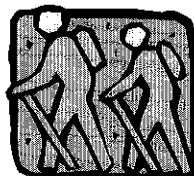


7.13 Visual Resources

The CALFED Bay-Delta Program would result in beneficial and adverse effects on visual resources. Beneficial impacts include visual improvements from restored woodland, riparian, and wetland habitats. Potentially significant unavoidable impacts on visual resources are associated with visually dominant features, such as new levees, embankments, and reservoirs.

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7.13 Visual Resources

7.13.1 SUMMARY

Both natural and artificial landscape features contribute to perceived visual images and the aesthetic value of a view. Aesthetic value is influenced by geologic, hydrologic, botanical, wildlife, recreational, and urban features. Visual images and their perceived visual quality can vary significantly by season and even by time of day as weather, light, shadow, and the elements that comprise the viewscape change. Judgments of visual quality must be based on a regional frame of reference. Geographic area also is a factor in evaluating visual qualities.

Judgments of visual quality must be based on a regional frame of reference. Geographic area also is a factor in evaluating visual qualities.

Individuals respond differently to changes in the physical environment, depending on their experience of that environment prior to changes, the extent and nature of those changes, and the proximity and duration of their views. The aesthetic value of an area is a subjective measure of its visual character and scenic quality.

All Alternatives. Program actions could result in beneficial and adverse impacts on visual resources. Beneficial impacts include visual improvements due to restored woodland, riparian, and wetland habitats. Short-term adverse visual impacts could be associated with construction activities, such as dust, construction staging areas, and glare from night-time lighting. Long-term adverse impacts in the Delta could result from the high visibility of channels, levees, in-channel flow control structures, dams and reservoirs, or other facilities. Some of these potentially significant adverse impacts are unavoidable. In the Bay, Delta, Sacramento River, and San Joaquin River Regions, shoreline “rings” around reservoirs caused by fluctuating water levels could cause a potentially significant unavoidable impact on visual resources.

The Conveyance element under Alternative 3 could result in greater visual impacts than the other alternatives because of the isolated conveyance facility.

The following table presents the potentially significant adverse impacts and mitigation strategies associated with the Preferred Program Alternative. Mitigation strategies that correlate to each listed impact are noted in parentheses after the impact.



**Potentially Significant Adverse Impacts and Mitigation Strategies
Associated with the Preferred Program Alternative**

Potentially Significant Adverse Impacts

Visual impacts from construction activities, such as vegetation removal, construction staging areas, night-time glare from construction lights, haul routes, and dust creation (1,2,3,4,5,8).

Presence of constructed linear and obtrusive features (such as dams and spillways), view obstructions, and a bathtub ring effect caused by fluctuating water levels from drawdown and replenishment of storage reservoirs (1,9,10,11,12).

Introduction of new levees and embankments that could visually dominate the surrounding flat, open landscape (10,11,12).

Introduction of new facilities that may obstruct or disrupt visual resources (5,10,11,12).

Impacts in visually sensitive areas from restoration actions, such as creating borrow pits for gravel replacement and installing fish screens in areas with high visual sensitivity (7,9).

Degraded watershed views from such actions as altered timber harvesting practices (3,8).

Creation of borrow pits or spoils material disposal sites associated with storage, conveyance, and levee projects (8,9,10,11,12).

Long-term visual impacts from construction activities extending more than 5 years (1,2,3,4,5,8,9).

Mitigation Strategies

1. Timing changes in flow regimes to minimize "bathtub ring" effects during times of peak recreation use.
2. Minimizing construction activities during the peak-use recreation season.
3. Avoiding unnecessary ground disturbance outside the necessary construction area.
4. Watering areas where dust is generated, where feasible, particularly along unpaved haul routes and during earth-moving activities, to reduce visual impacts caused by dust.
5. Locating and directing exterior lighting for construction activities so that it is concealed to the extent practicable when viewed from local roads, nearby communities, and any recreation areas.
6. Siting proposed reservoir(s), if possible, to minimize required cut-and-fill and locating the reservoir on the flattest topographic section of the site to minimize its visibility.
7. Constructing facilities such as pumping-generating plants with earth-tone building materials.
8. Revegetating disturbed areas as soon as possible after construction.
9. Locating visually obtrusive features, such as borrow pits and dredged material disposal sites, outside visually sensitive areas and observation sites.
10. Selecting vegetation type, placement, and density to be compatible with patterns of existing vegetation where revegetation occurs in natural areas.
11. Installing landscape screening, such as grouped plantings of trees and tall shrubs, to screen proposed facilities, such as pumping-generating plants, from nearby sensitive viewers, such as motorists and residents.
12. Using native trees, bushes, shrubs, and ground-cover for landscaping, when appropriate, at facilities such as dams and pumping-generating plants, and along new and expanded canals and conveyance channels, in a manner that does not compromise facility safety and access.



Potentially Significant Adverse Impacts and Mitigation Strategies
Associated with the Preferred Program Alternative
(continued)

- | | |
|--|--|
| <p>13. Creating viewing opportunities of outstanding features (such as Mount Diablo and the Vaca Mountains) through selective vegetation reduction or constructing roadside viewing areas.</p> | <p>14. Recontouring and adding vegetation to areas rated as "poor" in variety class.</p> |
|--|--|

Bold indicates a potentially significant unavoidable impact.

