Chapter 17
Aesthetics and Visual Resources

17.3 Environmental Consequences

17.3.1 Methods for Analysis

17.3.1.1 Site Inventory and Selection of Key Observation Points

To identify the potential effects of alternatives on Existing Conditions of the visual environment, key observation points (KOPs) where features could have visual effects were selected. The KOPs selected were determined to be most representative of the alternatives' potential effects based on the potential to change views available to sensitive receptors and from sensitive viewing areas.

KOPs are derived and selected from candidate KOPs (cKOPs). To determine cKOPs, first a 2-mile radius of the project sites were evaluated, which is the area that is considered to encompass discernible elements from the project alternatives that would be visible in the landscape. At distances of greater than 2 miles, the mass and visibility of the project elements would be reduced to be a less substantial portion of the total landscape.

Within this 2-mile radius, locations were then evaluated for their potential to have views of the project sites using Google Maps, overlain with engineering layers for each alternative, and Google Street View. These locations were evaluated for its landform, vegetation, water, and artificial features. After this, cKOPs were chosen for the purposes of surveying the project sites and surrounding area. The following criteria were used to select the cKOPs.

Include at least one of a representative range of visible project features, including, for example, canals, intakes, pumping plants, bridges, access roads, and embankments, along with all other visible project features such as soil and borrow and reusable tunnel material (RTM) areas.

Include locations where project features would be visually obtrusive, including undeveloped areas that possess at least moderate scenic values.

Include areas that would be particularly sensitive to changes in the visual landscape, including officially designated scenic areas, publicly accessible areas where viewers spend extended periods, and areas that are at least moderately traveled by the public or are especially sensitive to new sources of light and glare.

Include the potential for indirect impacts from project elements such as soil and borrow areas, RTM areas, or dredging locations.

In the field, these cKOP locations were visited and photographed to document the presence or absence of views of the sites. Additional locations were also surveyed and photo-documented by driving the roads surrounding the project alternatives and capturing the most descriptive views down the roadway corridors and toward the project alternatives at intersections or where a safe road pull-out was present along longer or winding roadways with direct views toward the sites.

These were often documented in a 360° view to gain an understanding of available views from the perspective of both motorists and residents and to understand the visual setting.

Images from the cKOPs were photographed using a >10 megapixel digital single lens reflex camera equipped with a 50-millimeter equivalent focal length lens. This configuration is the de facto standard that approximates the average view cone and magnification of the human an eye. The camera positioning was determined with a sub-meter differentially corrected GPS.

Two hundred and fifty-five (255) cKOPs were photographed within the study area during an initial site visit on January 9–11, 2012. A list of the cKOPs and their latitudinal and longitudinal locations are included in Appendix 17A. The cKOP point locations were brought into GIS, a Google KML file was created, and then the cKOP locations were imported into Google Earth. Once in Google Earth, the cKOPs and associated photos were used as a tool, in correlation with the engineering data overlay for each alternative, to evaluate project effects based on their spatial relationship/proximity to the project sites.

Each cKOP was evaluated for its proximity/distance to the project, scenic quality, viewer concern levels, duration of the view, intactness, and number of viewers. This evaluation was completed using a matrix, also included Appendix 17A, that quantifies these qualities from the perspective of viewers at each cKOP toward the project area. These values are based on a 1 to 5 ascending scale, as defined by the *Candidate KOP Sensitivity Matrix Rating Scales* in Appendix 17A. The highest possible sensitivity would be a score of 30 and the lowest possible sensitivity would be a score of 0. Sensitivity in the ~~project~~ Plan Area ranges from 27 as the highest sensitivity and 12 as the lowest sensitivity. cKOPs were selected and designated as KOPs to be used as the basis to describe the effects of the various features of the BDCP alternatives within this analysis because they were determined to be the most representative sampling of the proposed project's potential effects on the viewshed across all of the spectrum of sensitivity ranges. The KOPs are identified by their previous cKOP designations~~,~~. 72 KOPs were selected for representative photographs. KOPs were re-photographed on July 29~~–~~-30, 2013, to show the same view but in the summer. One new KOP was added to accommodate the revised Alternative 4 so that the total number of KOPs was increased to 73. All KOPs are shown in Figure 17-1, *Key Observation Point and Photosimulation Locations*. Photographs taken from these representative KOPs showing winter and summer views are presented in Figures 17-2 through 17-~~73~~75. Note that KOP 258 does not have a winter view because Alternative 4 was modified after January 2012. It should also be noted that, while Figures 17-2 through 17-75 typically show only one or two views from any given KOP, each KOP in fact represents an effective 360° field of view, as described above. Consequently, KOPs may be referenced in the discussions of BDCP alternatives that are not mentioned in the figure captions, because the particular view depicted in the figure does not reflect the location of alternative-specific features.)~~Also, the alternatives' impact analysis refers to cKOPs mapped on Figure 17D-1 (see Appendix 17D) and KOPs mapped on Figure 17-1 that are shown in Figures 17-2 through 17-75. The photo captions in Figures 17-2 through 17-75 indicate the alternatives for which a particular photo is looking toward. However, most cKOPs/KOPs were documented in a 360° view, as described above. Where a KOP is referenced in an altnernative impact discussion but the photo caption shown in Figures 17-2 through 17-75 ties the KOP to a different alternative, the reader should keep in mind that views from any one KOP are not fixed and other views to surrounding areas are available from any one KOP.~~

An important consideration in KOP selection was that visual impacts are generally based on public views (i.e., views from public roads, trails, towns, or bridges rather than from individual residences),

as described above. However, views from individual private properties are also considered in evaluating overall change to the visual character of an area. In addition, another consideration is that late fall through early spring views generally possess the greatest potential for visual impact because many trees and shrubs are dormant and without leaves that act to partially or fully screen project features in the landscape during the late spring to early fall. Vegetation's ability to screen features is dependent upon viewer location in relation to the structure and intervening vegetation and distance from both (i.e., an intake will appear smaller if the viewer is farther away or larger if the viewer is closer to the structure).

17.3.1.2 Preparation of Visual Simulations

Computer-generated visual simulations were produced using digitized photographs and computer modeling and rendering techniques to document and evaluate the visual changes that would result from implementation of the action alternatives. The simulations illustrate specific project elements from eleven locations. Simulation vantage points were selected to provide representative public views from which specific project elements would be most visible, and 13 KOPs, mapped on Figure 17-1, were selected for simulating project features. Note that one KOP was simulated to show the change from January 2012 and July 2013 conditions and another KOP was simulated to show views in different directions toward different project features. Simulations are shown in Figures 17-76 through 17-~~89~~90. These KOPs are also referenced in the text to help illustrate existing conditions. As with regular KOPs, existing views for simulated KOPs also represent an effective 360° field of view, as described above, and existing views for simulated KOPs may be referenced in the discussions of BDCP alternatives that are not mentioned in the figure captions. Elements chosen for simulation were intakes on the Sacramento River; the intermediate forebay from SR 160; a tunnel shaft site from Isleton Road, the fish screen at Walnut Grove and Locke; canals that would be visible from I-5 near the Lambert Road overpass, SR 4 near Discovery Bay, SR 4 near South Whiskey Slough Road, and SR 12 near Guard Road; and the redirection of Old River near the Clifton Court Forebay. These simulation locations and features represent visual effects across the alternatives, illustrate a representative sample of potential visual changes, and serve to help readers correlate how visual effects would translate to other site-specific locations that were not simulated.

The before and after visual simulations provide clear images of the location, scale, and visual appearance of alternative features. The simulations were developed through an objective analytical and computer modeling process and are accurate within the constraints of the available site and alternative data (three-dimensional computer model was created using a combination of AutoCAD files and geographic information system [GIS] layers and exported to Autodesk's 3-dimensional Studio Max for production). Design data—engineering drawings, elevations and cross sections, site and topographical contour plans, concept diagrams, and reference pictures—were used as a platform from which digital models were created. In cases where detailed design data were unavailable, more general descriptions about alternative facilities and their locations were used to prepare the digital models. Data and assumptions used in the simulations are provided in Appendix 17B, Photo Simulation Data Sources and Assumptions.

The simulations were prepared using available design data. Although the project elements will continue to undergo design refinement through final design stages, these refinements would not be expected to result in substantial differences in individual features that would affect the outcome of the visual effects analysis. The planning is far enough along and engineers have developed preliminary design of the water conveyance facilities and related structures to meet the operational criteria for the alternatives. Some of the factors incorporated into these considerations include

appropriate intake and pump capacities, foundation and housing facility dimensions, extent of levee modification and upgrades to prevent flooding of the intake facilities, conveyance pipe and canal dimensions, the amount of electricity needed to power the alternatives and the associated structures and placement of transmission lines, placement of temporary and permanent access roads, and estimates of landform modifications (cut-and-fill) to accommodate structures. Finally, the analysis assumes that any shifts in specific feature configurations or new alternative components would be minor. Therefore, the simulations are considered appropriate and representative of the type and extent of possible visual changes to the study area.

After the viewshed and sensitive receptors were established and visualization created, the visual impact assessment process, which identifies the existing scenic quality of the visual setting, was completed. For this analysis, an adaptation of the BLM's VRM visual resource inventory method was used because it allows the various landscape elements that make up scenic quality to be quantified and rated, with a minimum of ambiguity or subjectivity. BLM's VRM visual resource inventory assigns lands an A, B, or C rating based on the apparent scenic quality, determined by using seven key factors (landscape features): landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. The cKOP sensitivity matrix and the Scenic Quality evaluation form should not to be construed as interrelated from a quantification perspective. The sensitivity matrix uses visual quality as an evaluation criterion where the value is extrapolated from a regional overview perspective. The Scenic Quality evaluation however, uses additional criteria to evaluate place-based scenic quality; therefore the two values are independent of each other. These landscape features were evaluated by three reviewers (interdisciplinary team) and rated numerically on a comparative basis with similar features within the viewshed, and a total score of scenic quality was tabulated (see Appendix 17C). The three reviewers scores were averaged to determine the score used in the analysis.

A total of 32 points is possible according to the rating scheme. View scores are as follows.

