in the Sierra Nevada foothills through the scenic and historic Merced River Canyon to Yosemite National Park.

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Table 3.2-1. Officially Designated State Scenic Highways in the Extended Systemwide Planning Area and the Sacramento and San Joaquin Valley Watersheds (contd.)

County	Route Number	Location/Description
Merced	152	From the Santa Clara County line to the junction of Interstate 5. This route traverses rich agricultural farmlands; a considerable distance of the route provides drivers with views of the extensive San Luis Reservoir. This route is also a designated National Scenic Byway (Pacheco Pass Road).
Merced	Interstate 5	From State Route 152 to State Route 205. The view along this route is primarily agricultural, but Interstate 5 also generally parallels the Delta-Mendota Canal and the California Aqueduct. From Route 152 to the Merced/Stanislaus County line, the Coast Ranges are visible to the west. Near the southern boundary of Stanislaus County, the freeway traverses the side hill slopes of the Coast Ranges.
Nevada	20	From Skillman Flat Campground to 0.5 mile east of Lowell Hill Road. This route is a designated U.S. Forest Service Scenic Byway in Tahoe National Forest.
Sacramento	160	From the Contra Costa County line to the southern limit of the city of Sacramento. This route meanders through historic agricultural areas and small towns along the Sacramento River in the Delta. It is also a designated National Scenic Byway (River Road).
San Joaquin	Interstate 580	From Interstate 5 to Interstate 205. This route traverses the edge of the Coast Ranges to the west and Central Valley to the east. Interstate 580 in this area is also a designated National Scenic Byway (Westside Freeway).
Shasta	151	From Shasta Dam to near Summit City. This route curves along the slope of a ridge, providing views of the Sacramento River, Shasta Lake, and distant hills.
Sierra	49	From the Yuba County line to Yuba Summit. This designated U.S. Forest Service Scenic Byway and State Scenic Highway winds through the Yuba River Canyon. It goes through several picturesque Gold Rush towns and climbs up to Yuba Summit.
Stanislaus	Interstate 5	From State Route 152 to Interstate 205. The view from Interstate 5 in this area is primarily agricultural, but the route also generally parallels the Delta-Mendota Canal and the California Aqueduct. This route is also a designated National Scenic Byway (Westside Freeway).

Sources: Caltrans 2010; FHWA 2010

Note:

Route numbers are State routes except where indicated. Of the counties located in the extended systemwide planning area and the Sacramento and San Joaquin Valley watersheds, no State scenic highways have been designated in Butte, Colusa, Contra Costa (east side), Glenn, Lake, Lassen, Madera, Modoc, Napa, Placer, Plumas, San Benito (east side), Siskiyou, Solano, Sutter, Yolo, and Yuba counties. Route 120 in Tuolumne County is not a designated State Scenic Highway, but is a designated National Scenic Byway.

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Figure 3.2-1. State-Designated Scenic Highways in the Extended SPA and the Sacramento and San Joaquin Valley Watersheds

Designated Wild and Scenic Rivers in the Study Area

Rivers in the Extended SPA and the Sacramento and San Joaquin Valley watersheds that are designated as Wild and Scenic Rivers under the National Wild and Scenic Rivers System are listed below and shown in Figure 3.2-2. Each designated river or river segment is classified as either wild, scenic, or recreational. See Section 3.2.2, “Regulatory Setting,” below for a description of these classifications. Protection of the rivers is provided through voluntary stewardship by landowners and river users and through regulation and programs of federal, State, local, or tribal governments. The following rivers located within the Extended SPA and the Sacramento and San Joaquin Valley watersheds are included in the National Wild and Scenic Rivers System:

- Middle Fork of the Feather River
- North Fork and lower American River
- Tuolumne River
- Merced River and South Fork of the Merced River

Rivers in the Extended SPA and the Sacramento and San Joaquin Valley watersheds that are designated as California Wild and Scenic Rivers under the California Wild and Scenic Rivers System or have special protection in the system are listed below and shown in Figure 3.2-2. Like National Wild and Scenic Rivers, each designated river or river segment is classified as either wild, scenic, or recreational. See Section 3.2.2, “Regulatory Setting,” below for a description of these classifications. The following rivers located within the Extended SPA and the Sacramento and San Joaquin Valley watersheds are protected under the California Wild and Scenic Rivers Act:

- North Fork American River and lower American River below Nimbus Dam
- McCloud River
- South Yuba River
- Cache Creek

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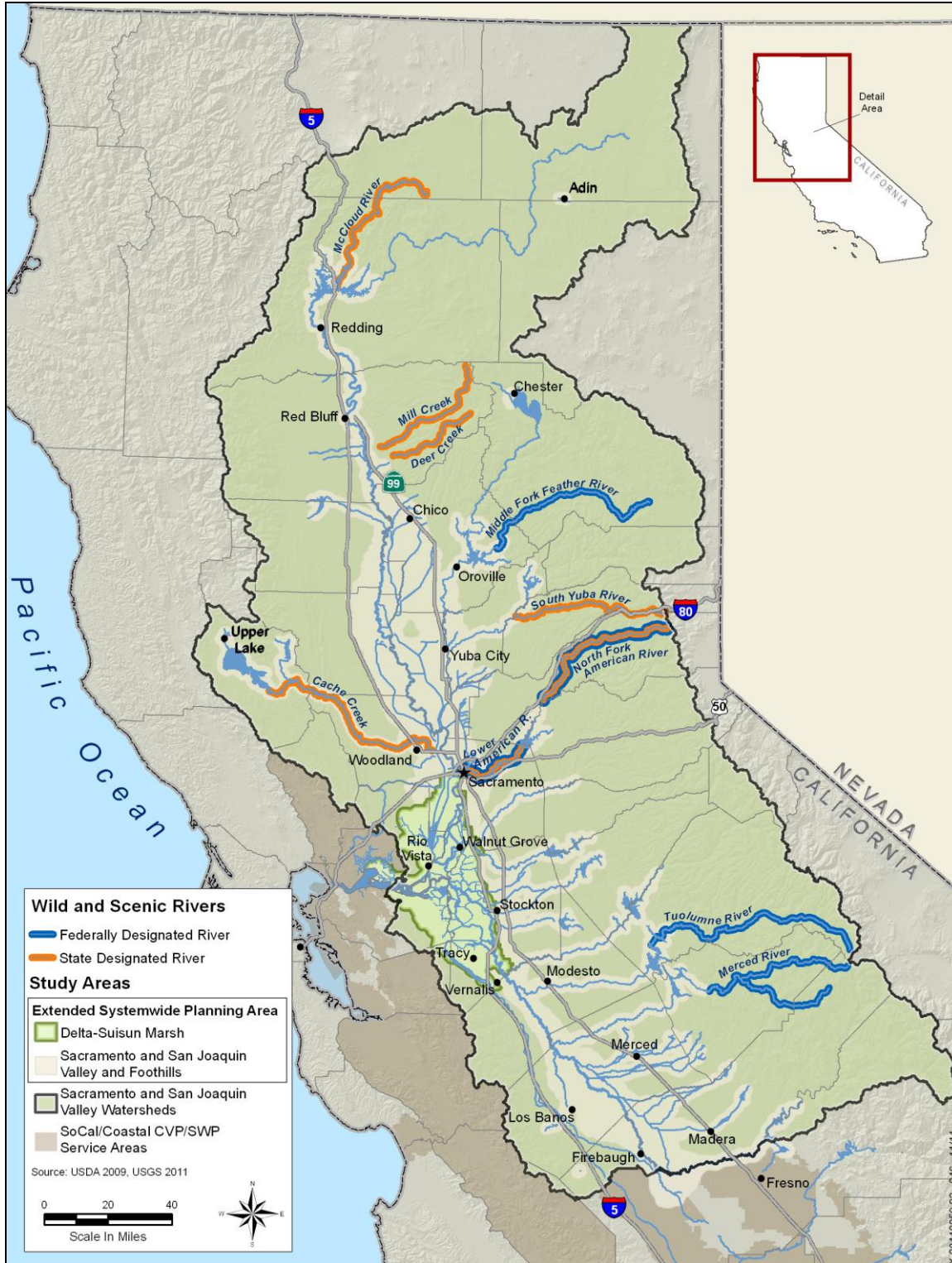