7.13.2 AREAS OF CONTROVERSY

Areas of controversy as defined by CEQA involve differences of opinion among technical experts or information that is not available and cannot be readily obtained. According to this definition, no areas of controversy relate to visual resources. In addition, no areas of concern are associated with visual resources.

7.13.3 AFFECTED ENVIRONMENT/ EXISTING CONDITIONS

Existing visual resources are described below in terms of variety classes, a ranking system from distinctive visual features (Class A) to minimal visual features (Class C). Refer to Section 7.13.4, "Assessment Methods," for additional information on this method of categorizing visual resources.

7.13.3.1 DELTA REGION

Most of the Delta is devoted to farming. The region is interlaced with a network of waterways and levees designed to protect the Delta's islands and tracts. Reclamation efforts have dramatically changed the Delta landscape since the 1850s, after the federal Swamp and Overflowed Lands Act was passed. Large expanses of wetlands, riparian corridors, and open water were replaced by agricultural lands in low-lying tracts surrounded by levees. As upstream agricultural diversions created greater tidal intrusion of saline water, these agriculture lands were subsequently converted to managed wetland habitat for waterfowl use. By 1930, only a small amount of the natural landscape remained. Levee failures in 1930 resulted in islands flooding throughout the Delta, several of which have not been converted back to agriculture.

The Delta is interlaced with a network of waterways and levees designed to protect the Delta's islands and tracts.

By the 1940s, only a few small settlements existed in the Delta. Following World War II, urbanization expanded along the edges of the Delta. From 1946 to 1964, commercial shipping and recreational boating in the Delta increased, followed by marina develop-



ment. Since 1975, urbanization has continued in the Delta, especially in eastern Contra Costa, San Joaquin, and Sacramento Counties.

Major visual resources in the Delta Region include the SRAs of Franks Tract, Brannon Island, and Windy Cove; Stone Lakes NWR; the Cosumnes-Mokelumne River confluence wildlife preserve; and several private marinas, camping, and fishing sites. SR 160 is a state-designated scenic highway from Antioch to Freeport. Representative Variety Classes A and B resources viewed from the Delta include Mount Diablo in Contra Costa County and the Vaca Range in Napa and Solano Counties.

The main roads from which travelers can view the Delta are SRs 160, 4, and 12. In many sections of SRs 4 and 12, it is impossible to view the Delta waterways, but features such as Mount Diablo can be seen.

Major visual resources in the Delta Region include the SRAs of Franks Tract, Brannon Island, and Windy Cove; Stone Lakes NWR; and the Cosumnes-Mokelumne River confluence wildlife preserve.

7.13.3.2 BAY REGION

Heavy urbanization and industrial uses currently characterize the Bay Region, although some areas remain in open space. Prior to the 1930s, the Bay Area's visual character was dominated by the urban skyline of San Francisco; the remainder of the region was more rural and less developed. Urbanization and reclamation began changing land use in the Bay Region. Over the last 60 years, the Bay Region has become progressively more urbanized, although open space has been preserved along the major ridgelines that surround San Francisco Bay.

Heavy urbanization and industrial uses currently characterize the Bay Region.

Major visual resources in the Bay Region include:

- San Pablo Bay NWR
- Benicia SRA
- Martinez Shoreline (EBRPD)
- Carquinez Strait Shoreline (EBRPD)
- China Camp State Park
- Point Pinole (EBRPD)
- Suisun Marsh
- Grizzly Island WMA

Open space has been preserved along the major ridgelines that surround San Francisco Bay.

The most visually dominant feature from the east side of the Bay Region is Mount Diablo in southern Contra Costa County and the Diablo Ridge, which frames the southern half of the valley. Rising 3,849 feet above mean sea level, Mount Diablo is also visible throughout the western half of the Sacramento Valley.

The Suisun Marsh is located in the Bay Region. The marsh is the largest contiguous wetlands in California. Much of the marsh was reclaimed during the late nineteenth and early twentieth centuries; for example, reclamation efforts converted about half of Suisun Marsh to agricultural use by 1930.



7.13.3.3 SACRAMENTO RIVER REGION

The Sacramento River Region is visually characterized by agricultural uses in the Sacramento Valley, and grasslands and woodlands in the foothills and forests in the upper watersheds. The historical changes in the Sacramento Valley from grasslands, floodplains, and extensive riparian areas to cropland, rice fields, and orchards have reduced visual variety. Prior to the 1940s, the Sacramento Valley was made up of grasslands, scattered oak woodlands, wetlands, vernal pools, and riparian areas. The Sacramento River Region's upper watershed retained its predominately oak woodland, grasslands, forests, and small rural communities despite substantial development along state and federal highways in the foothills and mountain areas. These areas are framed by the forested ridgelines of the Sierra Nevada to the east, the Cascade Range to the north, and the Coast Ranges to the west. Little urbanization in these areas has preserved pristine wildernesses, mountains, and other dramatic landscapes. As a result, areas along I-5, SR 99, SR 70, and other roads generally are Variety Class C.

Important visual resources that could be inventoried as Class A features include the Sacramento, Sutter, and Colusa NWRs; Grey Lodge WMA; and the Colusa-Sacramento River SRA. Other important visual resources in the Sierra foothills include the SRAs at Lake Oroville, Folsom Lake, and Auburn.