- 29 to 32 points: A rating indicates a very high visual quality.
- 24 to 28 points: B rating indicates a high visual quality.
- 19 to 23 points: C rating indicates a moderately high visual quality.
- 14 to 18 points: D rating indicates a moderate visual quality.
- 9 to 13 points: E rating indicates a moderately low visual quality.
- 4 to 8 points: F rating indicates a low visual quality.
- 0 to 3 points: G rating indicates a very low visual quality.

The landscape was evaluated for its existing and simulated conditions. A reduction in the existing conditions to a lower Scenic Quality Rating constitutes an adverse effect.

17.3.3 Effects and Mitigation Approaches

17.3.3.2 Alternative 1A—Dual Conveyance with Pipeline/Tunnel and Intakes 1–5 (15,000 cfs; Operational Scenario A)

Impact AES-4: Creation of a New Source of Light or Glare That Would Adversely Affect Views in the Area as a Result of Construction and Operation of Conveyance Facilities

***NEPA Effects*:** The following NEPA effects would result from the introduction of new sources of daytime and nighttime glare and nighttime lighting.

Daytime and Nighttime Glare

BDCP conveyance facilities would result in new sources of glare if they were made of materials that easily reflect light. Intakes 1–5 and their associated pumping plants, surge towers, and facilities and the pumping plant at the intermediate forebay would create very noticeable effects relating to light and glare. This is illustrated in the simulations showing intake facilities in Figures 17-76 through 17-78, where light building colors over a large surface area would reflect off of those surfaces and increase glare, especially when combined with the removal of vegetation that absorbs light, provides shade, and screens glare. The amount of glare associated with surfaces would be increased if highly glossy paints or surface treatments or highly reflective materials are used, compared to satin or flat paints or surface treatments or materials that are less reflective. Sunlight would reflect off the new water surfaces of the forebay, creating new sources of glare where none presently exists. In addition, the use of nighttime lighting, described below, would result in nighttime glare of the lights reflecting off water surfaces. Because there are a large number of viewers in and around the waterways, intake structures, and forebay, effects associated with glare are considered adverse. Conversely, as vegetation and waterfowl become established following completion of the new forebays, some of these net visual impacts may be diminished.

Nighttime Lighting

***CEQA Conclusion*:** The impacts associated with light and glare under Alternative 1A are significant because there are a larger number of viewers in and around the waterways, intake structures, and intermediate forebay; BDCP facilities would increase the amount of nighttime lighting in the Delta above existing ambient light levels; and the study area currently experiences low levels of light because there are fewer light/glare producers than are typical in urban areas. Mitigation Measures AES-4a through AES-4c would help reduce these impacts by limiting construction to daylight hours within 0.25 mile of residents, minimizing fugitive light from portable sources used for construction, and installing visual barriers along access routes, where necessary, to prevent light spill from truck headlights toward residences; however, these mitigation measures would not reduce impacts to a less-than-significant level because even though mitigation measures would reduce some aspects of the impact, ~~it is not certain the mitigation would~~mitigation would not reduce the level of the impact to less than significant in all instances. In addition, the size of the study area and the nature of changes introduced by the new light and glare sources would result in permanent changes to the regional landscape such that there would be noticeable changes to the visual character that do not blend or are ~~not in keeping with the existing visual environment~~not in keeping with the existing visual environment based upon the viewer's location in the landscape relative to the seen change. Thus, the new sources of daytime and nighttime light and glare associated with Alternative 1A would result in significant and unavoidable impacts on public views in the project vicinity.

Impact AES-5: Substantial Alteration in Existing Visual Quality or Character during Operation

***NEPA Effects*:** Once in operation, visible maintenance activities on the intakes, tunnels, and forebays, and transmission lines would be required periodically. Intakes would require painting, cleaning, and repairs. ~~These activities could be visible from the water or land.~~ Forebays would be dredged to remove sediment at approximately 50-year intervals and embankments would receive vegetation removal and repairs. ~~These activities would be visible from the area surrounding the forebays.~~ Tunnels would require periodic inspection and would have vehicles parked near shaft sites while tunnels are accessed for inspection. Transmission lines would require periodic vegetation removal within the ROWs. These activities could be visible from the water or land by sensitive viewers in proximity to these features. The greatest visual effects resulting from operations would be maintenance of the intakes and dredging of the forebays. However, all activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; dredged forebays would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, ~~However, these temporary~~ maintenance activities are anticipated to occur within a short period of time and cease when complete, and effects on the existing visual quality and character during operation would not be adverse.

***CEQA Conclusion*:** Maintenance of the conveyance facilities (i.e., intakes, tunnels, forebays and transmission lines) would be required periodically and would involve painting, cleaning, and repair of structures; dredging at forebays (at approximately 50-year intervals); vegetation removal and care along embankments; tunnel inspection; and vegetation removal within transmission line ROWs. These activities could be visible from the water or land by sensitive viewers in proximity to these features. All activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; dredged forebays would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, maintenance activities are anticipated to occur within a short period of time and cease when complete. These visible maintenance activities would be temporary, intermittent, and short-term impacts on the existing visual quality and character of the affected areas during operation and would be considered less than significant. Maintenance and operation of Alternative 1A, once constructed, would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanently reduce visually important features. Thus, overall, Alternative 1A would have a less-than-significant impact on existing visual quality and character during maintenance and operation of the facilities in the study area. No mitigation is required.

17.3.3.3 Alternative 1B—Dual Conveyance with East Alignment and Intakes 1–5 (15,000 cfs; Operational Scenario A)

Impact AES-5: Substantial Alteration in Existing Visual Quality or Character during Operation

***NEPA Effects*:** As described under Alternative 1A, once the facility is in operation, visible regular and periodic maintenance would be required on all major structures. Activities such as painting, cleaning, vegetation maintenance (removal), repairs, and inspections would be visible from viewpoints on water and land. Operations under Alternative 1B would be very similar to those under Alternative 1A. Although under Alternative 1B there would not be an intermediate forebay, the canals and Byron Tract Forebay would require cleaning and dredging. These activities could be visible from the water or land by sensitive viewers in proximity to these features. The greatest visual effects resulting from operations would be maintenance of the intakes and cleaning of the canals. However, all activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the structures and cleaning the facilities and keeping transmission line ROWs cleared of vegetation; the dredged forebay and canals would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, ~~However, these temporary~~ maintenance activities are anticipated to occur within short periods of time and cease when complete, and effects on the existing visual quality and character during operation would not be adverse.

***CEQA Conclusion*:** Maintenance of the conveyance facilities (i.e., intakes, canals, forebay, transmission lines, and operable barrier) would be required periodically and would involve painting, cleaning, and repair of structures; dredging at the Byron Tract forebay, cleaning canals; vegetation removal and care along embankments; canal inspection; and vegetation removal within transmission line ROWs. These activities could be visible from the water or land by sensitive viewers in proximity to these features. However, all activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the structures and cleaning the facilities and keeping transmission line ROWs cleared of vegetation; the dredged forebay and canals would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, maintenance activities are anticipated to occur within a short period of time and cease when complete. These visible maintenance activities would be temporary, intermittent, and short-term impacts on the existing visual quality and character of the affected areas during operation and would be considered less than significant. Maintenance and operation of Alternative 1B, once constructed, would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanent reduce visually important features. Thus, overall, Alternative

1B would have a less-than-significant impact on existing visual quality and character during maintenance and operation of the facilities in the study area. No mitigation is required.

17.3.3.4 Alternative 1C—Dual Conveyance with West Alignment and Intakes W1–W5 (15,000 cfs; Operational Scenario A)

Impact AES-5: Substantial Alteration in Existing Visual Quality or Character during Operation

***NEPA Effects*:** Operations under Alternative 1C would be very similar to those under Alternatives 1A and 1B and once the facility is in operation, visible regular and periodic maintenance would be required on all major structures. Activities such as painting, cleaning, vegetation maintenance (removal), repairs, and inspections would be visible from viewpoints on water and land. Although under Alternative 1C there would not be an intermediate forebay (same as Alternative 1B), the canal and Byron Tract Forebay would require cleaning and dredging. These activities could be visible from the water or land by sensitive viewers in proximity to these features. The greatest visual effects resulting from operations would be maintenance of the intakes and cleaning the canals. All activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; dredged forebays would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, ~~However, these temporary~~ maintenance activities are anticipated to occur within short periods of time and cease when complete, and effects on the existing visual quality and character during operation would not be adverse.

***CEQA Conclusion*:** Maintenance of the conveyance facilities (i.e., intakes, canals, forebay, transmission lines, and operable barrier) would be required periodically and would involve painting, cleaning, and repair of structures; dredging at the Byron Tract forebay, cleaning canals; vegetation removal and care along embankments; canal inspection; and vegetation removal within transmission line ROWs. These activities could be visible from the water or land by sensitive viewers in proximity to these features. All activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; dredged forebays would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, maintenance activities are anticipated to occur within a short period of time and cease when complete. These visible maintenance activities would be temporary, intermittent, and short-term impacts on the existing visual quality and character of the affected areas during operation and would be considered less than significant. Maintenance and operation of Alternative 1C, once constructed, would not

result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanently reduce visually important features. Thus, overall, Alternative 1C would have a less-than-significant impact on existing visual quality and character during maintenance and operation of the facilities in the study area. No mitigation is required.

17.3.3.5 Alternative 2A—Dual Conveyance with Pipeline/Tunnel and Five Intakes (15,000 CFS; Operational Scenario B)

Impact AES-5: Substantial Alteration in Existing Visual Quality or Character during Operation

***NEPA Effects*:** Effects on the visual environment through operations and maintenance of the water conveyance facilities (CM1) under this alternative would be similar to those described for Alternative 1A, Impact AES-5. Once the facility is in operation, visible regular and periodic maintenance would be required on all major structures, including the operable barrier at the head of Old River. Activities such as painting, cleaning, vegetation maintenance (removal), repairs, and inspections would be visible from viewpoints on water and land. If Intakes 6 and 7 are constructed, activities at these sites would result in the same effects as Intakes 4 and 5, only farther south. The greatest visual effects resulting from operations would be maintenance of the intakes and dredging the forebays. The operable barrier would also require periodic dredging. These activities could be visible from the water or land by sensitive viewers in proximity to these features. However, all activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; dredged forebays would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, ~~However, these temporary~~ maintenance activities are anticipated to occur within a short period of time and cease when complete, and effects on the existing visual quality and character during operation would not be adverse because the activities would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanently reduce visually important features.