Figure 3.2-2. Rivers in the Extended SPA and the Sacramento and San Joaquin Valley Watersheds that Are Included in the National or State Wild and Scenic Rivers System

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- Mill Creek (not officially designated, but water impoundment facilities are prohibited)
- Deer Creek (not officially designated, but water impoundment facilities are prohibited)

In addition, federal, State, and public stakeholders have identified Sacramento River segments and key tributaries as eligible for designation as Wild and Scenic because of endangered fisheries, rare wildlife populations, riparian habitat, and diverse recreation opportunities (USACE and The Reclamation Board 2002); however, these segments and key tributaries are not currently included in the National or California Wild and Scenic Rivers System.

Viewer Characteristics in the Study Area

Groups viewing landscapes that contain existing flood control facilities would generally fit into the following categories:

- Travelers on regional and local roadways and Delta waterways. These roadways include regional highways such as Interstate 80 (I-80), I-5, and State Route (SR) 99; SR 160, a State-designated scenic highway in the Delta; other State routes that cross the Sierra Nevada and Coast Ranges; and local roadways throughout the study area.
- Recreationists engaged in wildlife observation, fishing, hunting, off-road vehicle sports, water sports, bicycling, hiking, and sightseeing. In particular, water-based recreation involving houseboats, sailboats, fishing boats, personal watercraft, speedboats, canoes, rowboats, and inflatable boats is very popular in Delta waterways and reservoirs throughout the study area. Water-based recreation activities consist of fishing from a boat, water-skiing, bird-watching, sailing, cruising, operating personal watercraft, canoeing, kayaking, houseboating, hunting from a boat, swimming from a boat, boat camping, swimming from shore, bank fishing, and windsurfing. Suisun Marsh's large open space and proximity to vast urban areas make the marsh ideally suited for wildlife viewing, hiking, canoeing, and other recreation opportunities.
- Residents near existing flood control or water conveyance or storage facilities.

Exposure to views of existing facilities varies by viewer type:

- Travelers' exposure to these views depends on the duration of views and their speed of travel. Another important factor is whether the views

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are peripheral or in the traveler's direct line of sight, and would therefore be observed for extended periods.

- Viewers engaged in recreational pursuits would generally have high levels of exposure because they would observe the facilities for extended periods. Exposure would also be affected by the type of recreational activity; recreation involving nature study or hiking would result in longer exposure to views than would recreation involving mechanized mobility (water-skiing or off-road vehicle activities).
- Nearby residents have extended views of these facilities.

Viewer groups composed of recreationists and residents would have high viewer sensitivity because their views would be lengthier and they would be highly concerned about and aware of their surroundings. On the other hand, travelers on interstate and State highways and other high-speed roadways would have lower viewer sensitivity because their views would be shorter or peripheral and drivers would be focused on operating their vehicles.

Extended Systemwide Planning Area

Figures 3.2-3a through 3.2-3g show typical views from each geographic area discussed below.

Sacramento and San Joaquin Valley and Foothills

Landforms The landforms of the Sacramento and San Joaquin Valley and foothills consist of a band of rolling hills cut by steep-sided canyons at the base of the Sierra Nevada and Coast Ranges, transitioning to the relatively flat valley floor.

Foothills form a transitional landform from the valley floor to the higher Coast Ranges, Sierra Nevada, and Cascade Range. At the northeast end of the Sacramento Valley is a low-elevation volcanic plateau, which is at the extreme southwest end of the Cascade Ranges. Where the plateau is dissected, the canyons are steep-sided. Foothills of the northern and central portions of the Sierra Nevada are moderately sloping to steep mountains and hills with major rivers cutting across the ridges to form a trellis drainage pattern.



Source: Photograph taken by EDAW (now AECOM) in 2006

Figure 3.2-3a. Representative Photograph of the Sacramento and San Joaquin Valley Foothills: South Fork of the Yuba River in the Sierra Nevada Foothills



Source: Photograph taken by EDAW (now AECOM) in 2008

Figure 3.2-3b. Representative Photograph of the Sacramento and San Joaquin Valley Foothills: Millerton Lake

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Source: Photograph taken by EDAW (now AECOM) in 2008

Figure 3.2-3c. Representative Photograph of the Sacramento and San Joaquin Valley: Streamside Vegetation along the San Joaquin River



Source: Photograph taken by AECOM in 2009

Figure 3.2-3d. Representative Photograph of the Sacramento and San Joaquin Valley: Agriculture along the Sacramento River Levee



Source: DWR 2010a

Figure 3.2-3e. Representative Photograph of the Sacramento and San Joaquin Valley: Arroyo Canal



Source: DWR 2010a

Figure 3.2-3f. Representative Photograph of the Delta-Suisun Marsh: Views near a Delta Slough



Figure 3.2-3g. Representative Photograph of the Delta–Suisun Marsh: Views near a Delta Slough

The valley consists largely of material eroded from the Sierra Nevada to the east or the Coast Ranges to the west, deposited in low alluvial fans. The valley floor is cut by rivers that flow westerly out of the Sierra Nevada and easterly out of the Coast Ranges. Two main drainages run the length of the valley: the Sacramento River originates in the Cascade Range at the northern end of the Sacramento Valley and flows south into the Delta from Shasta County; the San Joaquin River originates in the Sierra Nevada in Fresno County and flows westerly, then to the north into the Delta. Bluffs formed as the rivers meandered across the flat valley.

Agricultural Landscapes Irrigated agricultural land is the primary landscape in the Sacramento and San Joaquin Valley. Annual crops, orchards, and vineyards predominate. The annual crops consist of field crops, such as cotton, sweet corn, rice, and safflower; truck, nursery, and berry crops, such as lettuce, bell peppers, strawberries, melons, and tomatoes; and rice. The scenic quality of these open areas increases seasonally as crops mature and are harvested.

The orchards consist of citrus and subtropical crops (e.g., lemons, nectarines, olives, and oranges) and other deciduous fruit and nut crops (e.g., almonds, apples, peaches, pistachios, plums, and walnuts). The vineyards are composed of raisin, table, and wine grapes. The orchards,

particularly the deciduous orchards, provide a display of blossoms in spring that enhances the rural landscapes.

Foothill agriculture includes orchards (e.g., apple, pear, cherry, peach, plum, and olive trees) and wine grape vineyards, which provide a scenic contrast to the surrounding natural landscape. The wine industry has grown in some areas of the foothills, where wineries and tasting rooms set among the hillside vineyards create an attractive rural landscape. Water conveyance canals and flumes that serve agricultural areas are visible along hillsides, and stock ponds for cattle can be seen in pastures. Ranch complexes with barns and fencing can combine with the landscape to form pleasing views of the rural landscape.

A variety of existing flood control facilities is visible within this landscape: levees in the Delta and along the Sacramento and San Joaquin rivers and their tributaries; water diversion structures and channels; canals; and dams, reservoirs, and water impoundment areas.