Much of the northern and eastern upper watershed of the Sacramento River Region is forest, which blocks views for motorists traveling through these areas. Potential Class A visual features include state and federal park and recreation areas, such as Plumas Eureka State Park, Whiskeytown-Shasta-Trinity NRA, and Lassen Volcanic National Park. The Sutter Buttes, Mount Lassen, and Mount Shasta are prominent mountain features visible from a large portion of the north Central Valley. Mount Lassen, with an elevation 10,457 feet above msl, is a dominant visual feature in the northeastern watershed, visible from throughout the northern Sacramento Valley. SR 70, which traverses Butte and Plumas Counties, is eligible for scenic highway designation. Clear Lake, the largest natural lake in California, is the most distinctive visual feature on the west side of the Sacramento Valley.

Constructing dams and reservoirs substantially changed the visual landscape. Whiskeytown, Shasta, and Black Butte Reservoirs have added visual variety to this region. Viewer sensitivity is high in these areas because of high recreation use and easy public access.

Major urban areas include Sacramento, Redding, Red Bluff, and Chico. A section of SR 36 (in Tehama and Plumas Counties, from SR 89 near Morgan Summit to SR 89 near Deer Creek) is eligible as a state-designated scenic highway. Trinity County is eligible for scenic designation, along with SR 70.

Federally designated wild and scenic rivers include the Middle Fork of the Feather River, the North Fork of the American River, and the Lower American River reach that flows through Sacramento.

The Sacramento River Region is visually characterized by agricultural uses in the Sacramento Valley, grasslands and woodlands in the foothills, and forests in the upper watersheds.

The Sutter Buttes, Mount Lassen, and Mount Shasta are prominent mountain features visible from a large portion of the north Central Valley.



7.13.3.4 SAN JOAQUIN RIVER REGION

Much of the land in the San Joaquin River Region is agricultural (Variety Class C). The valley floor is primarily irrigated agriculture, and cattle graze in many of the mountain meadows in the upper watershed areas. Much of the upper watershed on the east side of the San Joaquin Valley is forested, which limits views for motorists traveling through the area. The watershed areas on the west side of the San Joaquin Valley are a mix of suburban areas surrounded by low-lying agricultural lands. Major urban communities include Modesto, Stockton, Fresno, and Bakersfield.

Historically, this region encompassed both high-elevation forestland and lower-elevation open grasslands, scattered oak woodlands, wetlands, vernal pools, and riparian areas. The San Joaquin River Region is bordered on the east by the Sierra Nevada, on the south by the Tehachapi Mountains, and on the northwest by the Coast Ranges. Yosemite Valley is in the northeast portion of the region. In the south, Tulare Lake at one time occupied close to 800 miles of the valley floor, fed by the Kings, Kaweah, and Tule Rivers. At least one account records when the lake, swollen by flood waters, overflowed natural land barriers and merged with the San Joaquin Delta. In the mid-to-late 1800s, the lake contained excursion paddle-wheelers and a thriving commercial fishery. Waterfowl and wildlife were plentiful on and near the lake. In the years after the Swamp and Overflowed Lands Act of 1852 was enacted, however, reclamation efforts and upstream irrigation projects restricted water flow into the lake until only a lake bed remains today. Prior to the 1940s, developed communities were sparse, and those that existed were concentrated mostly in the Fresno and Modesto areas. Post-war agricultural development and increased urbanization continued the changes to the visual landscape that were started in the nineteenth century, by replacing grasslands with irrigated cropland and reducing what remained of the wetlands, vernal pool, and riparian areas.

The upper watershed areas of the San Joaquin River Region have remained relatively untouched over the last 150 years. The upper watershed is still predominantly oak woodland, grassland, and forest, with some limited rural development. These areas are framed by the forested ridgeline of the Sierra Nevada to the east and the Tehachapi Mountains to the south. Lack of development has preserved the scenic qualities of these areas; however, over the past 30 years, increasingly developed viewsapes have encroached along the major roadways in this region.

Important (Variety Class A or B) visual resources on the valley floor include the San Luis NWR complex, Mendota and Volta NWRs, and the San Luis Reservoir. In the Sierra Nevada, major visual resources include several SRAs and reservoirs such as Camanche, New Don Pedro, and Pine Flat. Lakes in the area include New Hogan, New Melones, McClure, Eastman, Millerton, Kaweah, Success, and Isabella. Other important visual resources include the Colonel Allensworth State Historic Park, Tule Elk State Reserve, and Pixley NWR.

Major (Class A) visual resources in the upper watershed areas of the region include Yosemite National Park and several wilderness areas. The John Muir Wilderness, in the Sierra and Inyo National Forests, encompasses 584,000 acres in the Sierra Nevada and is

Much of the land in the San Joaquin River Region is agricultural. The valley floor is primarily irrigated agriculture, and cattle graze in many of the mountain meadows in the upper watershed areas.

Visual resources in the upper watershed areas of the region include Yosemite National Park and several wilderness areas.



the largest designated wilderness area in California. Other smaller wilderness areas include Emigrant Wilderness, which covers approximately 117,600 acres adjacent to Yosemite National Park and where elevations range from 6,000 to 12,000 feet above msl.