***CEQA Conclusion*:** Maintenance of the conveyance facilities (i.e., intakes, tunnels, forebays and transmission lines) would be required periodically and would involve painting, cleaning, and repair of structures; dredging at forebays (at approximately 50-year intervals); vegetation removal and care along embankments; tunnel inspection; and vegetation removal within transmission line ROWs. These activities could be visible from the water or land by sensitive viewers in proximity to these features. All activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; dredged forebays would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with

agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, maintenance activities are anticipated to occur within a short period of time and cease when complete. These visible maintenance activities would be temporary, intermittent, and short-term impacts on the existing visual quality and character of the affected areas during operation and would be considered less than significant. Maintenance and operation of Alternative 2A once constructed, would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanently reduce visually important features. Thus, overall, Alternative 2A would have a less-than-significant impact on existing visual quality and character during maintenance and operation of the facilities in the study area. No mitigation is required.

17.3.3.6 Alternative 2B—Dual Conveyance with East Alignment and Five Intakes (15,000 cfs; Operational Scenario B)

Impact AES-5: Substantial Alteration in Existing Visual Quality or Character during Operation

***NEPA Effects*:** Effects on the visual environment through operations and maintenance of the water conveyance facilities (CM1) under this alternative would be similar to those described for Alternative 1A and 1B, Impact AES-5. Once the facility is in operation, visible regular and periodic maintenance would be required on all major structures, including the operable barrier at the head of Old River. Activities such as painting, cleaning, vegetation maintenance (removal), repairs, and inspections would be visible from viewpoints on water and land. If Intakes 6 and 7 are constructed, activities at these sites would result in the same effects as Intakes 4 and 5, only farther south. Although under Alternative 2B there would not be an intermediate forebay, the canal, operable barrier on the head of Old River, and Byron Tract Forebay would require cleaning and periodic dredging. The greatest visual effects resulting from operations would be maintenance on the intakes and cleaning the canals. However, all activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; the dredged forebay and canals would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, ~~However, these temporary~~ maintenance activities are anticipated to occur within short periods of time and cease when complete, and effects on the existing visual quality and character during operation would not be adverse because the activities would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanently reduce visually important features.

***CEQA Conclusion*:** Maintenance of the conveyance facilities (i.e., intakes, canals, forebay, transmission lines, and operable barrier) would be required periodically and would involve painting, cleaning, and repair of structures; dredging at the Byron Tract Forebay and operable barrier, cleaning canals; vegetation removal and care along embankments; canal inspection; and vegetation removal within transmission line ROWs. These activities could be visible from the water

or land by sensitive viewers in proximity to these features. All activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; the dredged forebay and canals would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, maintenance activities are anticipated to occur within a short period of time and cease when complete. These visible maintenance activities would be temporary, intermittent, and short-term impacts on the existing visual quality and character of the affected areas during operation and would be considered less than significant. Maintenance and operation of Alternative 2B, once constructed, would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanent reduce visually important features. Thus, overall, Alternative 2B would have a less-than-significant impact on existing visual quality and character during maintenance and operation of the facilities in the study area. No mitigation is required.

17.3.3.7 Alternative 2C—Dual Conveyance with West Alignment and Intakes W1–W5 (15,000 cfs; Operational Scenario B)

Impact AES-5: Substantial Alteration in Existing Visual Quality or Character during Operation

***NEPA Effects*:** Effects on the visual environment through operations and maintenance of the water conveyance facilities (CM1) under this alternative would be similar to those described for Alternatives 1A and 1C, Impact AES-5. Once the facility is in operation, visible regular and periodic maintenance would be required on all major structures, including the operable barrier at the head of Old River. Activities such as painting, cleaning, vegetation maintenance (removal), repairs, and inspections would be visible from viewpoints on water and land. Although under Alternative 2C there would not be an intermediate forebay, the canal, operable barrier on the head of Old River, and Byron Tract Forebay would require cleaning and periodic dredging. The greatest visual effects resulting from operations would be maintenance on the intakes and cleaning the canals. However, all activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; the dredged forebay and canals would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, ~~However, these temporary~~ maintenance activities are anticipated to occur within short periods of time and cease when complete, and effects on the existing visual quality and character during operation would not be adverse because the activities would not result in further substantial changes to the existing natural viewshed or terrain, alter

existing visual quality of the region or eliminate visual resources, or obstruct or permanently reduce visually important features.

***CEQA Conclusion*:** Maintenance of the conveyance facilities (i.e., intakes, canals, forebay, transmission lines, and operable barrier) would be required periodically and would involve painting, cleaning, and repair of structures; dredging at the Byron Tract Forebay and operable barrier, cleaning canals; vegetation removal and care along embankments; canal inspection; and vegetation removal within transmission line ROWs. These activities could be visible from the water or land by sensitive viewers in proximity to these features. All activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; the dredged forebay and canals would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, maintenance activities are anticipated to occur within a short period of time and cease when complete. These visible maintenance activities would be temporary, intermittent, and short-term impacts on the existing visual quality and character of the affected areas during operation and would be considered less than significant. Maintenance and operation of Alternative 2C, once constructed, would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanent reduce visually important features. Thus, overall, Alternative 2C would have a less-than-significant impact on existing visual quality and character during maintenance and operation of the facilities in the study area. No mitigation is required.

17.3.3.8 Alternative 3—Dual Conveyance with Pipeline/Tunnel and Intakes 1 and 2 (6,000 cfs; Operational Scenario A)

Impact AES-5: Substantial Alteration in Existing Visual Quality or Character during Operation

***NEPA Effects*:** Effects on the visual environment through operations and maintenance of the water conveyance facilities (CM1) under this alternative would be similar to those described for Alternative 1A, Impact AES-5. Once the facility is in operation, visible regular and periodic maintenance would be required on all major structures. Activities such as painting, cleaning, vegetation maintenance (removal), repairs, and inspections would be visible from viewpoints on water and land. The greatest visual effects resulting from operations would be maintenance of the intakes and dredging the forebays. However, under Alternative 3, the severity of these effects in the vicinity of the north Delta intakes relative to Alternative 1A would be decreased because there would only be two intake structures instead of five. However, all activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; dredged forebays would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment

to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, ~~Because temporary~~ maintenance activities are anticipated to occur within a short period of time and cease when complete, these effects on the existing visual quality and character during operation would not be adverse because the activities would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanently reduce visually important features.

***CEQA Conclusion*:** Maintenance of the conveyance facilities (i.e., intakes, tunnels, forebays and transmission lines) would be required periodically and would involve painting, cleaning, and repair of structures; dredging at forebays (at approximately 50-year intervals); vegetation removal and care along embankments; tunnel inspection; and vegetation removal within transmission line ROWs. These activities could be visible from the water or land by sensitive viewers in proximity to these features. All activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; dredged forebays would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, maintenance activities are anticipated to occur within a short period of time and cease when complete. These visible maintenance activities would be temporary, intermittent, and short-term impacts on the existing visual quality and character of the affected areas during operation and would be considered less than significant. Maintenance and operation of Alternative 3 once constructed, would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanently reduce visually important features. Thus, overall, Alternative 3 would have a less-than-significant impact on existing visual quality and character during maintenance and operation of the facilities in the study area. No mitigation is required.

17.3.3.9 Alternative 4—Dual Conveyance with Modified Pipeline/Tunnel and Intakes 2, 3, and 5 (9,000 cfs; Operational Scenario H)

The BDCP-related permanent effects of the proposed project, Alternative 4, ~~would be similar to those~~are presented in Table 17D-~~1~~ 4 in Appendix 17D, *Permanent Impacts after Construction is Complete~~, for Alternative 1A~~*. Appendix 17D describes existing visual characteristics and the BDCP-related permanent effects on visual quality and character, scenic vistas, scenic roadways, and from light and glare sources after construction is complete and identifies the overall effect on viewers. Appendix E, *Permanent Features*, identifies the viewer groups and viewing locations that would be affected by permanent alternative features. Alternative 4 includes a modified pipeline/tunnel conveyance alignment from Intakes 2, 3, and 5 on the Sacramento River between Clarksburg and Walnut Grove to the expanded Clifton Court Forebay, associated shaft sites, an intermediate forebay and control structure, access roads, transmission lines, pumping plants at Clifton Court Forebay, barge unloading facility sites, an operable barrier at the ~~head~~ Head of Old River, and spoil/borrow and RTM areas. Construction of all structural components under Alternative 4 would take 9 years.

However, construction of each individual facility would be phased within that period and would take place over a shorter period. The estimated construction times for individual features are included in the discussion of impacts below. The duration and schedule for construction of the water conveyance facilities (CM1) is provided in Appendix 3C, *Construction Assumptions for Water Conveyance Facilities*. In addition, Appendix 22A details the construction schedules and defines the length and sequence of each construction phase.

Impact AES-1: Substantial Alteration in Existing Visual Quality or Character during Construction of Conveyance Facilities

Construction of conveyance facilities under Alternative 4 would result in substantial alteration of the existing visual quality or character in the vicinity of project elements that can be viewed from local sensitive receptors and public viewing areas. Visual quality effects at Alternative 4 project element construction sites would take place beginning with construction mobilization through completion of project elements. Once construction mobilization under the alternative occurs, all viewer groups would begin to see visual changes to the portions of the study area where project features would be built.

Intakes

The Sacramento River channel and bank would be affected by construction of three north Delta intake facilities (Intakes 2, 3, and 5) between RM 41 and RM 37 (Figure 3-9 and Mapbook Figure M3-4). Construction of each intake would take approximately 4 years to complete and would occur primarily Monday through Friday for up to 24 hours per day. In addition, because of the relatively high groundwater level at all intake locations ~~and pumping plant sites~~, dewatering would be necessary to provide a dry workspace. Dewatering would also be needed where intake pipelines cross waterways and major irrigation canals east of the Sacramento River. Conveyance pipelines constructed for Intakes 2, and 5 would not be anticipated to intersect with waterways or major irrigation canals. Dewatering would take place 7 days per week and 24 hours per day and would be initiated 1–4 weeks prior to excavation. Dewatering would continue until excavation is completed and the construction site is protected from areas with high groundwater levels (Chapter 3, Description of Alternatives). Scattered rural residences are located along CH E9 and SR 160 along both banks of the river, throughout the corridor between where Intakes 2, 3, and 5 would be built; some of these would be near or directly adjacent to construction activities (KOPs 16, 18, 19, 20, 26, and 30). The towns of Clarksburg and Hood have a higher concentration of residential viewers and are also near the intakes (KOPs 12, 38, 72, 73, and 74). Recreationists on local roadways and waterways, roadway users on local roadways, and nearby businesses would have direct views of intake construction.