Natural Landscapes Foothill landscapes have been altered by mining, grazing, reservoir development, and low-density residential and commercial development. However, large portions of the foothills retain landscapes that are natural, although grasslands are dominated by introduced annual grasses. The predominant natural plant communities on hillsides in the foothills are blue oak and blue oak–foothill pine woodlands, with scrub habitats dominated by chamise, scrub oak, and manzanitas on drier hillsides; annual grasslands and valley oak woodlands occupy foothill valleys where soils are deeper. At higher elevations, the hills become more forested with a mix of hardwoods and conifers, including black oak, interior live oak, and foothill pine. Seasonal changes in the foothills provide scenic beauty. The hillsides turn green in late winter and spring, with wildflower displays in spring; summer turns the hills golden, making the dark green oak trees stand out.

Although most of the landscape in the Sacramento and San Joaquin Valley has been modified from its natural state, there are some remnant areas where the original landscape can be glimpsed. Remnant riparian habitat exists between levees set back from the Sacramento River, primarily upstream from Colusa, on or at the toe of levees. In urbanized areas, remnant riparian vegetation grows along the riverbanks.

Existing flood control facilities that are visible within this landscape are primarily dams and reservoirs, such as Friant Dam and Millerton Lake, located in the foothills; levees located along rivers within wildlife preserve areas such as the Cosumnes River Preserve; and regional parkways such as the American River Parkway.

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Natural Waterways The two largest waterways in the Sacramento and San Joaquin Valley are the Sacramento River and the San Joaquin River. These two rivers define and drain their respective areas of the Sacramento and San Joaquin Valley and foothills.

Major tributaries to the Sacramento River are the American, Feather, and Yuba rivers. Cache Creek, which drains the east side of the Coast Ranges, flows into the Sacramento River. Major tributaries to the San Joaquin River are the Merced, Tuolumne, Calaveras, and Stanislaus rivers. The Mokelumne and Cosumnes rivers are also major tributaries in the Sacramento Valley that flow directly into the Delta. Several rivers or river segments are included in the National or California Wild and Scenic Rivers System, as described previously.

Some waterways and riparian areas associated with the waterways within the Sacramento and San Joaquin Valley may be important scenic resources, whether or not the rivers are included in the National or California Wild and Scenic Rivers System. The valley foothill riparian forest encompasses a wide variety of forest, woodland, and scrub communities dominated by broadleaved deciduous trees and shrubs. The canopy can be dominated by a combination of cottonwood, sycamore, and valley oak, and forms a band of green vegetation that contrasts with the surrounding straw-brown hills in summer. Views from canoes, kayaks, or motorized boats on the rivers consist of riparian vegetation that can form a dense wall of multilayered vegetation in some areas, oftentimes obscuring the levees. In many areas, the thin ribbon of large cottonwood, sycamore, and valley oak on or adjacent to levees provides the only natural vegetation visible in otherwise urban or agricultural areas. These areas provide a sense of isolation and welcome removal from nearby urban areas.

The waterways in the Sacramento and San Joaquin Valley have been modified by levees and reservoirs constructed for the purposes of flood control and water supply. As a consequence, the width of rivers varies according to levee spacing and releases from upstream reservoirs. Some portions of the San Joaquin River and its tributaries are characterized by seasonal drying of the channel in summer and fall. Although the waterways have been altered by water impoundment and diversions, flood control facilities, and land reclamation for agriculture, they still provide important scenic resources.

In a few areas, rivers have space to create meanders and the riparian zone accommodates forests, with an understory of shrubs and vines. In most other areas, however—primarily the urban areas—the rivers are narrowly confined with steep-sided levees, and trees and shrubs are scattered adjacent to the levee and riverbanks. Levee maintenance has kept the

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levees free of vegetation in many places, making the levee the dominant visual feature near these rivers.

In some areas of the Sacramento and San Joaquin Valley, the floodplain is broad where it is subject to frequent inundation. Less natural habitat has been converted to agriculture in these floodplain areas than in areas with other habitat types (e.g., grasslands), and some lands are held in public ownership and managed for wildlife habitat. Among the examples of such areas are the lands within the more than 11,000-acre Oroville Wildlife Area (managed by the California Department of Fish and Game), located on each bank of the Feather River a few miles downstream from Oroville. Another example is the 26,000-acre San Luis National Wildlife Refuge, which contains a mixture of managed seasonal and permanent wetlands, riparian habitat, and native grasslands, alkali sinks, and vernal pools associated with the San Joaquin River and two tributary sloughs.

Existing flood control facilities that are visible within this landscape are primarily levees located along rivers, and dams and reservoirs in the foothills.

Built Environment The built environment in the foothills consists primarily of small to medium-sized towns and infrastructure supporting transportation and resource extraction activities. Many towns in the foothills have small commercial and residential cores that retain the architectural and visual character of the early mining or ranching eras (turn of the 20th century or earlier) and are important scenic resources because of their historic character. Newer development surrounding the towns typically consists of low-density residential subdivisions, commercial strips, shopping centers, and light industrial uses. In the newer areas, parking lots, equipment storage yards, and strip commercial development detract from the surrounding natural scenic qualities. Light and glare originate from existing urban centers and major transportation corridors. Skyglow from the Sacramento and San Joaquin Valley's urban centers and major transportation corridors is visible in some foothill areas.

Numerous hydroelectric facilities operate at reservoirs in the foothills. These facilities consist of dams, penstocks, powerhouses, and high-voltage transmission lines and towers. The transmission lines are distributed throughout the Extended SPA, primarily in the Central Valley. The scale, color, and size of structures associated with these facilities, along with the disturbance of natural topography and vegetation required to accommodate them, detract from the scenic qualities of the surrounding natural landscape. Also detracting from the scenic qualities of the landscape in the Sacramento and San Joaquin Valley and foothills are interstate and State

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highways and railroads, which have required side-cutting of slopes and placement of fill, leaving visible scars.

Urbanization occurs along the major highways within the Sacramento and San Joaquin Valley, primarily along I-5, I-80, SR 70, and SR 99. Urban development along these corridors does not generally provide scenic views; however, within the adjacent valley towns, older urban areas may offer commercial and residential areas with architecturally interesting structures, and visually pleasing streets shaded with large sycamore, elm, and valley oak trees. At night, skyglow emanating from urbanized areas along the major transportation corridors is visible.

Existing flood control facilities that are visible within this landscape are primarily levees along the Sacramento and San Joaquin rivers and their tributaries, where the rivers and tributaries pass through urban areas.

Delta–Suisun Marsh

Landform The Delta is located at the confluence of the Sacramento and San Joaquin rivers. It is formed by alluvium deposited where streams originating in the Sierra Nevada, Coast Ranges, and southern Cascade Range enter the San Francisco Bay system. The Delta is a vast, interconnected network of streams, rivers, marshes, sloughs, tidal channels, shoals, and similar freshwater and brackish habitats. The topography is flat, with islands surrounded by levees and historic bridges and towns; therefore, foreground views of the surrounding landscape are often limited by levees and vegetation. However, the background and distant views are typically not limited. Suisun Marsh, located west of the Delta on the north side of Suisun Bay, is the largest contiguous brackish water marsh on the West Coast of North America. The marsh consists of managed wetlands, uplands, tidal wetlands, and bays and sloughs (DWR 2010b).

Agricultural Landscapes Agricultural lands supporting field, vegetable, and fruit and nut crops are located on Delta islands and protected from flooding by levees. The cultivated lands are level and can be viewed from adjacent roadways that are located on the levee tops, or from bridges. There are scenic views across the Delta's agricultural lands toward Mount Diablo and the Coast Ranges, and seasonal changes in the agricultural fields provide visual interest.