Major highways with high viewer sensitivity that provide access to Yosemite or Kings Canyon-Sequoia National Parks include SRs 140, 120, 196, and 41. Most of the urbanized areas along I-5 and SR 99 are Variety Class C. State routes eligible for state scenic highway status include SR 33 (in Fresno County, from SR 198 near Coalinga to SR 198 near Oilfields), SR 168 (in Fresno County, from SR 65 near Clovis to Huntington Lake), and SRs 190 and 198 (in Tulare County, from SR 65 in Porterville to the county line). Portions of I-5 and SR 152 (with views of San Luis Reservoir) are designated as scenic highways.

Federally designated wild and scenic rivers include the South Fork of the Merced River, the Middle and South Forks of the Kern River, and the Tuolumne River.

7.13.3.5 OTHER SWP AND CVP SERVICE AREAS

The Other SWP and CVP Service Areas region includes two distinct, noncontiguous areas: in the north, are the San Felipe Division's CVP service area and the South Bay SWP service area; to the south, are the SWP service areas. The northern section of this region encompasses parts of the central coast counties of Santa Clara, San Benito, Santa Cruz, and Monterey. The southern portion includes parts of Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura Counties.

Historically, the southern portion of the region consisted of relatively arid landscape, with topography that ranged from steep, rugged coastal hills and mountains to the fertile plains of the San Fernando Valley. Historical growth was concentrated first along the coast, especially in San Diego and Los Angeles Counties. With water supply development, the inland portions of this area developed into a highly productive agricultural region. Since the 1940s, expanding urban and suburban areas have dominated the landscape.

Much of the region is now urbanized, especially in Los Angeles, Orange, San Diego, San Bernardino, and Riverside Counties. However, major undeveloped areas also provide significant visual resources, including the Los Padres National Forest and Ventura Wilderness, national forestland in the San Gabriel and San Bernardino Mountain Ranges, and the Cleveland National Forest.

The Santa Clara Valley is a flat, gently sloping valley floor that is surrounded by the low, rolling to steep foothills of the Diablo Range to the east and the Santa Cruz Mountains and Gabilan Range to the west. Some coastal areas near Watsonville include tidelands. Historically, this area has been used for agriculture—mostly fruit trees, irrigated crops, and livestock. The first significant European settlement accompanied the founding of the Spanish Mission Santa Clara in 1777. Farming in the area became prevalent after California joined the United States in 1848. By 1880, commercial fruit growing was an

Historically, the southern portion of the region consisted of relatively arid landscape, with topography that ranged from steep, rugged coastal hills and mountains to the fertile plains of the San Fernando Valley.



established industry. In the post-World War II development, groundwater supplies were depleted, and water from the SWP and CVP was imported through the Pacheco Tunnel from the San Luis Reservoir to Santa Clara and San Benito Counties. Today, CVP water also is supplied to parts of Monterey County.

7.13.4 ASSESSMENT METHODS

The impact assessment process was guided by the Visual Management System (VMS), developed by the USFS. This programmatic-level assessment describes impacts at a broad, regional level and focuses on known sensitive visual resources and landscapes. The analysis uses the following methods:

- Identify visually sensitive areas. Sensitivity was considered highest for views seen by people driving to or from recreational activities, or along routes designated as scenic corridors. Views from relatively moderate to high-use recreation areas also were considered sensitive.
- Consider the distance between the proposed actions or facilities and visually sensitive areas. Only impacts of those project actions that are 3 miles or less from identified visually sensitive areas were assessed. Generally, impacts occurring more than 3 miles away from visually sensitive areas are not readily seen or distinguishable at a level that would be considered sensitive. In some situations, however, depending on the facility and the location-specific topography, the visibility of a proposed facility or Program action might exceed a distance of 3 miles.
- Focus the assessment on components of the Program that could affect the visual environment. The impact analysis focused on the Ecosystem Restoration, Levee System Integrity, Storage, and Conveyance elements. Unless otherwise stated, the impact of other Program actions are assumed to be neutral or only slightly beneficial.

This programmatic-level assessment describes impacts at a broad, regional level and focuses on known sensitive visual resources and landscapes.

Variety classes are a key component of the VMS and are used to classify visual features into “distinctive” (Class A), “common” (Class B), and “minimal” (Class C) categories.

7.13.5 SIGNIFICANCE CRITERIA

Two significance criteria were used for this analysis. An impact on a visual resource was considered potentially significant if implementing a Program action would:

- Obstruct or permanently reduce visually important features that are in Variety Classes A and B, and can be viewed from visually sensitive areas.
- Result in long-term (that is, persisting for 5 years or more) adverse visual changes or contrasts to the existing landscape as viewed from areas with high visual sensitivity



within 3 miles. The analysis also considered how many viewing sites would be affected.

7.13.6 NO ACTION ALTERNATIVE

Changes and trends in land use and urban development could result in adverse impacts on visual resources under the No Action Alternative. Land now under cultivation or covered in natural vegetation could be urbanized. Most county and city general plans call for parks or green belts, which generally could be considered a beneficial impact associated with urbanization. The No Action Alternative also could result in adverse impacts on visual resources if Delta levees failed. Flooded agricultural land or habitat could be considered a potentially significant adverse visual impact.

Changes and trends in land use and urban development could result in adverse impacts on visual resources under the No Action Alternative.

Other projects listed in Attachment A could result in beneficial or adverse consequences to visual resources. Projects involving habitat restoration could cause beneficial effects, while projects involving construction of facilities generally would result in negative visual effects.