Construction of the three intake structures and associated facilities would introduce considerable heavy equipment—excavators, graders, dozers, sheepsfoot rollers, dump trucks, and end loaders, in addition to support pickups and water trucks—into the viewshed of all viewer groups in the vicinity, especially between Clarksburg and Walnut Grove. Work areas of approximately 125 acres would be located adjacent to each intake site and south of Hood and would be used for staging, temporary field offices, worker parking, equipment and materials laydown and storage, and would support other construction-related needs. While farm equipment is common in this area, the presence of long-term and large-scale construction is not common and would adversely affect viewers who would see work areas over an extended period of time where they once saw agricultural lands.

Construction of all intakes would require that properties first be acquired, resulting in the relocation of several residences and razing of buildings on these properties during construction. The intakes would dissect the parcels, disrupting the continuity of rural land and affecting free-flowing visual access from lands on either side of the intakes. In addition, residences and businesses may experience loss of landscaping, fencing, or other landscape features of personal importance. The landscape sensitivity level is high, and impacts on viewers are substantial because the residents would experience disruptive construction activities near to their homes.

Once the site is cleared of built features, earthmoving activities would result in the removal of mature vegetation and topographical changes to areas that are presently flat. Earthmoving activities and associated heavy equipment and vehicles would be readily visible throughout operation of these sites and have the potential to create dust clouds that would attract attention from visual receptors and reduce the availability of short-range views. As set forth in Chapter 22, Air Quality and Greenhouse Gases, the BDCP proponents have identified ~~several~~ environmental commitments (Appendix 3B, Environmental Commitments) to reduce emissions of construction-related criteria pollutants, including basic and enhanced fugitive dust control measures and measures for entrained road dust that would help to reduce the creation of dust clouds that would negatively affect short-range views. As described in Chapter 3, Description of Alternatives, revegetation of disturbed areas would occur as a part of the project and revegetation would be determined in accordance with guidance given by DWR's WREM No. 30a, Architectural Motif, State Water Project and through coordination with local agencies through an architectural review process. Because revegetation is included as part of Alternative 4, it would help to lessen visual impacts. However, impacts may still be substantial, as described further in this analysis. This guidance from DWR WREM No 30a is set forth as follows and would apply to the other features described under Impact AES-1.

> If possible, the natural environment will be preserved. If not possible, a re-vegetation plan will be developed. Landscaping plans may be required if deemed appropriate to enhance facility attractiveness, for the control of dust/mud/wind/unauthorized access, for reducing equipment noise/glare, for screening of unsightly areas from visually sensitive areas. Planting will use low water-use plants native to the Delta or the local environment, with an organic/natural landscape theme without formal arrangements. For longevity and minimal visual impact, low maintenance plants and irrigation designs will be chosen. Planting plans will use native trees, shrubs or grasses and steps will be taken to avoid inducing growth of non-native invasive plant species/CA Plant Society weedy species. Planting of vegetation will be compatible with density and patterns of existing natural vegetation areas and will be placed in a manner that does not compromise facility safety and access. Planting will be done within the first year following the completion of the project and a plant establishment plan will be implemented.

Water-based construction would also be required to construct water intakes and levee modifications. Water-based recreational viewers would have the most direct views toward in-water construction, which would likely require partial channel closures and use of equipment within the waterways (KOP 26). All such construction would have temporary in-water construction zone speed restrictions where high-speed recreation (e.g., waterskiing, wakeboarding, and tubing) would effectively be eliminated. In-water construction activities would constrict boat passage, increase boat traffic congestion during peak use (primarily summer weekends), and extend viewing times of these facilities. In-water construction at all locations would result in adverse visual effects due to the elongated viewing times during periods of congestion, temporary partial channel closures that could impede recreational opportunities and create negative visual perceptions of these facilities, and a reduced recreational experience due the industrial nature of views of such facilities.

Once construction of the conveyance facilities is complete, Intakes 2, 3, and 5 would introduce large, industrial concrete and steel intake structures~~,~~ that range from approximately ~~55~~ 46 to 58 feet from river bottom to the top of the structure with a total structure length of ~~700~~ 2,300 1,259 or 1,667 feet depending on the location, ~~pumping plants~~intake storage and electrical buildings that are ~~59 feet~~approximately one to one and a half stories tall, ~~surge towers that are~~ two large triangular sedimentation basins that are each approximately 13.5 acres~~43-70 feet tall~~, four smaller rectangular drying basins that are each approximately 1.5 acres, perimeter landscaping, fencing, a substation, and other similar anthropogenic features into an area with an existing rural visual character and a riparian, riverine, and agricultural nature. The intake facility buildings are consistent with the scale and visual character of the surrounding landscape but would be located on the elevated intake landform, so would be more visually prominent~~design of the intakes and associated facilities could play a large part in helping to improve the quality of affected and degraded viewsheds~~. ~~Landscaping~~ The perimeter landscaping that would be incorporated as part of the facility design would help to improve the quality of views. Because of the long-term nature of construction, proximity to sensitive receptors, razing of residences and agricultural buildings, removal of vegetation, changes to topography through grading, and addition of large-scale landforms, industrial structures, and sedimentation basins where none presently exist, this effect is considered adverse.

The intake facilities would result in adverse visual effects upon the landscape, and the intakes proposed for Alternative 4 are larger than those analyzed under Alternative 1A. As seen in Figure 17-85, *Existing and Simulated Views of Intake 2 East from South River Road*, the removal of a substantial amount of riparian vegetation along the east bank provides an unobscured view of the intake facility~~, pumping plant,~~ and associated features making the intake facility the prominent visual feature in the landscape. A substation would ~~also~~ be introduced at the intake facility where none presently exists. The intake storage and electrical buildings ~~pumping plant~~ introduces ~~a large-scale building~~structures~~,~~ that are similar in scale to surrounding buildings and their darker coloring would help them recede into view~~appearance to a warehouse facility, that is a focal point and visually discordant in scale and mass to the surrounding rural character~~. ~~It also~~The large concrete intake adds a monotone solid color mass and the red gantery cranes stand out in~~to~~ a landscape where the natural colors ~~of the landscape~~ are earth-tones and more muted. ~~The surge tower would be 100 feet in diameter and the top of the rim would be at 105 feet NAVD88 for Intake 2, making the tower 75 feet tall at this location because the pumping plant finished floor elevation would be at approximately 35 feet NAVD88.~~ Overall, the existing vista from KOP 256 on SR 160 toward Intake 2 would be substantially impaired by vegetation removal and introduction of the ~~pumping plant~~on-bank intake and the Scenic Quality Rating would be reduced from a **C** to an **F**. A reduction in the Scenic Quality Rating associated with Intake 2 is representative of the effects that could occur to other views associated with intakes through the removal of vegetation, obscuring and limiting views beyond the foreground, and introducing large industrial features into a rural landscape and this effect would be adverse (see discussions under 17.3.1.2 and 17.3.1.3).

As seen in Figure 17-86a, *Existing and Simulated Views of Intake 3 East from SR 160 in January 2012*, ~~the removal of~~ a substantial amount of riparian vegetation would be removed along the east bank and ~~acts to open up the vista but also increases~~ the large, raised intake landform ~~the~~ would be visually ~~prominence~~ prominent ~~of the pumping plant~~ in the landscape, but perimeter landscaping would aid in reducing the raised landform's apparent scale. ~~The~~ However, the ~~pumping plant introduces a~~ large, raised landform~~-scale building, similar in appearance to a warehouse facility,~~ ~~that~~ would still be~~is~~ a focal point and visually discordant in scale and mass to the surrounding rural character within the vista. The scale of the intake facility buildings are in keeping with existing

surrounding buildings, and the darker coloring would help them to recede into view, but they would be located at a much higher elevation than surrounding buildings, on the large raised, human-made landform. ~~It also adds monotone solid color mass into a landscape where the natural colors of the landscape are earth-tones and more muted.~~ When compared to Figure 17-76a that shows Intake 3 East for Alternatives 1A, 1B, 2A, 2B, 6A, 6B, 7 and 8 (PTO alternatives), the intake pad would ~~be larger than~~appear to be smaller because of the perimeter landscaping that reduces its apparent scale under this alternative than for the PTO alternatives and the exclusion of a pumping plant under this alternative decreases the magnitude of visual effects from this vantage, when compared to other PTO alternatives. In addition, because of the perimeter landscaping, the intake pad appears to be somewhat of a visual continuation of the SR 160 levee from this vantage and the intake buildings are not as noticeable because they are partially screened by trees. They would be more visible in the winter when trees are dormant. ~~In addition, the surge tower would be 100 feet in diameter and the top of the rim would rise above the pumping plant at 96 feet NAVD88 for Intake 3, making the tower 62 feet tall at this location because the pumping plant finished floor elevation would be at approximately 34 feet NAVD88 for this intake.~~ While steel 230 kV transmission lines would not be introduced under this alternative, there would be a substation that would also visible and would ~~further~~ add to the industrial look of the intake facilities and detract from the existing rural character. Overall, even with perimeter landscaping, the existing vista from KOP 34 on SR 160 toward Intake 3 would be substantially impaired by vegetation removal and introduction of the ~~pumping plant~~raised intake landform and associated structures and the Scenic Quality Rating would be reduced from a **D** to an **E** under this alternative. A reduction in the Scenic Quality Rating associated with Intake 3 is representative of the effects that could occur to other vistas through the removal of vegetation, obscuring and limiting views beyond the foreground, and introducing large landforms and industrial features into a rural landscape and this effect would be adverse (see discussions under 17.3.1.2 and 17.3.1.3). However, as shown in Figure 17-86b, *Existing and Simulated Views of Intake 3 East from SR 160 in July 2013*, fast-growing poplar or cottonwood trees that were newly planted in January 2012 have since grown and act to obscure large portions of the intake pad ~~and portions of the pumping plant surge tower,~~ and substation. While ~~the substation would~~ not be as noticeable, the ~~pumping plant and surge tower~~large landform would still be visually discordant in scale and mass to the surrounding rural character within the vista and the Scenic Quality Rating would be reduced from a **D** to an **E**. Note that, over time, the trees will continue to grow and views of Intake 3 from KOP 34 could be further limited.