Existing flood control facilities that are visible within this landscape are primarily levees protecting Delta islands, water channels and impoundments, pumping plants, and control gate structures. In many areas, levees are heavily riprapped, which degrades the visual quality of these areas. Transmission lines are also present throughout much of the Delta.

Natural Landscapes and Waterways Natural waterways meander among the Delta islands; adjacent natural areas are dominated by cattails and bulrush, or riparian trees. Extensive marshlands are present in some areas of the Delta. Portions of the eastern Delta, such as the Cosumnes River Preserve, contain valley foothill riparian forest and associated habitats. Along many sections of SR 4 and SR 12, the Delta waterways cannot be seen because nearby levees block such views, but features such as Mount Diablo and the Coast Ranges are visible. Views from the waterways of the surrounding lands are often blocked by levees as well, and where levees are protected by riprap, the visual quality of the views is degraded. However, views of the waterways by recreationists (i.e., boaters, water-skiers, fishermen) are not blocked. In areas where there are more open views from the waterways, the surrounding marshes form a green expanse, often with views of the distant Coast Ranges and landmarks such as Mount Diablo.

Suisun Marsh, to the west of the Delta, contains saline emergent wetland, bays, sloughs, and upland grasslands. Native marsh vegetation and open waterways form open landscapes within the marsh. Adjacent uplands show grasslands and nearby coastal foothills provide a scenic backdrop. The Jepson Prairie Reserve is also an island of remnant natural prairie in a wide alluvial floodplain used primarily for agriculture. This reserve protects one of the best remaining vernal pool habitats, and provides wildflower displays in spring. Other vernal pool habitats occur on basalt flows in the north end of the valley and claypans farther to the south (USDA 1997).

Existing flood control facilities that are visible within these landscapes are primarily levees protecting Delta islands, water channels and impoundments, pumping plants, and control gate structures.

Built Environment Slightly less than 10 percent of the land in the Delta was urbanized as of 2010 (Delta Stewardship Council 2010:2-3), with most of the development located on the periphery of this geographic area in Sacramento, San Joaquin, and Contra Costa counties. However, small communities such as Isleton, Rio Vista, and Locke provide points of visual interest, with historic structures and areas from which to view the Delta waterways. Historic bridges crossing Delta channels, such as the Rio Vista Bridge, provide points of visual interest. Sources of light and glare are vehicles traveling the roadways and towns located within the Delta. Skyglow emanating from urbanized areas outside of the Delta (Fairfield and the I-80 corridor, the San Francisco Bay area, Stockton, and the I-5/SR 99 corridors) are visible from within the Delta.

Existing flood control facilities that are visible within this landscape consist primarily of levees protecting Delta islands.

Sacramento and San Joaquin Valley Watersheds

Landforms The landforms of the Sacramento and San Joaquin Valley watersheds are characterized by mountainous areas on the east side of the valley with relatively steep slopes and ravines, interspersed with meadows and flats, and transitioning to rolling foothill terrain in the lower elevations. The more visually spectacular landforms in the southern Sierra Nevada are those that have been shaped by glacial action. These landforms consist of hanging valleys, glacially carved and polished granitic ridges, and peaks with glacial lakes and meadows nestled in basins below the peaks. In the northern portions of the Sierra Nevada and southern Cascade Range, landforms have been shaped by volcanic action; volcanic cones and flat tablelands created by ancient lava flows are scenic resources in these areas.

Agricultural Landscapes At higher elevations, agricultural landscapes in the Sacramento and San Joaquin Valley watersheds include high pastures used for seasonal grazing and hay production. These features provide scenic open space and pastoral landscapes connected to historic uses in the West. At middle elevations, agricultural landscapes become more varied and include vineyards and orchards. No existing flood control facilities are visible within this landscape. Rivers, reservoirs, and dams on rivers that flow into existing flood control facilities in the Sacramento and San Joaquin Valley and foothills are visible.

Natural Landscapes The predominant land cover in this portion of the study area ranges from high alpine vegetation near the crest of the Sierra Nevada, through coniferous forests, aspen forests, and montane hardwood-conifer forest. On the inner slopes of the Coast Ranges, closed-cone pine-cypress, Klamath mixed conifer (northern), and Douglas fir forests form a mosaic of vegetation. These mountain and alpine landscapes are a primary scenic resource in the Sacramento and San Joaquin Valley watersheds. Silviculture consisting of timber harvesting and Christmas tree plantations can be seen in these areas. Timber harvesting creates cleared or thinned areas and slash piles that detract from the surrounding undisturbed forested landscape.

Few existing flood control facilities are visible within this landscape, although high mountain lakes, streams, and rivers that flow into existing flood control facilities in the Sacramento and San Joaquin Valley and foothills are visible.

Natural Waterways Rivers and mountain lakes and streams are major scenic resources. Clear mountain lakes and streams run over polished granite and gravel beds and support lush vegetation on their banks. Cascades and waterfalls are formed where terrain is steep and streams and rivers are constrained in narrow canyons. Where streams intersect glacially

carved valleys, waterfalls can create spectacular displays during spring runoff conditions. Recreationists on lakes and rivers can see granitic or volcanic slopes rising above alpine or subalpine lakes, rocky canyon slopes, or riverbanks lined with riparian vegetation. Several rivers or river segments are included in the National or California Wild and Scenic Rivers System, as described previously.

No existing flood control facilities are visible within this landscape. High mountain lakes, streams, and rivers that flow into existing flood control facilities in the Sacramento and San Joaquin Valley are part of this landscape.

Built Environment The built environment in the Sacramento and San Joaquin Valley watersheds generally consists of small towns, golf or ski resorts, low-density second-home developments, campgrounds, and infrastructure to support transportation and resource extraction activities. Certain elements of the built environment can have aesthetic qualities. Because much of the land in the upper watershed area is in public ownership, private development is limited and does not dominate the overall visual environment. Recreational development such as ski resorts can visually degrade areas with clear-cuts and erosion on ski runs. In areas with residential developments, fencing, outbuildings, and dwellings can detract from the scenic qualities of the surrounding landscape. In more densely forested areas, however, residential development is often screened from view.

Numerous hydroelectric facilities operate in the mountain areas of the Sacramento and San Joaquin Valley watersheds. These facilities consist of dams, reservoirs, penstocks, powerhouses, and high-voltage transmission lines and towers. The scale, color, and size of structures supporting these facilities, and the need to disturb natural topography and vegetation to accommodate them, can detract from the scenic qualities of the surrounding natural landscape. However, some of these facilities (i.e., reservoirs) have qualities that recreationists and travelers consider scenic.

Also detracting from the scenic qualities of the landscape in the Sacramento and San Joaquin Valley watersheds are interstate and State highways and railroads. Side-cutting of slopes and placement of fill have been necessary to accommodate this infrastructure, leaving visible scars on the landscape.

Light and glare originate from existing towns and major transportation corridors. Skyglow and effects on the nighttime sky emanating from urbanized areas in the Sacramento and San Joaquin Valley are visible from the watershed areas on the slopes of the Sierra Nevada and Coast Ranges.

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SoCal/Coastal CVP/SWP Service Areas

Scenic resources within the SoCal/coastal CVP/SWP service areas consist of eight designated scenic highways, and other resources such as the Coast Ranges, parks, river valleys, national wild and scenic rivers, wooded hills, and points of architectural and historic interest. As stated previously, because the proposed program is not expected to have adverse effects on scenic resources within the SoCal/coastal CVP/SWP service areas, these resources are not discussed in detail.