7.13.7 CONSEQUENCES: PROGRAM ELEMENTS COMMON TO ALL ALTERNATIVES

For visual resources, the environmental consequences of the Ecosystem Restoration, Water Quality, Levee System Integrity, Water Use Efficiency, Water Transfer, and Watershed Programs, and the Storage element are similar under all Program alternatives, as described below. The environmental consequences of the Conveyance element vary among Program alternatives, as discussed in Section 7.13.8.

7.13.7.1 DELTA REGION

Ecosystem Restoration Program

The visual impacts from the Ecosystem Restoration Program are considered beneficial because restored natural habitats generally are perceived as more scenically diverse and aesthetically pleasing than other land uses. The Ecosystem Restoration Program would convert land in the Delta Region from existing uses to habitat, ecosystem restoration, levee setbacks, and floodways. Most of this acreage is currently agricultural. Short-term visual impacts during construction could include views of bare ground as native or riparian habitat become established or views of dust generated from construction sites. Because these impacts are expected to last less than 5 years, they are not considered potentially significant.

The visual impacts from the Ecosystem Restoration Program are considered beneficial because restored natural habitats generally are perceived as more scenically diverse and aesthetically pleasing than other land uses.



The long-term effects of the Ecosystem Restoration Program would be beneficial, since the program would restore a more natural landscape in an area that is highly developed (Variety Class C). Some areas in the Delta Region could shift from Variety Class B to Variety Class A.

Water Quality and Watershed Programs

The Water Quality and Watershed Programs are not anticipated to cause any visual impacts in the Delta Region.

Levee System Integrity Program

The Levee System Integrity Program would involve levee rehabilitation and habitat creation in the Delta. This program could result in short-term impacts on visual quality during construction caused by vegetation removal, construction staging areas, and nighttime glare from construction lights. These effects are expected to diminish, however, when construction ends and as vegetation is reestablished on the levees. Because these visual effects are expected to last less than 5 years, the impacts are not considered potentially significant.

New levees and embankments could visually dominate the surrounding flat, open landscape and could permanently change the visual quality and character of the project area, resulting in a potentially significant unavoidable visual impact.

New levees and embankments could visually dominate the surrounding flat, open landscape and could permanently change the visual quality and character of the project area.

Water Use Efficiency Program

The Water Use Efficiency Program is not expected to result in any potentially significant visual impacts in the Delta Region. Changes could result from the kinds of plants and materials used in urban landscaping and in the kinds of agricultural crops planted; but these changes would involve substitutions, subtle changes, or beneficial changes to visual aspects that are not considered potentially significant. In some instances, water use efficiency improvements could result in some incidental losses in wetlands and riparian areas that used agricultural return flow, but the extent is expected to be minor.

Water Transfer Program

Overall, the Water Transfer Program would result in negligible visual effects. River flows or reservoir elevations could increase or decrease locally, but all such changes are expected to be within historical ranges observed in these water bodies during various water-year types. If land fallowing occurs from temporary water transfers, the changes could improve visual diversity, which some would consider a beneficial visual impact when



compared to a crop field. However, long-term or permanent fallowing may be considered by some as an adverse visual impact.

Storage

Any reservoirs built in the Delta Region would inundate areas primarily used for agriculture. Although water bodies generally are considered beneficial visual features, fluctuating water levels from reservoir drawdown and replenishment could cause adverse visual impacts. This "bathtub ring" effect occurs along the shoreline in areas that are alternately inundated and exposed. Vegetation such as emergent marsh grasses that can tolerate periodic flooding and drying may be useful for mitigation; however, the bathtub ring effect along the shoreline cannot always be mitigated through revegetation and screening. New levees and embankments could visually dominate the surrounding flat, open landscape and could permanently change the visual quality and character of the project area. These potentially significant adverse visual impacts could be unavoidable.

Although water bodies generally are considered beneficial visual features, fluctuating water levels from reservoir drawdown and replenishment could cause adverse visual impacts.

Facility construction could create temporary adverse visual impacts, particularly from haul routes, night construction lighting, and construction staging areas. Nearby views of project features under construction could impose temporary visual impacts caused by heavy equipment generating dust and disturbing established topography and vegetation. Proposed construction activities could be particularly noticeable and cause an adverse visual impact for nearby residences at Discovery Bay; recreationists from the Discovery Bay Marina; and motorists on SR 4, a county-designated scenic route. Most of the construction areas for any storage facilities eventually would be inundated; therefore, this impact would be short term but nevertheless is considered potentially significant.

7.13.7.2 BAY REGION

Ecosystem Restoration and Levee System Integrity Programs

Ecosystem Restoration and Levee System Integrity actions in the Bay Region, including Suisun Marsh, could result in similar beneficial and adverse visual impacts as those described for the Delta Region. The visual effects of Suisun Marsh levee modifications would be short term; revegetation could begin almost immediately after the levee modifications are completed.

Watershed Program

Watershed Program activities in the Bay Region, such as vegetation and habitat restoration, channel improvements, and erosion control efforts, could result in long-term beneficial visual effects by improving the natural landscape character of rivers and streams in the upper and lower watershed areas. Some short-term construction impacts would occur but are not considered potentially significant.

Watershed Program activities in the Bay Region could result in long-term beneficial visual effects by improving the natural landscape character of rivers and streams in the upper and lower watershed areas.