Figure 17-77, *Existing and Simulated Views of Intake 2 West from SR 160*, shows an intake associated with the west alignment. ~~However~~While this simulation includes a pumping plant, this view is representative of how an on-bank intake along the river under this alternative would look on the east bank of the river from CH E9. It is also representative of how intakes could affect this and other vista views from SR 160 and CH E9, as mapped in Appendix Figure 17D-1. The conversion of the riverbank that is grassy with riparian vegetation to the industrial looking on-bank intake is a stark visual and color contrast against the more natural colors and textures of a vegetated riverbank that is absent of structures. ~~The pumping plant introduces a large warehouse type of building that is a focal point and visually discordant in scale and mass to the surrounding rural character within the vista.~~ It also adds monotone solid color mass into a landscape where the natural colors of the landscape are earth-tones and more muted. The ~~pumping plant and on-bank~~ intake would ~~limit and~~ detract from the visual quality of views ~~beyond~~ in the foreground. ~~The introduction of tall, steel 230 kV transmission lines visually contrasts to existing views of wooden utility poles. In addition, at a closer distance, views of available sky would be interrupted by the transmission lines and pumping plant.~~ Overall, the existing vista from KOP 15 on SR 160 toward Intake 2 would be substantially

impaired by vegetation removal and introduction of the ~~pumping plant~~intake and the Scenic Quality Rating would be reduced from a **C** to an **E**. A reduction in the Scenic Quality Rating associated with Intake 2 is representative of the effects that could occur to other vistas through the removal of vegetation, obscuring and limiting views beyond the foreground, and introducing large industrial landforms and features into a rural landscape, and this effect would be adverse (see discussions under 17.3.1.2 and 17.3.1.3).

Visual changes associated with the intakes would be more apparent the closer the viewer is in relation to the intake. As illustrated in the simulations above, the sedimentation basins and ground level views of whole intake facility (refer to Figures 3-19a and 3-20a) are not available from a distance. However, when viewers are in close proximity to the intake and intake facilities, primarily when traveling by on SR 160 or on the Sacramento River, they would have more direct and up close views of the facility, in its entirety. The overall size of the intake and intake facility can be understood by comparing their sizes to the vehicles modeled in the Figure 3-19a rendering. Views from the river would not be able to be screened, allowing for direct visual contact with the large intake structure. On land, the perimeter of the facility would be fenced, with secured gate access from SR 160, but the sedimentation basins would be visible through this fencing. The tops of the sedimentation basins have larger dimensions than the bottoms, which measure 660 feet long, making the visible water surface area of the basins wider than the Sacramento River. In addition, the basins would be engineered water bodies with highly regular shapes and forms associated with them. Therefore, the sedimentation basins would introduce very large, visually contrasting human-made waterbodies into a landscape where the forms of existing waterways, such as the river and nearby sloughs, are much more organic. In addition, instead of tilled or vegetated agricultural lands, there would be large areas of pavement. Perimeter landscaping would help to reduce the apparent scale of the facility; however, it would take several years for landscaping to mature enough to provide benefit and the facility would still be very large in comparison to existing development within this rural landscape, and this effect would be adverse.

Forebays

Construction of a ~~40~~243-acre intermediate forebay (north of Twin Cities Road and east of Snodgrass Slough and the southerly most portion of Stone Lakes National Wildlife Refuge) (KOPs 115 and 257) and the ~~700~~ 600 acre Clifton Court Forebay expansion to the south of the existing forebay (KOPs 103, 106, and 107) would take less than 2 years. Generally, construction would occur Monday through Friday for up to 24 hours per day. Dewatering is anticipated where the forebay pipelines cross waterways or major irrigation canals less than 0.25 mile north of the connection with the intermediate forebay. Dewatering would take place 7 days per week and 24 hours per day and would be initiated 1–4 weeks prior to excavation. After construction is complete, disturbed areas of exposed soil would be seeded for erosion control and would revegetate after a short time. The intermediate forebay would be constructed southeast of Intake 5 and would be seen from Twin Cities Road, immediately north of the road and abutting Snodgrass Slough. Views from Twin Cities Road are obscured west of Snodgrass Slough by vineyards and riparian vegetation along Snodgrass Slough. Because it is in proximity to Walnut Grove there is a concentration of residential, recreational, and roadway viewers using Twin Cities Road. Rural residences, located south of Twin Cities Road and the intermediate forebay, would have construction occurring near their homes through construction of the intermediate forebay. The landscape sensitivity level is high, and impacts on viewers are substantial because the residents south of the intermediate forebay would experience disruptive construction activities near their homes. In addition, residents of Walnut Grove using Twin Cities Road that are also highly sensitive to the proposed project would view the

construction as they use the roadway. The existing ground surface elevation at this location is -6 to +11 feet, while embankments surrounding the forebay would be just over 32 feet above the ground surface.

Construction to expand the Clifton Court Forebay to the south would occur near residences and businesses in and near the Rivers End Marina & Storage, at the junction of Lindeman Road, CVP Canal, and Old River. Ground-level construction activities would not be visible from this area because of existing levees but would likely be visible from Byron Highway and Herdlyn and Lindeman Roads, where views are elevated. The existing ground surface elevation at this location is -5 to 0 feet, which would be degraded to -10 feet in certain locations, and embankments surrounding the forebay would be approximately 30-35 feet above the proposed ground surface.

Earthmoving activities would result in topographical changes to areas that are presently flat and would introduce heavy equipment and vehicles that would be readily visible throughout construction of the forebays and have the potential to create dust clouds that would attract attention from visual receptors and reduce the availability of short-range views. As set forth in Chapter 22, *Air Quality and Greenhouse Gases*, the BDCP proponents have identified ~~several~~ environmental commitments (Appendix 3B, *Environmental Commitments*) to reduce emissions of construction-related criteria pollutants, including basic and enhanced fugitive dust control measures and measures for entrained road dust that would help to reduce the creation of dust clouds that would negatively affect short-range views. Once construction of the intermediate forebay is complete, it would be immediately and prominently visible in the foreground from vantages surrounding it. While the water surface of the this forebay would not be visible, it would convert agricultural lands to a large, geometrically shaped levee embankment system that would conflict with the existing forms, patterns, colors, and textures associated with agricultural lands. As seen in Figure 17-87, *Existing and Simulated Views of Intermediate Forebay from Twin Cities Road*, the scenic view across agricultural fields from Twin Cities Road is fairly open but contains existing transmission lines. The forebay embankments would be tall enough to limit views of the existing tree line on the horizon. The intermediate forebay embankments would add a man-made visual massing and the embankments would have a visible geometric shape immediately adjacent to the roadway. Overall, the existing vista from KOP 257 on Twin Cities Road toward the intermediate forebay would alter and reduce the available views of agricultural lands and foreground views and would reduce the Scenic Quality Rating from an **E** to an **F**. This effect would be adverse, when seen from Twin Cities Road (see discussions under 17.3.1.2 and 17.3.1.3).

The expanded Clifton Court Forebay would have a similar effect on the existing visual quality and character as seen from Byron Highway. While expanding Clifton Court Forebay would convert a large area of agricultural land, the forebay in this location would not have as great a negative effect on the landscape as the intermediate forebay, due to the predominance of the existing Clifton Court Forebay, other water conveyance features, and fewer sensitive viewers. However, the expanded Clifton Court Forebay would result in noticeable changes that do not blend, are not in keeping or are incompatible with the existing visual environment, and could be viewed by sensitive receptors and from public viewing areas. This effect on visual quality and character would be adverse.

Overall, because of the large footprints of the forebays combined with the proximity to sensitive receptors, razing of residences and agricultural buildings, removal of vegetation, and changes to topography through grading resulting in noticeable changes from public viewing areas, this effect would be adverse.

Pumping Plants

There would be a facility with two pumping plants located northeast of the expanded Clifton Court Forebay under Alternative 4. The area surrounding the existing Clifton Court Forebay has two existing large-scale water facilities including the Edmonston Pumping Plant at the Delta-Mendota Canal and the Banks Pumping plant at the California Aqueduct. The facility would be built on elevated landform that is 10-15 feet taller than the existing surface, directly west of West Canal and south of Kings Island. The proposed pumping plants would each be 85 feet tall, at the top of the domed roof, and 182 feet in diameter. The facility would receive perimeter landscaping similar to intake structures and this, combined with the elevated landform, would screen the large pumping plants, electrical stations, substation, water treatment plan, and associated features from residents at Kings Island that are located approximately 0.3 mile away from the closest pumping plant. The plantings would also screen water-based views of the facility from West Canal. In addition, residents accessing Kings Island via Clifton Court Road would have a direct line of site toward the facility. The pumping plant facility would, however, be visible in the background from the rolling foothills and the Bethany Reservoir State Recreation Area, which the California Aqueduct Bikeway passes, which located over 5 miles southwest of the Clifton Court Forebay. However, the existing large-scale Edmonston Pumping Plant is located just over 1.5 miles away and is visible in middleground views from Bethany Reservoir, making this a more prominent feature in views. In addition, the darker coloring of the proposed pumping facility and distance would enable the pumping facility at Clifton Court Forebay to blend with the landscape and not stand out enough to negatively affect views from the foothills, recreation area, or bikeway. While features associated with the facility would likely be screened once vegetation has matured, site features that are closer to Kings Island and West Canal may be visible, such as the substations, water treatment facility, storage tanks, and staging areas. In addition, the existing vegetation in this area would need to be removed and require large areas of fill to raise the island. This effect would be adverse because of the proximity to sensitive receptors, removal of vegetation, changes to topography through grading, and facility visibility until perimeter landscaping matures.