Table 3.2-2 summarizes the scenic resources found within the SoCal/coastal CVP/SWP service areas (see Figure 3.2-1).

Table 3.2-2. Scenic Resources in the SoCal/Coastal CVP/SWP Service Areas

Major Landforms	Scenic Resources	Scenic Routes
San Francisco Bay Area (Napa, Solano, Contra Costa, Alameda, and Santa Clara counties)		
San Francisco Bay and Delta, Coast Ranges, and coastal valleys	San Francisco Bay, coastal mountains (Mount Diablo), rolling wooded hills, agricultural landscapes, reservoirs, river valleys, hillside vineyards, architectural interest in urban areas	State Route 24, Contra Costa County; State Routes 580 and 680, Alameda County; State Route 9, Santa Clara County
Central Coast (San Benito and San Luis Obispo counties)		
Coastal foothills, rocky shores, dunes, bays, sandy beaches, interior Coast Ranges, and valleys	Rock formations within the Coast Ranges (Pinnacles National Monument), rolling hills, rural valleys and oak woodlands; agricultural landscapes; river valleys, reservoirs, sea cliffs, seashore, and dunes (Montana de Oro State Park, Morro Bay); architectural interest, historic interest (Hearst Castle State Park, Mission San Luis Obispo de Telosa); rural communities	State Route 1, San Luis Obispo County
Southern San Joaquin County (Kings, Tulare, and Kern counties)		
Coast Ranges, Sierra Nevada (mountains and foothills), Central Valley floor, dry lake basins, major drainages (Kings and Kern rivers)	High mountain peaks, forested slopes, rolling hills, foothill agriculture (orchards), pastures, river valleys, reservoirs, and agricultural landscapes; steep river canyons	None

Table 3.2-2. Scenic Resources in the SoCal/Coastal CVP/SWP Service Areas (contd.)

Major Landforms	Scenic Resources	Scenic Routes
South Coast (Santa Barbara and Ventura counties)		
Coastal foothills and mountains; sandy beaches, sea cliffs, mesas, Transverse Ranges, and coastal plains and valleys	Coast Ranges (Santa Ynez Mountains, San Marcos Pass), rolling hills, rural valleys, and oak woodlands; agricultural landscapes; river valleys, reservoirs, sand beaches, wetlands, and waterfronts; architectural interest and historic interest (Mission Santa Barbara, downtown Santa Barbara, Solvang); rural communities	State Routes 1 and 154, Santa Barbara County; State Route 33, Ventura County
Southern California (Los Angeles and Orange counties)		
Transverse Ranges, Los Angeles basin, coastal plain	San Gabriel Mountains, chaparral-covered hills, coast, sandy beaches; architectural interest in downtown Los Angeles, Pasadena, beach towns, and other cities	State Route 2, Los Angeles County; State Route 55, Orange County
Inland Southern California (Riverside and San Bernardino counties)		
Inland valleys and desert, and high mountains of the Transverse and Peninsular ranges	Mojave Desert (Joshua Tree National Monument); spring wildflowers; San Bernardino Range and San Jacinto Mountains; hillsides with yucca, mesquite, and sagebrush	State Route 38, San Bernardino County; State Routes 62, 74, and 243, Riverside County
Western San Diego County		
Coastline bluffs, lagoons, sandy beaches, and mesas inland cut by river canyons	Sandy beaches, lagoons, wetlands, mesas, and coastal bluffs (Torrey Pines State Reserve); chaparral-covered hillsides; architectural interest in Balboa Park, Hotel del Coronado, Mission San Diego de Alcalá, San Diego Bay, boat harbors	State Routes 75 and 125, San Diego County

Sources: USDA 1997; Caltrans 2010; California Coastal Commission 2010

Numerous local flood control facilities are visible within the SoCal/coastal CVP/SWP service areas. Among these are Prado Dam and Seven Oaks Dam, their associated reservoirs and basins, and concrete flood control channels that convey flows through heavily urbanized areas (i.e., Los Angeles and San Gabriel rivers).

3.2.2 Regulatory Setting

The following text summarizes federal, State, and regional and local laws and regulations pertinent to evaluation of the proposed program’s impacts on aesthetic resources.

Federal

Wild and Scenic Rivers Act The Wild and Scenic Rivers Act (WSRA) of 1968, as amended (Public Law 90-542; 16 U.S. Code 12371–1287), established the National Wild and Scenic Rivers System (National System), which identifies distinguished rivers of the nation that possess remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values. The WSRA preserves the free-flowing condition of rivers that are designated and protects their local environments. Section 5(d)(1) of the WSRA requires that all federal agencies, when planning for the use and development of water and related land resources, consider potential national wild, scenic, and recreational river areas, which are defined as follows:

- **“Wild” river areas**—Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.
- **“Scenic” river areas**—Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.
- **“Recreational” river areas**—Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past. Scenic qualities are a major consideration in the designation of rivers as wild (pristine), scenic (largely undeveloped), or recreational (mostly developed), although river segments in any of the three categories typically maintain high scenic qualities.

Land Management Plans Some lands within the Extended SPA and extensive acreage in the upper elevations of the Sacramento and San Joaquin Valley Watersheds are managed by the U.S. Forest Service or the U.S. Bureau of Land Management. Both of these agencies have adopted management plans that guide the administration of land uses, including visual resource inventories and criteria for determining visual impacts.

State

California Scenic Highway Program The California Scenic Highway Program, which began in 1963, was created to enhance and protect scenic highways and adjacent corridors. A scenic highway designation is based on the scenic quality of the landscape, the amount of a natural landscape that can be seen by travelers, and the extent to which development intrudes upon the landscape. Official designation requires a local jurisdiction to

enact a scenic corridor protection program that protects and enhances scenic resources (Caltrans 2012).

California Wild and Scenic Rivers Act The California Wild and Scenic Rivers Act (Public Resources Code, Section 5093.50 et seq.) was passed in 1972 to preserve designated rivers possessing extraordinary scenic, recreation, fishery, or wildlife values. Specific rivers and river segments were included in the act with its initial passage; other rivers and river segments have been added over time. In addition, segments of the McCloud River, Deer Creek, and Mill Creek were protected under the act in 1989 and 1995, respectively, although these segments were not formally designated as components of the California Wild and Scenic Rivers System (California System). The California Wild and Scenic Rivers Act provides several legal protections for rivers included in the California System, beginning with the following legislative declaration (Section 5093.50):

It is the policy of the State of California that certain rivers which possess extraordinary scenic, recreational, fishery, or wildlife values shall be preserved in their free-flowing state, together with their immediate environments, for the benefit and enjoyment of the people of the State. The Legislature declares that such use of these rivers is the highest and most beneficial use and is a reasonable and beneficial use of water within the meaning of Section 2 of Article X of the California Constitution.

As with the National System, scenic qualities are a major component in the determination of whether a river is wild, scenic, or recreational in the California System. Typically all river segments have high scenic qualities.

Regional and Local

Each county and city in the study area has its own general plan policies and local ordinances. Although scenic elements are not a required element of general plans, many cities and counties incorporate goals and policies related to protecting scenic resources into other elements of the general plan or include a scenic element as an optional element. These general plan goals, policies, and elements typically identify important scenic resources, scenic highways, and scenic vistas within the local jurisdiction and propose goals and policies for protection of scenic resources.

3.2.3 Analysis Methodology and Thresholds of Significance

This section provides a program-level evaluation of the direct and indirect effects on the visual environment of implementing management actions included in the proposed program. These proposed management actions are expressed as NTMAs and LTMAAs. The mechanisms by which different

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categories of NTMAs and LTMAs could affect the visual environment are summarized in “Analysis Methodology”; thresholds for evaluating the significance of potential impacts are listed in “Thresholds of Significance.” Potential effects related to each significance threshold are discussed in Section 3.2.4, “Environmental Impacts and Mitigation Measures for NTMAs,” and Section 3.2.5, “Environmental Impacts, Mitigation Measures, and Mitigation Strategies for LTMAs.”