Water Quality, Water Use Efficiency, and Water Transfer Programs, and Storage

None of these Program elements would result in beneficial or adverse impacts on visual resources in the Bay Region.

7.13.7.3 SACRAMENTO RIVER AND SAN JOAQUIN RIVER REGIONS

Ecosystem Restoration Program

Ecosystem restoration actions on the whole would result in beneficial visual impacts in the Sacramento River and San Joaquin River Regions since restoration actions would add visual variety to the landscape and possibly could result in an upgrade of variety class. Some actions could result in adverse impacts, such as fencing creeks to protect riparian vegetation. These impacts could be considered potentially significant if they persisted for 5 years or more and occurred in visually sensitive recreation areas.

Ecosystem restoration actions could cause impacts in visually sensitive areas, such as creating borrow pits for gravel replacement and installing fish screens in areas with high visual sensitivity. Because these impacts could be mitigated through revegetation programs and would last less than 5 years, they are considered less than significant.

Ecosystem restoration actions on the whole would result in beneficial visual impacts in the Sacramento River and San Joaquin River Regions.

Water Quality, Water Use Efficiency, and Water Transfer Programs

The effects of these programs in the Sacramento River and San Joaquin River Regions would be similar to those described for the Delta Region. Additionally, if land is fallowed as a result of water transfers, the changes could be similar to those outlined under "Water Transfer Program" for the Delta Region.

Levee System Integrity Program

The Levee System Integrity Program would not affect visual resources in the Sacramento River and San Joaquin River Regions.

Watershed Program

Watershed Program activities, such as vegetation and habitat restoration, channel improvements, and erosion control efforts, could result in long-term beneficial visual

Watershed Program activities, such as vegetation and habitat restoration, channel improvements, and erosion control efforts, could result in long-term beneficial visual effects in the Sacramento River and San Joaquin River Regions.



effects in the Sacramento River and San Joaquin River Regions. These types of activities could improve the natural landscape character of rivers and streams in the upper and lower watershed areas. Some short-term construction impacts would occur but are considered less than significant.

Altered timber harvesting practices, depending on the methods used, could result in beneficial or adverse visual effects in watersheds. Over the long term, maintaining or enhancing forested areas would preserve the natural landscape and result in a beneficial impact on visual resources. Reduced grazing in some areas could increase the amount of vegetative cover, which in turn could restore the more natural landscape character to grazed areas.

Storage

Short-term adverse impacts on visual quality associated with construction of water storage facilities could include construction grading and removing existing vegetation and habitat. Mitigation is available to lessen the severity of these impacts. Potentially significant long-term adverse visual impacts associated with proposed water storage facilities could include the presence of constructed linear and obtrusive features (such as dams and spillways); view obstructions; and fluctuating water levels, creating a bathtub ring effect. These potentially significant long-term impacts on visual resources may be unavoidable.

Previously dry land could be inundated or existing reservoir levels could be increased, causing inundation of new areas around the pre-existing shoreline. Unlike a natural lake, proposed reservoirs would lack naturally evolved shoreline vegetation and trees; it is likely that constructed reservoirs could become a prominent feature in the landscape. Fluctuating water levels due to reservoir filling, drawdown, and replenishment could create or increase the extent of an adverse bathtub ring effect along the shorelines. This effect cannot be mitigated effectively through revegetation or screening.

Proposed construction activities for additional storage facilities could result in temporary adverse visual impacts. Descriptions of potential visual impacts are given for the Sites/Colusa, Thomes-Newville, and Montgomery Reservoirs as examples of potential impacts on reservoirs.

Sites/Colusa Reservoir. Construction associated with the Sites/Colusa Reservoir Project could be particularly noticeable and cause a temporary adverse visual impact on nearby residents or motorists on Sites-Lodoga Road, proposed by the county for designation as a scenic route. However, most of the construction area could be screened from public view by intervening topography along Logan Ridge and other adjacent ridgelines. Conveyance facilities associated with the Sites/Colusa Reservoir (such as the Tehama-Colusa Canal Enlargement, Tehama-Colusa Canal Extension, and Chico Landing Intertie) also could result in temporary adverse visual impacts on any nearby residences within one-quarter mile of the construction right-of-way.

Proposed reservoirs would lack naturally evolved shoreline vegetation and trees; it is likely that constructed reservoirs could become a prominent feature in the landscape.

Proposed construction activities for additional storage facilities could result in temporary adverse visual impacts.



Thomes-Newville Reservoir. The proposed Thomes-Newville Reservoir could be situated within three ridgelines that would naturally screen construction activities from the west, north, and east, including nearby residents in the community of Paskenta and recreationists at Black Butte Lake. Constructing the conveyance canals and pumping-generating plants would cause short-term visual impacts that could be more noticeable in the flatter elevations of the project area near I-5.

Montgomery Reservoir. Potential construction activities at the Montgomery Reservoir could be particularly noticeable and cause a temporary adverse visual impact on residences in the nearby community of Snelling. The proposed main dam at Montgomery Reservoir could be visually disruptive, detracting from the natural landscape for nearby residents as well as for new recreation users in the area.

Because of the surrounding topography, visibility of reservoirs at these north-of-Delta storage facilities would be localized to within one-quarter mile of the sites. The project areas currently experience minimal use; however, by introducing potential new recreation users at the reservoirs, the visual changes created by the proposed projects could be considered a potentially significant and unavoidable adverse visual impact.