~~Spoil and Borrow~~ Tunnel Work Areas

Smaller tunnel work areas would be associated with shaft sites; these shaft sites, which incorporate their tunnel work areas, are discussed in more detail below. There would be ~~a~~ one large ~~spoil/borrow~~tunnel work area~~s~~ near Intake 2 (200 acres) (KOP 15) that would be needed under Alternative 4 ~~to store excess spoils from excavation~~for construction staff and staging ~~and~~ associated with tunnel boring ~~and to borrow material to construct levees, the intake pads, and to meet other fill requirements~~activities. This site would be near the intake structures and would consequently affect the same viewer groups described above for intakes. A tunnel work ~~spoil/borrow~~ area near Intake 2 would affect available views from SR 160 and is near the town of Clarksburg, with a higher concentration of residential, recreational, and roadway viewers (Mapbook Figure M3-4). Recreationists on local roadways, roadway users on local roadways, residents, and nearby businesses would have direct views of construction activities at the tunnel work ~~spoil/borrow~~ area. The landscape sensitivity level is high, and impacts on these viewers are substantial, especially for residences that would experience disruptive construction activities near their homes.

Earthmoving activities would likely result in the removal of mature vegetation ~~and topographical changes to~~ to accommodate the tunnel work area~~s that are presently flat~~. Equipment and activities associated with construction staging would be visible. ~~Earthmoving activities and associated heavy equipment and vehicles would be readily visible throughout operation of these sites and have the~~

~~potential to create slowly moving dust clouds that would attract attention from visual receptors and reduce the availability of short-range views. As set forth in Chapter 22, *Air Quality and Greenhouse Gases*, the BDCP proponents have identified several environmental commitments (Appendix 3B, *Environmental Commitments*) to reduce emissions of construction-related criteria pollutants, including basic and enhanced fugitive dust control measures and measures for entrained road dust that would help to reduce the creation of dust clouds that would negatively affect short-range views.~~ The tunnel work area ~~spoil and borrow site~~ would be in use for close to 7.5 years, and construction operations at these locations would take place Monday through Friday for up to 24 hours per day. Because of the long-term nature of construction, proximity to sensitive receptors, removal of vegetation, and ~~changes to topography through grading~~presence of the staging and work area, this effect is considered adverse.

Once construction of the BDCP facilities is complete, the tunnel work ~~spoils/borrow area~~ north of Intake 2 would result in a large-scale landscape effect that would also alter the agrarian visual character. As described under "Forebays", above, revegetation of disturbed areas would occur as a part of the project and revegetation would be determined in accordance with guidance given by DWR's WREM No. 30a, *Architectural Motif, State Water Project* and through coordination with local agencies through an architectural review process. However, impacts would still be substantial. ~~In addition to spoils/borrow in the study area, offsite borrow sites may be needed to provide suitable materials for intake pipeline foundations, berms around RTM storage areas and canal embankments. It is not known how much import material would be needed and where it would come from. It is assumed that effects at import borrow sites would be similar in scale and have similar adverse visual effects to those within the study area. Alterations at these locations would result in sunken or elevated landforms introduced into a landscape that is currently predominantly flat. These features would be visually discordant with the area's existing forms, patterns, colors, textures associated with the existing agrarian character in the study area.~~ Accordingly, the ~~spoil and borrow~~tunnel work area~~s~~ would result in an adverse effect on visual resources. Mitigation Measure~~s~~ AES-~~1c~~ 1b and AES-1g ~~is~~are available to address this effect.

Reusable Tunnel Material Areas

RTM areas would be needed to store excess material from tunnel boring that would later be used to construct levees and to meet other fill requirements or be transported to spoils sites. ~~Five~~ Ten RTM areas are proposed for Alternative 4: one immediately northeast of Intake 2 (~~25~~ 54 acres) (KOPs 1, 4, and 15 ~~[Figure 17-77]~~) south of Scribner Road, east of the Sacramento River; ~~four~~ two south of Lambert Road and north of Dierssen Road (46 and 33 acres); two north of Twin Cities Road (39 and 43 acres) (KOP 115); one south of Twin Cities Road (114 acres) (KOP 115); one west of the intermediate forebay (131 acres); ~~two on Staten Island (213 and 1,061 acres)~~; one south of SR 12 (~~809~~ 1,209 acres) (KOP 98 ~~[Figure 17-32]~~) and two west of Clifton Court Forebay (~~704~~ 639 and 157 acres) (KOP 101) (see Mapbook Figure M3-4). There would be a total of ~~3,375~~2,464 acres of land affected by RTM areas under Alternative 4. In addition, many of the RTMs under Alternative 4 would be 6–10 feet high, except for the RTM areas near the proposed intermediate forebay and west of the Clifton Court Forebay that would be 10–~~-~~15 feet high, instead of 6 feet high as with Alternatives 1A, 2A, 3, 5, 6A, 7, and 8, making the Alternative 4 RTM areas up to almost twice as high as RTM areas under other tunnel alternatives. The RTM areas near Intake 2; Lambert, Dierssen, Twin Cities Roads; and SR 12 would have negative effects because of proximity to nearby residents and visibility from nearby roadways. Activities associated with placing and spreading the RTM would occur near or directly adjacent to the homes of residential viewers. The RTM area near Intake 2 would be visible from SR 160. ~~The RTM areas on Staten Island would be seen by nearby sensitive residents,~~

~~recreationists, and viewers passing on rural roadways, including Staten Island and Gas Well Roads. Staten Island is owned by The Nature Conservancy and serves as sandhill crane wintering habitat and wildlife viewing. The southern RTM area on Staten Island would be visible from the SR 12 bridge crossing over Little Potato Slough that provides for views out and over the RTM area.~~ The RTM area south of SR 12 would be visible to roadway users on this busy roadway but views of construction activities would be fleeting as travelers on these roadways travel by the site. The landscape sensitivity level is moderate to high, and impacts on viewers of RTM areas are substantial because residents would experience construction activities near their homes and because of their visibility from nearby roadways that have views of the existing rural landscape. Changes to the RTM area east of Byron Highway near the Clifton Court Forebay would primarily affect roadway users on the highway and nearby local roadways. Because these viewers are not as sensitive and there is nearby rolling terrain, these RTM areas would not appear as visually obtrusive as the other RTM areas for Alternative 4. This RTM area is also just over 2 miles away from Discovery Bay. As seen in Figure 17-61 (KOP 197), the RTM area would be in the general area of the transmission lines seen in front of the Black Hills and the RTM area would not be distinguishable when seen from Discovery Bay. The RTM conveyor transporting excavated material from the launch site northeast of Clifton Court Forebay to the nearby RTM area may be visible to residents living on Kings Island and adversely affect their views by introducing an industrial conveyor system on top of the levee surrounding the forebay. Mitigation Measure AES-1b is available to address this effect.

Earthmoving activities would likely result in the removal of mature vegetation and topographical changes to areas that are presently flat. Earthmoving activities and associated heavy equipment and vehicles would be readily visible throughout operation of these sites and has the potential to create slowly moving dust clouds that would attract attention from visual receptors and reduce the availability of short-range views. As set forth in Chapter 22, *Air Quality and Greenhouse Gases*, the BDCP proponents have identified ~~several~~ environmental commitments (Appendix 3B, *Environmental Commitments*) to reduce emissions of construction-related criteria pollutants, including basic and enhanced fugitive dust control measures and measures for entrained road dust that would help to reduce the creation of dust clouds that would negatively affect short-range views.

RTM areas would be in use for close to 7.5 years, and operations at these locations would take place Monday through Friday for up to 24 hours per day. Because of the long-term nature of construction, proximity to sensitive receptors, and changes to topography through grading, resulting in noticeable to very noticeable changes to the visual setting, this effect is considered adverse. Effects may be reduced at various RTM areas if the material is reused for other purposes, reducing the amount of material on the site.

Once construction of the water conveyance facilities is complete, the RTM areas would result in large-scale landscape effects that would alter the agrarian visual character. Alterations at these locations would result in sunken or elevated landforms introduced into a landscape that is currently predominantly flat. These features would be visually discordant with the area's existing forms, patterns, colors, and textures associated with the existing agrarian character in the study area. Mitigation Measure AES-1c is available to address this effect.

Shaft Sites

Retrieval, launch, and ventilation shaft sites would be converted to access shaft sites once construction is complete and be maintained and permanent features. Tunnel work areas would be associated with each of these shaft sites that are approximately 10 to 30 acres in size. Shaft sites

would be located at Intakes 2, 3, and 5; the intermediate forebay; and pumping plant and would appear to be a part of those features. ~~Retrieval and launch~~The shaft sites on Mandeville and Bacon Islands ~~and near Clifton Court Forebay~~ are in areas where there are no immediate viewers and, therefore, have a low landscape sensitivity level. The shaft site northeast of Clifton Court Forebay would be obscured by levees along West Canal, limiting views for water-based recreationists. However, shaft sites ~~between~~ at the ~~I~~intakes ~~2 and 3~~ and north of Lambert Road (KOP 86), and ~~south of Walnut Grove Road (KOP 258), and~~ on Staten Island are in areas with nearby residences and near frequently traveled roadways, and the landscape sensitivity level is moderate to high. ~~Walnut Grove Road serves as primary access route to Walnut Grove from I-5 so would be seen by a large number of roadways users.~~ Rural roadways pass near the shaft site~~s~~ on south Staten Island, which is noted for its sandhill crane wintering habitat and wildlife viewing~~,~~. The shaft sites south of SR 12 (KOP 98 ~~[Figure 17-312]~~) and north of SR 4 would be visible to roadway users on these busy roadways, but views of construction activities would be fleeting as travelers on these roadways travel by the site. Construction of the shaft sites would take just under 2.5 years; they would then be in operation for close to 7.5 years, Monday through Friday for up to 24 hours per day.