Analysis Methodology

Impact evaluations were based on a review of the management actions proposed under the CVFPP, expressed as NTMAs and LTMAs in this PEIR, to determine whether these actions could potentially result in impacts on the visual environment. NTMAs and LTMAs are described in more detail in Section 2.4, “Proposed Management Activities.” The overall approach to analyzing the impacts of NTMAs and LTMAs and providing mitigation is described in detail in Section 3.1, “Approach to Environmental Analysis”; analysis methodology specific to aesthetics is described below. NTMAs can consist of any of the following types of activities:

- Improvement, remediation, repair, reconstruction, and operation and maintenance of existing facilities
- Construction, operation, and maintenance of small setback levees
- Purchase of easements and/or other interests in land
- Operational criteria changes to existing reservoirs that stay within existing storage allocations
- Implementation of the vegetation management strategy included in the CVFPP
- Initiation of conservation elements included in the proposed program
- Implementation of various changes to DWR and Statewide policies that could result in alteration of the physical environment

All other types of CVFPP activities fall within the LTMA category. NTMAs are evaluated using a typical “impact/mitigation” approach. Where impact descriptions and mitigation measures identified for NTMAs also apply to LTMAs, they are also attributed to the LTMAs, with modifications or expansions as needed.

Implementation of the proposed program would result in construction-related, operational, and maintenance-related impacts on the quality of the visual environment. This analysis evaluates potential visual changes brought about by construction of facilities (including the construction of new facilities and the improvement, remediation, repair, and reconstruction of existing facilities) and by facility operation and maintenance activities that could be visible to the public.

The analysis methodology used is based on the Federal Highway Administration's *Visual Impact Assessment for Highway Projects* (FHWA 1988). The analysis of the proposed program's impacts on aesthetic resources involves considering changes in visual quality brought about by implementing the program and the response that viewers would likely have to these changes. Viewer response is a factor of the number of viewers, their location and distance from the visual resource, the duration of the views, viewers' activities and awareness, viewers' values, and the cultural significance of the visual resources (FHWA 1988:79).

An assessment of visual quality is subjective, and reasonable disagreement can occur as to whether alterations in the visual character of the study area would be adverse or beneficial. For this analysis, a conservative approach was taken, and the potential for substantial change to the visual character of the study area is generally considered a significant impact.

Conveyance-related management actions implemented in the Extended SPA could affect aesthetic resources in that geographic area. None of the program's management activities related to conveyance or identified as other management activities would be implemented in the Sacramento and San Joaquin Valley watersheds. Storage-related management actions implemented in the Extended SPA and the Sacramento and San Joaquin Valley watersheds could affect aesthetic resources in those areas. None of the management activities included in the proposed program would be implemented in the SoCal/coastal CVP/SWP service areas.

Thresholds of Significance

The following applicable thresholds of significance have been used to determine whether implementing the proposed program would result in a significant impact. These thresholds of significance are based on Appendix G of the State CEQA Guidelines, as amended. An impact on aesthetic resources is considered significant if implementation of the proposed program would do any of the following:

- 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
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area

3.2.4 Environmental Impacts and Mitigation Measures for NTMAs

This section describes the physical effects of NTMAs on aesthetic resources. For each impact discussion, the environmental effect is determined to be either less than significant, significant, potentially significant, or beneficial compared to existing conditions and relative to the thresholds of significance described above. These significance categories are described in more detail in Section 3.1, “Approach to Environmental Analysis.” Feasible mitigation measures are identified to address any significant or potentially significant impacts. Actual implementation, monitoring, and reporting of the PEIR mitigation measures would be the responsibility of the project proponent for each site-specific project. For those projects not undertaken by, or otherwise subject to the jurisdiction of, DWR or the Board, the project proponent generally can and should implement all applicable and appropriate mitigation measures. The project proponent is the entity with primary responsibility for implementing specific future projects and may include DWR; the Board; reclamation districts; local flood control agencies; and other federal, State, or local agencies. Because various agencies may ultimately be responsible for implementing (or ensuring implementation of) mitigation measures identified in this PEIR, the text describing mitigation measures below does not refer directly to DWR but instead refers to the “project proponent.” This term is used to represent all potential future entities responsible for implementing, or ensuring implementation of, mitigation measures.

Impact VIS-1 (NTMA): *Temporary, Short-Term Construction-Related Changes in Scenic Vistas, Scenic Resources, and Existing Visual Character*

NTMAs involving reconstruction and improvement of levees or other construction work could temporarily reduce the aesthetic qualities of views in the Extended SPA. Several types of activities could affect views: raising or improving existing levees; constructing floodwalls, seepage and stability berms, slurry cutoff walls, and small levee setbacks; and installing relief wells, toe drains, and landside slope armoring. This impact addresses the

temporary change in the visual character of an area associated with the process of constructing these facilities. Permanent changes in visual character from facilities being present are addressed in separate impact discussions below.

Project construction would require the use of staging areas, access haul roads, and borrow or quarry sites. Heavy construction equipment, including scrapers, graders, dozers, and cranes, would be present and moving around project sites. Waterside construction projects might require the use of barges to transport construction materials (rock or earthen fill) from borrow or quarry sites to project sites. Construction activities would occur for varying lengths of time in various locations; however, these activities would result in only temporary, localized changes in the existing visual character for sensitive viewers, such as residents and recreationists.

Sites temporarily disturbed during project construction would typically be restored to preproject conditions consistent with required storm water pollution prevention plans (SWPPPs) (see Subsection 3.21.2, “Regulatory Setting,” in Section 3.21, “Water Quality,” for a discussion of the development and implementation of SWPPPs). Where development of borrow sites triggers compliance with the Surface Mining and Reclamation Act (SMARA) (see Subsection 3.10.2, “Regulatory Setting,” in Section 3.10, “Geology, Soils, and Seismicity (Including Mineral and Paleontological Resources),” for a description of SMARA requirements) the sites would be reclaimed pursuant to conditions of this statute. In addition, implementing mitigation measures described throughout Chapter 3.0 of this PEIR would require that staging areas and access haul roads be restored to preproject conditions and that borrow or quarry sites be reclaimed.

Construction activities would only result in temporary alterations in the visual character of project sites because the construction process is short-term, and temporarily disturbed areas supporting construction activities would be restored to preproject conditions. Furthermore, construction sites would generally be small in nature and limited to specific, localized levee repairs, reconstruction, improvements, and construction of new small setback levees generally less than 0.75 mile in length. Thus, construction activities would not result in substantial adverse effects on scenic vistas, scenic resources, or a substantial degradation of the visual character of project sites. Therefore, this impact would be **less than significant**. No mitigation is required.

Impact VIS-2 (NTMA): *Degradation of Scenic Vistas, Scenic Resources, and Existing Visual Character Resulting from Conveyance-Related Management Activities*

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Conveyance-related NTMAs, which would involve raising or improving existing levees; constructing floodwalls, seepage and stability berms, slurry cutoff walls, and small levee setbacks; and installing relief wells, toe drains, landside slope armoring; and new or replacement flood control facilities (e.g., pumping stations) that would cause localized changes to views that could be visible to residents, recreationists, and travelers (i.e., sensitive viewers) in the Extended SPA.