7.13.7.4 OTHER SWP AND CVP SERVICE AREAS

All Programs

No direct or construction-related visual impacts would occur in the Other SWP and CVP Service Areas from any Program action.

No direct or construction-related visual impacts would occur in the Other SWP and CVP Service Areas from any Program action.

7.13.8 CONSEQUENCES: PROGRAM ELEMENTS THAT DIFFER AMONG ALTERNATIVES

For visual resources, the Conveyance element results in environmental consequences that differ among the alternatives, as described below. This section includes a description of the consequences of a pilot diversion project as part of the Preferred Program Alternative. If the pilot project is not built, these consequences would not be associated with the Preferred Program Alternative.

Under all alternatives, flow control barriers in the south Delta are expected to be visually obtrusive to boaters using the Delta waterways. When operational, these barriers also could impede boater access to scenic areas.

7.13.8.1 ALL ALTERNATIVES

Under all alternatives, flow control barriers in the south Delta are expected to be visually obtrusive to boaters using the Delta waterways (especially those originating from Discovery Bay Marina). Viewers from Old and Middle Rivers would be directly affected.



When operational, these barriers also could impede boater access to scenic areas. All new intake structures would include fish screens and would be visible from various locations in the Delta. These potentially significant impacts are unavoidable.

Introduction of facilities that are associated with Alternative 2 and the Preferred Program Alternative, into visually sensitive areas could result in potentially significant unavoidable adverse impacts.

The isolated facility of Alternative 3 would extend around the Delta periphery, and visual impacts could occur at all significant slough and river crossing sites (such as the Mokelumne River, east side streams, Disappointment Slough, the San Joaquin River, Middle River, Victoria Canal, and Old River). Greater visual impacts could occur on Delta waterways under low-outflow conditions if the isolated facility was used to divert more flow, resulting in lower net outflows. These features of Alternative 3 could result in potentially significant and unavoidable adverse impacts.

The isolated conveyance facility would extend around the Delta periphery; visual impacts could occur at all significant slough and river crossing sites.

7.13.9 PROGRAM ALTERNATIVES COMPARED TO EXISTING CONDITIONS

This section presents the comparison of the Preferred Program Alternative and Alternatives 1, 2, and 3 to existing conditions. The programmatic analysis found that the potentially beneficial and adverse impacts from implementing any of the Program alternatives when compared to existing conditions were the same impacts as those identified in Sections 7.13.7 and 7.13.8, which compare the Program alternatives to the No Action Alternative.

The analysis indicates beneficial and adverse effects on visual resources when the Program alternatives are compared to existing conditions. The benefits to visual resources would be improvements to visual quality resulting from implementation of the Ecosystem Restoration and Watershed Programs under each of the alternatives compared to existing conditions. Adverse impacts on visual quality would result from Storage and Watershed Program and Conveyance element actions under each of the alternatives compared to existing conditions.

At the programmatic level, the comparison of Program alternatives to existing conditions did not identify any additional potentially significant impacts than were identified in the comparison of Program alternatives to the No Action Alternative.

The following potentially significant impacts on visual resources are associated with the Preferred Program Alternative:

- Visual impacts from construction activities, such as vegetation removal, construction staging areas, night-time glare from construction lights, haul routes, and dust creation.

Comparing Program actions to existing conditions reveals the same impacts as when comparing Program actions to the No Action Alternative.



- **Presence of constructed linear and obtrusive features (such as dams and spillways), view obstructions, and a bathtub ring effect caused by fluctuating water levels from drawdown and replenishment of storage reservoirs.**
- **Introduction of new levees and embankments that could visually dominate the surrounding flat, open landscape.**
- **Introduction of new facilities that may obstruct or disrupt visual resources.**
- Impacts in visually sensitive areas from restoration actions, such as creating borrow pits for gravel replacement and installing fish screens in areas of high visual sensitivity.
- Degraded views in watersheds from such actions as altered timber harvesting practices.
- Creation of borrow pits or spoils material disposal sites associated with storage, conveyance, and levee projects.
- **Long-term visual impacts from construction activities extending more than 5 years.**

Bold indicates a potentially significant unavoidable impact.

7.13.10 ADDITIONAL IMPACT ANALYSIS

Cumulative Impacts. For a summary comparison of cumulative impacts for all resource categories, please refer to Chapter 3. For a description of the projects and programs considered in this cumulative impact analysis, please see Attachment A.

Beneficial impacts of the Program combined with benefits associated with projects that include restoring habitats could result in a cumulative beneficial effect in the Delta, Sacramento River, and San Joaquin River Regions. Most adverse visual impacts, whether short term or long term, are related to construction of permanent facilities, such as dams, water diversions, pipelines, or fish screens. Urbanization may adversely affect visual resources by converting natural or agricultural visual environments to urbanized settings. The visual effects of the projects analyzed, combined with those of the Program, would result in both beneficial and adverse effects similar to those described for the Preferred Program Alternative. Specific actions and projects under the Program could be coordinated with present and proposed projects, thereby reducing the extent of the cumulative visual impacts. Mitigation measures presented under "Mitigation Strategies" are available to avoid or lessen many of the adverse visual effects. At the programmatic level of analysis, the cumulative impact on visual resources of the Program combined with reasonable foreseeable future actions are considered less than significant.