This would introduce considerable heavy equipment, vehicles, and cranes needed to bore and construct the tunnel and remove excavated materials from the tunnels into the viewshed of sensitive viewers. The shaft sites would have associated work areas where materials would be stockpiled and pieces needed to construct the finished tunnel structure would be stored. In addition, the shaft sites would be built on raised earthen pads to elevate them above the flood level, and these pads would be approximately ~~16 to~~ 20 ~~-~~ feet high or at the 100-year design flood elevation for each island). The shaft would rise approximately another 20 feet above the grade of the raised pad, and there would be construction office and storage buildings located at the base of the raised pad. The shaft site would be surrounded by fencing. Construction activities associated with the shaft sites may constitute an adverse effect on visual resources due to the physical introduction of these features and the duration of time that they would be visible in the landscape. ~~Once construction is completed, the shaft site construction pads would be removed and the launch and retrieval shafts would be covered with earth.~~ This effect can been seen in Figure 17-80, *Existing and Simulated Views of Launch/Retrieval Shaft Site near Isleton Road*, which is representative of the same effects that would result under construction of Alternative 4. Construction of shaft sites would convert agricultural lands for a period of time and may require the removal of landscape or vegetation and structures and would introduce the raised pad into viewshed, as illustrated in "Simulated View during Construction." In addition, the introduction of tall, steel 230 kV transmission lines would occur that could visually contrast to existing views depending on if the existing transmission lines consist of wooden utility poles or steel transmission lines. Overall, existing views from KOP 95 on SR 160, which are representative of Alternative 4, toward the launch/retrieval site would be impaired by the removal of the building and vegetation and introduction of the transmission lines. The Scenic Quality Rating would be reduced from a **D** to an **E**. This effect would be adverse (see discussion under 17.3.1.2 and 17.3.1.3).

In addition, tunnel construction would require safe haven work areas. These would occur at planned, two-mile intervals for atmospheric safe haven intervention areas that are approximately 10 acres in size and unplanned locations for pressurized safe haven intervention areas that would be no larger than 1 acre. Surface disturbance activities at each of the intervention sites will differ depending on the type of intervention that is being executed. Planned safe haven work areas would be used to set up equipment, construct flood protection facilities, excavate/construct the shaft, and set up and maintain the equipment necessary for the TBM maintenance work. Constructing the

planned access shafts would take approximately 9 to 12 months. Surface equipment needed to construct unplanned safe haven intervention site would require a small drill rig, grout mixing and injection equipment, and facilities to control groundwater runoff at the site. Constructing the unplanned access shafts would take approximately 8 weeks. Once the TBM maintenance at safe have work areas is complete, the access shafts would be abandoned and backfilled to preexisting conditions. Excavated materials from drilling and grouting would be confined to the work site and would be disposed of offsite at a permitted facility. Disturbed areas would be returned to preconstruction conditions by careful grading, reconstruction of features such as irrigation and drainage facilities, and replanting of crops and/or compensating farmers for crop losses.

Planned safe haven areas would be at the following locations: one on the island located east of Snodgrass Slough and west of the Mokelumne River, two on Staten Island along North Staten Island Road, one on Venice Island, two on Bacon Island, and one south of SR 4. The safe haven work areas east of Snodgrass Slough and on Venice Island and north Bacon Island are in areas where there are no immediate viewers and, therefore, have a low landscape sensitivity level. The safe haven work area on south Bacon Island is in area where train travelers would pass by the site, but views of construction activities would be fleeting as railway travelers pass by the site. Rural roadways pass near the safe haven work areas on Staten Island, which is noted for its sandhill crane wintering habitat and wildlife viewing, The safe haven work areas south of SR 4 would be visible to roadway users on this busy roadways but views of construction activities would be fleeting as travelers on these roadways pass by the site. Because these sites would be in use only temporarily and then restored once maintence is complete, there would no permanent adverse visual effects associated with planned safe have work areas. Unplanned safe haven work areas are relatively small and would be located to avoid sensitive habitats and to minimize impacts. Therefore, it is expected that there would no permanent adverse visual effects associated with unplanned safe haven work areas, as well.

Docks and Barge Traffic

New barge unloading facilities would be built in the viewshed of recreationists, businesses, public roadways, and residential properties that have views and vistas that include the sites, and would result in temporary long-term changes in views in the immediate area. These facilities would be constructed in areas where the landscape sensitivity levels range from low to high. New facilities would convert vegetated areas to large, unvegetated swaths of land and piles of sand and gravel with associated loading infrastructure, introducing these features into a viewshed where none presently exist. These features would contrast sharply with the more natural areas that were present prior to construction of the new facility. New facilities would convert agricultural and other open space lands to a land use that is industrial in nature and from one that is vegetated to one that is largely unvegetated, creating new landscape effects.

Alternative 4 includes five barge unloading facilities to be built on or near the modified pipeline/tunnel alignment at riverbank locations about 5–6 miles apart. As described in more detail in Chapter 15, *Recreation*, the facilities would be built on the following waterways: Snograss Slough north of Lambert Road near the intermediate forebay, ~~South Mokelumne River near the southern RTM area on Staten Island, San Joaquin River~~ Potato Slough adjacent to the RTM area south of SR 12, San Joaquin River near the safe haven work area on Venice Island, Connection Slough near the safe haven work area on Bacon Island, Old River west of the ventilation shaft north of SR 4, and ~~Italian Slough~~West Canal near the ~~RTM area~~pumping plant ~~near~~ just northeast of Clifton Court Forebay and would affect water-based recreation. Water-based recreational viewers would have the most

direct views toward barge traffic and loading/offloading activities involving equipment and materials for pipeline construction. Construction of the barge facilities may require partial channel closures and use of equipment within the waterways. All barge facilities would have temporary in-water construction zone speed restrictions where high-speed recreation (e.g., waterskiing, wakeboarding, tubing) would effectively be eliminated. Once built, docks would be in use for approximately 5 years. During this time, loading facilities and barge traffic would constrict boat passage, increase boat traffic congestion during peak use (primarily summer weekends), and extend viewing times of these facilities.

The Snograss Slough~~South Mokelumne River~~ location could constrict boat traffic, which may be ~~high~~ moderate to low at this location due to its proximity to the populated town of ~~Tower Park Marina Resort and Westgate Landing Recreational Area~~Walnut Grove~~ and because Staten Island is sandhill crane wintering habitat and there may be water-based wildlife viewing~~. The Potato Slough and San Joaquin River ~~location~~ locations are~~is~~ very wide or have alternative travel routes, so boats could avoid the loading facility entirely. The Connection Slough, ~~and~~ Old River, and West Canal locations could constrict boat traffic, which may be high at these locations; however, while circuitous, alternative routes are available to avoid ~~this~~ these locations. ~~, Italian Slough dead ends west of the barge unloading facility, close to Lazy M Marina. Because there is no other means of access, boats going to and from Lazy M Marina would need to pass by the barge unloading facility to access other waterways east of Clifton Court Forebay. While this area may not be as highly traveled, boat access could be constricted at this location because it serves as the only access to Lazy M Marina.~~ Once construction of the conveyance facilities is complete, docks would be removed and barge traffic would cease.

Construction and use of barges and barge unloading facilities during construction at all locations would introduce dominant visual elements resulting in noticeable changes that do not blend and are not in keeping or are incompatible with the existing visual environment. These changes may result in adverse visual effects due to the elongated viewing times during periods of congestion, temporary partial channel closures that could impede or eliminate recreational opportunities and create negative visual perceptions of these facilities, and a reduced recreational experience due the industrial nature of views of such facilities. Thus, this effect would be adverse.

Access Roads

Construction of temporary and permanent access roads would take less than 2 years and would follow linear paths; consequently, construction of these features would not be focused on one specific location for an extended period of time. Construction of access roads would occur Monday through Friday for up to 24 hours per day. Access roads would be located in areas in where the landscape sensitivity levels range from low to high. Most of the temporary and permanent access roads follow alignments that have previously been cleared and that serve as agricultural access routes. Construction would include improving the condition of these existing access routes to accommodate construction access. Vegetation removal would likely occur along the rights-of-way of access roads and would negatively affect views from SR 160, River Road, and other roadways in the study area. After construction is complete, disturbed areas of exposed soil would be seeded for erosion control and would revegetate after a short time. Because of the temporary nature of construction and the regular relocation of activities and because roads follow alignments that have previously been cleared and that serve as agricultural access routes, this would not constitute an adverse effect.

In addition, a spread diamond (Type L-2) interchange would be constructed along SR 12 to provide safe access to the shaft site and RTM area south of SR 12 to facilitate safe traffic patterns along this portion of the highway during construction. A concrete bridge with 16 feet of vertical clearance would be constructed over SR 12 that would be 40 feet wide (two 12-foot lanes with 8-foot shoulders). Auxiliary lanes would also be added in both directions for traffic merging. Additional traffic signage would also increase the presences of such features along this route. The intersection improvement would introduce a new transportation structure that would limit views beyond when traveling in either direction, because the terrain is very flat, and would obscure views of Mount Diable on approach to the bridge when traveling west, and this would constitute an adverse effect.

Transmission Lines

Proposed transmission line corridors are shown in Mapbook Figure M3-4. Construction of the temporary 69 kV transmission lines would take less than 2 years and would require vegetation clearing along the linear ROWs. Construction of the permanent 69 and 230 kV transmission lines would also take less than 2 years and would require vegetation clearing along the linear ROWs. Construction of transmission lines would occur Monday through Friday for up to 24 hours per day, and transmission lines would be located in areas where the landscape sensitivity levels range from low to high (KOPs 15 ~~[Figure 17-77]~~, 16, 18, 19, 20, 26, 30, 34 ~~[Figures 17-86a,b]~~, 41, 42, 49, 54, 72, 73, 74, 86, 98, 101, 103, 106, 107, 115, 254, 255, 257, and 258).

The temporary and permanent 69 kV lines would be wooden or steel poles, depending on the utility, which are 60 feet tall and spaced 450 feet apart. The temporary 230 kV lines would be steel poles that are 95–100 feet tall and spaced 750 feet apart; however, lattice steel towers may be used at Western interconnections. Construction of transmission lines move along these linear ROW corridors that are 150 feet wide at poles for 69 kV and 230 kV lines. For every 2 miles of line and where the line takes a turn greater than 15 degrees, a conductor pulling location that is 150 feet wide with 350 feet of length along the corridor for 69 kV and 230 kV lines would be required adjacent to the pole.