In urban settings, where the highest numbers of sensitive viewers would be expected, the existing levee system would typically be repaired, reconstructed, or otherwise improved in place. Construction would use methods with smaller disturbance footprints (e.g., slurry cutoff walls, small levee widening), because it would often be cost prohibitive to purchase existing developed parcels to support repair options with large footprints, such as setback levees. Therefore, following repair, reconstruction, or improvement activities in urban settings, the visual character of the existing levee system would generally be consistent with current conditions. Larger footprint activities, such as construction of setback levees (generally less than 0.75 mile in length) and wide seepage berms, would typically occur in rural areas where there are few sensitive viewers, and where flood control structures are common visual features. Implementing NTMAs would not result in a substantial alteration in the existing visual character of the sites.

Where replacement structures are needed for flood control facilities (e.g., replacement pumping stations along a setback levee alignment), the new facilities would generally be consistent in size and form with the existing structure and would remain consistent with the visual character of the area.

Widening or extending existing levee footprints toward the landside or constructing levee setbacks would require that vegetation under the levee footprints, including trees and other woody vegetation, be removed. However, vegetation would be retained along the waterside of the existing levee, or adjacent to the “old” levee where a setback levee is constructed. Raising and strengthening levees, placing levee armoring, and constructing seepage and stability berms would affect primarily landside vegetation. Vegetation on sections of the levee not affected by the construction activities would remain in place. Levee slopes and seepage berms would be seeded with appropriate seed mixes in accordance with SWPPPs prepared by the project proponents. Therefore, vegetation-related effects on aesthetic character would not be substantial with implementation of conveyance-related NTMAs. For impacts related strictly to vegetation management activities as part of facility operations and maintenance, see Impact VIS-5 (NTMA) below.

Overall, conveyance-related NTMAs would not cause substantial, localized changes to the existing visual character of the Extended SPA. NTMAs with the greatest potential to alter visual conditions would occur in rural areas where flood control structures are common visual features, and the visual character of the existing levee system would generally be consistent with current conditions. This impact would be **less than significant**. No mitigation is required.

Impact VIS-3 (NTMA): *Degradation of Scenic Vistas, Scenic Resources, and Existing Visual Character Resulting from Storage-Related Management Activities*

Reoperating water storage facilities (changing the operations of reservoirs) as part of the NTMAs might alter the amount and timing of the annual reservoir drawdown in some reservoirs in the SPFC. This in turn could cause substantial, localized changes to views for residents, recreationists, and travelers (i.e., sensitive viewers) in the Extended SPA. These effects would be especially noticeable in public recreation areas where viewer sensitivity is high.

Increased drawdown related to changes in reservoir operations might cause a greater area of shoreline to be exposed because of lower water levels, thereby reducing the visual character of the surrounding area. However, operational changes to reservoir releases under NTMAs would involve improving coordination of release schedules among reservoirs and basing releases on more accurate weather forecasting. Therefore, the additional drawdown would be comparable to existing seasonal variations, the fluctuations in reservoir water levels would not vary substantially from year to year, and the fluctuations would cause relatively minor changes in surface water elevations. Therefore, the overall quality of the visual character would generally be consistent with current viewer expectations. This impact would be **less than significant**. No mitigation is required.

Impact VIS-4 (NTMA): *New Sources of Substantial Light and Glare*

Introducing new sources of lighting could adversely affect daytime or nighttime views in areas of the Extended SPA where artificial lighting is currently limited or nonexistent. Construction activities related to reconstructing and improving levees could temporarily introduce light or glare at some locations. Equipment staging areas and construction areas might be lit at night for security purposes and illumination of nighttime construction work.

For many conveyance-related NTMAs that are linear in nature or can be implemented in relatively short time frames (e.g., construction of slurry

cutoff walls, installation of seepage berms), construction activities generally would not take place in any one location for more than a few weeks. Therefore, nighttime lighting related to construction would be a temporary, short-term effect. NTMAs with longer construction time frames, such as construction of setback levees, are unlikely to require nighttime construction, although staging areas with security lighting may be present for several months. Nevertheless, construction activities would introduce new sources of lighting that could result in adverse effects on nighttime views in localized areas near the source of construction.

The proposed program could include constructing new or replacement flood control facilities (e.g., pumping stations) that could include lighting and building materials that cause glare. Introducing new long-term or permanent sources of light and glare could result in adverse effects on daytime or nighttime views. Therefore, this impact would be **potentially significant**.

Mitigation Measure VIS-4 (NTMA): *Establish and Require Conformance to Lighting Standards, and Prepare and Implement a Lighting Plan*

Not all mitigation measures listed below may be applicable to each management action. Rather, these mitigation measures serve as an overlying mitigation framework to be used for specific management actions. The applicability of mitigation measures would vary based on the lead agency, location, timing, and nature of each management action.

The project proponent will ensure that the following measures are implemented where project activities occur in the vicinity of sensitive light receptors to reduce potentially significant adverse effects associated with light and glare:

- If construction lighting is needed, contractors will be required to shield or screen lighting fixtures and direct lights downward onto the work site and prevent significant light spill onto adjacent properties.
- Contractors will place and direct flood or area lighting needed for construction activities or for security so as not to significantly disturb adjacent residential areas, passing motorists, or other light-sensitive receptors.
- The use of harsh mercury vapor, low-pressure sodium, or fluorescent bulbs or light fixtures that are of unusually high intensity or brightness will be prohibited unless there is no practicable alternative.

- Where applicable and practicable, lighting fixtures will meet lighting standards of the local jurisdiction. Design features that will reduce the effects of nighttime lighting, namely directional shielding for all substantial light sources, will be included in the project designs. In addition, the use of automatic shutoffs or motion sensors for lighting features will be considered in the project designs to further reduce excess nighttime lighting. All nighttime lighting will be shielded to prevent the light from shining off the surface intended to be illuminated.
- Materials with natural colors and low-reflection materials will be used on all new or replacement structures to the extent feasible so that the facilities appear more consistent with the existing character of the area and do not generate excessive glare.

Implementing this mitigation measure would reduce Impact VIS-4 (NTMA) to a **less-than-significant** level.

Impact VIS-5 (NTMA): *Effects of Other NTMAs on Aesthetic Resources*

Other NTMAs that might affect the aesthetic qualities of views in the Extended SPA include implementing the proposed vegetation management strategy. As part of the vegetation management strategy, levee-maintaining agencies would implement a vegetation life-cycle management (LCM) plan along legacy levees that would affect trees and other woody vegetation within a defined vegetation management zone extending from 15 feet of the landside toe to 20 feet below the waterside crown. This approach would remove woody vegetation less than 4 inches in diameter in the near term, and allow trees and other woody vegetation above 4 inches in diameter (that do not pose an unacceptable risk) to remain in their current location until they die. After they die, the trees and woody vegetation would be removed on an individual basis. Implementing the LCM would therefore result in a gradual reduction in mature riparian vegetation in the vegetation management zone along some parts of some levee segments. However, in many instances, riparian vegetation would be retained along levees outside the vegetation management zone. In addition, the vegetation management strategy includes the early establishment of riparian forest corridors to compensate for the potential eventual loss of this habitat. These corridors would be established adjacent to existing and new levees (where space is available) such that the net effect would be to maintain and improve the quality of the riparian corridor. This approach would allow replacement habitat to develop and mature over time while other mature riparian trees are slowly removed through LCM implementation.