Program restoration actions could combine with other restoration projects to result in a cumulative beneficial effect in the Delta, Sacramento River, and San Joaquin River Regions.



Since the Program would not affect visual resources in the Other SWP and CVP Service Areas, cumulative impacts on visual resources are not anticipated in this region.

Growth-Inducing Impacts. Growth could be induced by beneficial impacts on visual resources associated with the Preferred Program Alternative. These could include economic or population growth, or the construction of new housing caused by the visual enhancement of areas due to Ecosystem Restoration Program activities or new storage reservoirs. The degree of growth-inducing impact would depend on the locations of these activities and other factors that also depend on location. The significance of the growth-inducing impact cannot be determined at the programmatic level of analysis.

If improvements in water supply are caused by the Preferred Program Alternative, the Preferred Program Alternative could induce growth, depending on how the additional water supply was used. If the additional water was used to expand agricultural production or urban housing development, the proposed action would foster economic and population growth. Expansion of agricultural production and population could affect visual resources, but the significance of the visual resources impact would depend on where the agricultural or population growth occurred and how it was managed.

Short- and Long-Term Relationships. Generally, the Preferred Program Alternative would maintain and enhance visual resources. Improved visual settings would result from Ecosystem Restoration and Watershed Program actions, and generally would outweigh the short-term adverse visual impacts associated with these programs.

Most short-term impacts would be construction related and would cease when construction is complete. Where possible, avoidance and mitigation measures would be implemented as a standard course of action to lessen impacts on visual resources.

Potentially significant long-term unavoidable impacts include bathtub ring effects on reservoir shorelines, the presence of constructed linear and obtrusive features, and view obstructions.

Irreversible and Irretrievable Commitments. Features of the Levee System Integrity Program and the Storage and Conveyance elements can be considered to cause potentially significant irreversible changes in visual resources. Avoidance and mitigation measures can be implemented to lessen adverse visual effects, but changes would be experienced by future generations. The long-term beneficial irreversible changes include improvements to visual settings caused by Ecosystem Restoration and Watershed Program actions. Long-term adverse irreversible changes include such impacts as bathtub ring effects along shorelines in reservoirs caused by fluctuating water levels from drawdown and replenishment, the presence of constructed linear and obtrusive features, and view obstructions.

Features of the Levee System Integrity Program and the Storage and Conveyance elements can be considered to cause potentially significant irreversible changes in visual resources.



7.13.11 MITIGATION STRATEGIES

These mitigation strategies will be considered during specific project planning and development. Specific mitigation measures will be adopted, consistent with the Program goals and objectives, and the purposes of site-specific projects. Not all mitigation strategies will be applicable to all projects, because site-specific projects will vary in purpose, location, and timing.

Mitigation strategies involve impact avoidance, impact reduction, site restoration and design, and impact compensation measures. The following strategies could be used to avoid potentially significant adverse visual impacts:

- Timing changes in flow regimes to minimize bathtub ring effects during times of peak recreation use.
- Minimizing construction activities during the peak-use recreation season.
- Avoiding unnecessary ground disturbance outside the necessary construction area.

The following mitigation strategies could be used to reduce the severity of potentially significant impacts:

- Watering areas where dust is generated, where feasible, particularly along unpaved haul routes and during earth-moving activities, to reduce visual impacts caused by dust.
- Locating and directing exterior lighting for construction activities so that it is concealed to the extent practicable when viewed from local roads, nearby communities, and any recreation areas.
- Siting the proposed reservoir(s), if possible, to minimize required cut-and-fill and locating the reservoir on the flattest topographic section of the site to minimize its visibility.
- Constructing facilities such as pumping-generating plants with earth-tone building materials.
- Revegetating disturbed areas as soon as possible after construction.
- Locating visually obtrusive features, such as borrow pits and dredged material disposal sites, outside visually sensitive areas and observation sites.
- Selecting vegetation type, placement, and density to be compatible with patterns of existing vegetation where revegetation occurs in natural areas.



- Installing landscape screening, such as grouped planting of trees and tall shrubs, to screen proposed facilities, such as pumping-generating plants, from nearby sensitive viewers, such as motorists and residents.
- Using native trees, bushes, shrubs, and groundcover for landscaping, when appropriate to the visual setting, at facilities such as dams and pumping-generating plants, and along new and expanded canals and conveyance channels, in a manner that does not compromise facility safety and access.

The following mitigation strategies could be used to compensate for visual impacts:

- Creating viewing opportunities of outstanding features (such as Mount Diablo and the Vaca Mountains) through selective vegetation reduction or constructing roadside viewing areas.
- Recontouring and adding vegetation to areas rated as “poor” in variety class.

7.13.12 POTENTIALLY SIGNIFICANT UNAVOIDABLE IMPACTS

Potentially significant adverse impacts that cannot be avoided are primarily those associated with Program facilities, since facilities are often difficult or impossible to harmonize with the natural environment. Construction impacts that would persist more than 5 years are considered potentially significant unavoidable impacts. Some facilities, such as reservoirs and conveyance channels, would require more than 5 years of construction and therefore could result in potentially significant unavoidable impacts. Visual impacts from fluctuating water levels in storage reservoirs also are considered potentially significant unavoidable adverse impacts.

Visual impacts from fluctuating water levels in storage reservoirs are considered potentially significant unavoidable adverse impacts.