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Overall, implementing the LCM would result in a gradual thinning or removal of mature riparian vegetation in some areas along legacy levees; however, in many cases, this would only result in the loss of the edge of a wider riparian corridor with little change in the visual character of the site. In other situations, woody riparian vegetation removed as part of LCM would be replaced on adjacent lands (where space between the levee and waterway is available), resulting in the maintenance of riparian habitat in the area. Furthermore, DWR and other agencies responsible for maintaining the current levees have previously undertaken efforts to bring levee vegetation up to the interim maintenance standards being incorporated into the LCM. Therefore, only small changes in the amount of vegetation on existing levees are anticipated along many levee segments. This small, gradual change from one vegetation type to another would not be perceptible to most viewers and is not considered a substantial degradation of the visual character of the site. In addition, many of the locations at which such a shift from woody to herbaceous vegetation would occur are in rural settings that are visible to only a limited number of viewers.

New levees would often be designed and constructed to include a specially designed waterside planting berm to accommodate trees and other woody vegetation to provide shaded riverine aquatic habitat along the river. Although this design feature could be included in newly constructed levees, the design of new levees would still be consistent with the U.S. Army Corps of Engineers' Engineering Technical Letter No. 1110-2-571, *Guidelines for Landscape Planting and Vegetation Management at Levees, Floodwalls, Embankment Dams, and Appurtenant Structures* (USACE 2009). Where setback levees are constructed, riparian vegetation could be planted on the former levee that has been replaced. Therefore, construction of new levees or small setback levees as part of the NTMAs would result in a beneficial effect on aesthetic resources because trees and woody vegetation in the local viewshed would increase.

The loss of trees and woody vegetation that would occur from implementing other NTMAs would not substantially adversely affect the visual character of the Extended SPA. Many of the other NTMAs would occur in rural areas where there would be few sensitive viewers. In addition, sensitive viewers would gradually become accustomed to changes in the visual character because the loss of trees and woody vegetation would occur slowly over multiple decades, one tree at a time, and vegetation would be replaced in many locations through implementation of the vegetation management strategy and conservation elements. This impact would be **less than significant**. No mitigation is required.

3.2.5 Environmental Impacts, Mitigation Measures, and Mitigation Strategies for LTMA

This section describes the physical effects of LTMA on aesthetic resources. LTMA include a continuation of activities described as part of the NTMA and all other actions included in the proposed program, and consist of all of the following types of activities:

- Widening floodways (through setback levees and/or purchase of easements)
- Constructing weirs and bypasses
- Constructing new levees
- Changing operation of existing reservoirs
- Achieving protection of urban areas from a flood event with 0.5 percent risk of occurrence
- Changing policies, guidance, standards, and institutional structures
- Implementing additional and ongoing conservation elements

Actions included in the LTMA are described in more detail in Section 2.4, “Proposed Management Activities.”

Impacts and mitigation measures identified above for NTMA would also be applicable to many LTMA and are identified below. The NTMA impact discussions and mitigation measures are modified or expanded where appropriate, or new impacts and mitigation measures are included if needed, to address conditions unique to LTMA. The same approach to future implementation of mitigation measures described above for NTMA and the use of the term “project proponent” to identify the entity responsible for implementing mitigation measures also apply to LTMA.

LTMA Impacts and Mitigation Measures

Impact VIS-1 (LTMA): Temporary, Short-Term Construction-Related Changes in Scenic Vistas, Scenic Resources, and Existing Visual Character

Construction activities for LTMA could be visible to residents, recreationists, and travelers (i.e., sensitive viewers) and would temporarily reduce the aesthetic qualities of views of the Extended SPA. This impact would be similar to Impact VIS-1 (NTMA), described above; however, the scale and magnitude of the effects would be greater for LTMA. Removing

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existing levees, widening or expanding existing weirs and bypasses, and constructing new levees and new bypasses could cause greater effects on views. Construction activities would occur for varying lengths of time in various locations and would temporarily degrade the existing visual character for sensitive viewers. However, the project proponent would prepare and implement a SWPPP and comply with SMARA where applicable. In addition, implementation of mitigation measures described throughout Chapter 3.0 of this PEIR would require that staging areas and access haul roads be restored to preproject conditions and that borrow or quarry sites be reclaimed. Finally, construction of the proposed LTMA is not anticipated to occur over a large enough area to cause substantial degradation of the viewshed. For the reasons stated above, this impact would be **less than significant**. No mitigation is required.

Impact VIS-2 (LTMA): Degradation of Scenic Vistas, Scenic Resources, and Existing Visual Character Resulting from Conveyance-Related Management Activities

This impact would be similar to Impact VIS-2 (NTMA). However, the scale and magnitude of the effects would be greater for LTMA. Constructing larger setback levees, removing existing levees, widening or expanding existing weirs and bypasses, and constructing new levees and new bypasses could cause additional effects on scenic vistas and scenic resources and could change the existing visual character of the Extended SPA.

Overall, however, conveyance-related LTMA would not cause substantial changes to the existing visual character of the Extended SPA. Large conveyance-related LTMA would occur in rural areas where few sensitive viewers are present and flood control structures are common visual features. Activities that require widening or expanding existing weirs and bypasses would occur close to existing levees, and therefore would be consistent with the existing visual character. Widening or extending existing footprints or constructing new levees would require removal of vegetation under the levee footprints, including trees and other woody vegetation. Vegetation not affected by the construction activities would remain in place, and temporarily disturbed areas would be reseeded in accordance with SWPPPs prepared by the project proponent. This impact would be **less than significant**. No mitigation is required.

Impact VIS-3 (LTMA): Degradation of Scenic Vistas, Scenic Resources, and Existing Visual Character Resulting from Storage-Related Management Activities

Storage-related LTMAAs would be similar to those described for storage-related NTMAAs, and this impact, as it applies to visual conditions at program reservoirs, would be similar to Impact VIS-3 (NTMA). This impact would be **less than significant**. No mitigation is required.

Impact VIS-4 (LTMA): *New Sources of Substantial Light and Glare*

Introducing new sources of lighting could adversely affect nighttime views in areas of the Extended SPA where artificial lighting is currently limited or nonexistent. Construction activities could temporarily introduce light or glare at some locations. Equipment staging areas and construction areas might be lit at night for security purposes and illumination of nighttime construction.

In addition, replacement flood control facilities (e.g., pumping stations) that require lighting would introduce new long-term sources of light and could include building materials that cause glare. Introducing new permanent sources of light and glare could result in potentially significant adverse effects on nighttime views. These effects would be similar to those described in Impact VIS-4 (NTMA). This impact would be **potentially significant**.

Mitigation Measure VIS-4 (LTMA): *Implement Mitigation Measure VIS-4 (NTMA)*

Implementing this mitigation measure would reduce Impact VIS-4 (LTMA) to a **less-than-significant** level.

Impact VIS-5 (LTMA): *Effects of Other LTMAAs on Aesthetic Resources*

Other LTMAAs that might affect the visual character of the Extended SPA include implementing an LCM plan and integrating conservation elements. Effects of these activities would be similar to those described above for NTMAAs in Impact VIS-5 (NTMA). Integrating conservation elements into LTMAAs could also improve the aesthetic qualities of views in the Extended SPA by increasing the connectivity of floodplain habitat to rivers, as well as among riparian and other riverine habitats; modifying floodways to provide greater topographic diversity; expanding native vegetation; and reducing the spread of invasive plants. This impact would be **less than significant**. No mitigation is required.

3.0 Environmental Setting, Impacts, and Mitigation Measures
3.2 Aesthetics

LTMA Impact Discussions and Mitigation Strategies

The impacts of the proposed program's NTMAs and LTMAs related to aesthetic resources and the associated mitigation measures are thoroughly described and evaluated above. The general narrative descriptions of additional LTMA impacts and mitigation strategies for those impacts that are included in other sections of this draft PEIR are not required for aesthetic resources.

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