Construction would require clearing the corridor of vegetation, erecting the towers or poles, and then stringing the power lines using the conductor pulling locations. Construction of these features would move in a linear fashion and would not take place in any specific location for an extended period of time. Cranes would be used to string 69 kV lines, while towers, cranes and helicopters would be used for 230 kV lines. Site preparation, tower erection, and stringing would introduce disruptive visual elements, such as construction equipment and activity, into the landscape and temporarily detract from views. Construction of the 230 kV lines would be the most disruptive during construction because towers, cranes, and helicopters would be more visible and draw more attention toward construction activities because of movement associated with helicopters and cranes and noise associated with helicopters. Temporary power would be supplied by 69 kV and 230 kV transmission lines that would tap into the Banks Substation near the Banks pumping plant or a substation located off of Sellers Avenue near Brentwood in the southern end of the alignment, and a point on the existing electrical grid north of an area of the Cosumnes River Preserve, approximately 1 mile west of Highway 99 and 5 miles south of Elk Grove, in the northern end of the alignment. These would be new lines and would generally not run parallel to existing transmission corridors. The Banks Substation is immediately south of the California Aqueduct, and would require over 2 miles to connect to the Clifton Court Forebay area. There is already a substation, office buildings, and warehouse facility buildings at the Banks pumping plant that make this area industrial in nature. However, the new substation in the Banks Substation area would increase

utility infrastructure present at this location, and the new 230 kV electrical transmission lines would compound the amount of visible industrial elements and result in adverse visual effects.

Permanent power would be supplied by the line connecting to an area near the Cosumnes River Preserve, described above. Permanent 230 kV transmission lines are shown on Figure 3-25. This transmission line would not parallel existing transmission corridors and would introduce a transmission corridor into the landscape where none or few presently exist. This would create or add to the amount of visible transmission lines, based on location, and not be in keeping with the existing visual character. New permanent 69 kV lines would branch from the northern terminus of the 230 kV line to supply power to the intermediate forebay control structure and Intakes 2, 3, and 5. Each intake would have an electrical substation and transformer located near the sedimentation basins and intake pumping plants (refer to Figure 3-20).

This 230 kV line would pass through areas with and without existing transmission lines. The line would extend approximately 3 miles through or adjacent to agricultural lands and agricultural access roads until reaching Lambert Road where it intersects with a large agricultural operation. A new substation would be constructed north of Lambert Road to supply electrical power. ~~The~~ From the Lambert Road substation, the 230 kV line would ~~then~~ follow Lambert Road, eastward, for just over ~~6~~ 7 miles and then extend northeast to another new substation, and another 230 kV line would travel south to the intermediate forebay control structure. New permanent 69 kV lines would branch from the substation at the northern terminus of the 230 kV line to supply power to Intakes 2, 3, and 5. Each intake would have an electrical substation and transformer located near the sedimentation basins and intake pumping plants (refer to Figure 3-20).

Most of the transmission lines would follow access roads constructed for the BDCP conveyance facilities or other existing access roads and roadways that are within the study area. After construction is complete, disturbed areas of exposed soil would be seeded for erosion control and would revegetate after a short time. Environmental Commitment 3B.3, Transmission Line Support Placement, would ensure that transmission lines avoid sensitive habitats to the degree feasible and that towers, poles, and substations are designed and placed to avoid existing structures. In agricultural areas, Environmental Commitment 3B.3 establishes measures to minimize crop damage, use single-pole structures, locate lines along existing transmission line corridors or property boundaries, use increased spans, and to limit the use of guy wires. However, tree and shrub removal would still likely occur within the ROWs and would negatively affect views from SR 160, River Road, Lambert Road (under the east-west option) and other roadways in the study area. Once the proposed 230 kV electrical power transmission lines are constructed, tall steel poles that would be highly visible landscape features would contrast strongly with their surroundings. The 69 kV electrical power transmission lines would also be larger than wood-poled transmission lines commonly seen in the Delta. While wood-poled transmission lines are part of most existing views, new 69 and 230 kV transmission lines and their cleared ROWs would adversely affect the existing visual character by introducing large towering structures in a linear pattern that appear to march through the landscape. New substations would further introduce and increase utility infrastructure in areas where such features are not present. The temporary nature of construction and movement of construction activities to different locations, combined with tree and shrub removal within ROWs, and appearance of transmission lines and substations once in place, would make changes in views associated with transmission lines adverse. The transmission line alignment in combination with other temporary and permanent transmission lines throughout the study area would contribute to adverse changes in the visual quality and character. Mitigation Measures AES-1a through AES-1c are available to address these effects.

Concrete Batch Plants and Fuel Stations

Under Alternatives 1A, 2A, 3, 5, 6A, 7, and 8, precast segment yards would be located adjacent to, but within footprints identified for, concrete batch plants or other work areas. However, under Alternative 4, it is assumed that precast tunnel segments would be purchased and transported from offsite plants to the construction sites. Therefore, precast segment yards would not be needed under Alternative 4, and there would be no visual effects from such facilities.

Approximately ~~2~~1-acre concrete batch plants and ~~2~~1-acre fuel stations would be located within the work areas for Intakes 2, 3, and 5 (KOPs 15 ~~[Figure 17-77]~~, 16, 18, 49, 54, 55, and 256 ~~[Figure 17-85]~~), ~~40~~38-acre concrete batch plant~~s~~ and a ~~2~~1-acre fuel station ~~on an RTM area~~near the intermediate forebay north of Twin Cities Road (KOP 115), 30-acre concrete batch plant and a 1-acre fuel station near the RTM area south of SR 12 (KOP 98), and a 40-acre concrete batch plant and a 2-acre fuel station on an RTM area ~~near~~ west of Clifton Court Forebay (KOP 101) (Mapbook Figure M3-4). Concrete batch plants would have visible features that are likely to include silos to hold materials for mixes, material unloading areas and storage piles, concrete truck loading areas and washouts, liquid storage tanks, conveyors, heavy equipment and trucks for material movement and transport, lighting, and mixing equipment. Built features would be largely made of steel that is painted. Batch plants would convert agricultural lands to industrial facilities. Fuel stations may have aboveground storage tanks that are painted and fuel pumps that would be visible and would convert agricultural lands to industrial facilities.

Construction of a concrete batch plants and fuel stations at Intakes 2, 3, and 5 would have the greatest effect because construction would take place immediately adjacent to SR 160. Construction of the concrete batch plant and fuel station on Twin Cities Road would also have a substantial effect because it would be in proximity to a roadway that is highly traveled by sensitive visual receptors. Construction of a concrete batch plant and fuel station near SR 12 would introduce large industrial structures and facilities in and area that is agricultural and where there are only a few buildings. The primary viewers of this area are roadway travelers on SR 12 that pass by the site at highway speeds that would have intermittent visual access of temporary construction activities that would last less than 2 years. However, the nearby residences located north of SR 12, along the levee, would have views of longer duration. Construction of a concrete batch plant and fuel station near Clifton Court Forebay would be located in close proximity to similar industrial looking facilities that are associated with the forebay and existing transmission lines that course the area. The primary viewers of this area are roadway travelers on Byron Highway that pass by the site at highway speeds that would have intermittent visual access of temporary construction activities that would last less than 2 years. Once the project is complete, these facilities would be removed.

Construction of the concrete batch plants and fuel stations would introduce heavy equipment and vehicles that would be readily visible throughout construction of the facilities and have the potential to create dust clouds that would attract attention from visual receptors and reduce the availability of short-range views. As set forth in Chapter 22, *Air Quality and Greenhouse Gases*, the BDCP proponents have identified ~~several~~ environmental commitments (Appendix 3B, *Environmental Commitments*) to reduce emissions of construction-related criteria pollutants, including basic and enhanced fugitive dust control measures and measures for entrained road dust that would help to reduce the creation of dust clouds that would negatively affect short-range views. Once construction of the concrete batch plants and fuel stations are complete, these structures would be immediately and prominently visible in the foreground from surrounding vantages. Agricultural lands would be converted to industrial structures and facilities that conflict with the existing forms, patterns, colors,

and textures associated with agricultural lands. Converting agricultural lands to industrial facilities, especially those in close proximity to SR 160, is considered adverse.

Head of Old River Operable Barrier

The operable barrier at the head of Old River would be constructed to control fish passage. It would include a fishway approximately 40 feet long and 10 feet wide, constructed of reinforced concrete. Construction of the barrier would last up to 3 years and primarily take place Monday through Friday for up to 24 hours per day. The large structure across the existing channel would limit physical and visual access to views of the horizon beyond. Mount Diablo would still be visible over the structure. Because of the long-term nature of construction, proximity to sensitive receptors, removal of vegetation, and changes to topography through grading, this effect is considered adverse.

Summary

***NEPA Effects*:** The primary features that would affect the existing visual quality and character under Alternative 4, once the facility has been constructed, would be Intakes 2, 3, and 5, the intermediate forebay, pumping plant, and expanded Clifton Court Forebay, resulting landscape effects left behind from ~~spoil/borrow~~tunnel work and RTM areas, the operable barrier, SR 12 interchange, and transmission lines. These changes would be most evident in the northern portion of the study area, which would undergo extensive changes from the permanent establishment of large industrial facilities and the supporting infrastructure along and surrounding the segment of the Sacramento River from Clarksburg to north of Courtland where the intakes would be situated.

Overall, construction would take 9 years, and the intensity of the activities in contrast to the current rural/agricultural nature of the area would be substantial. Construction of Intakes 2, 3, and 5 and the accompanying intake structure and sedimentation basins, pumping plants, shaft sites, ~~surge towers,~~ tunnel work~~borrow/spoi~~ areas, and RTM areas would introduce visually dominant and discordant features in the foreground and middleground views, and these elements would be very noticeable to all viewer groups, even with perimeter landscaping at the intakes and pumping plant. A ~~ventilation~~ shaft site, tunnel and safe haven work area, ~~and RTM area~~ and transmission lines would be visible from SR 4. While not officially designated state scenic highways, and therefore not discussed under *Impact AES-3: Permanent damage to scenic resources along a state scenic highway from construction of conveyance facilities*, this road is a San Joaquin County Scenic Route (see *Section 17.2.3.2, County and City General Plans – San Joaquin County*). These features would detract from the visual quality of views from these routes.

After construction, areas surrounding the intakes, operable barrier, tunnel work~~spoil/borrow~~ areas, RTM areas, and shaft sites may be denuded of vegetation for a short period of time until the landscaping plans designed under WREM No. 30a are implemented. Once installed, the landscape would still appear to be denuded of vegetation or to have little vegetative cover because immature landscaping would be similar in appearance to tilled or newly planted agricultural fields. The sites would be in a transitional state, and over a period of a few years, plant species would mature and vegetation would recolonize the sites. These changes would happen in an area known for its open space, agricultural landscapes, and rural characteristics and would segment the visual landscape of the study area, reduce the amount of open space lands available to viewers, and eliminate valued visual resources. The effects of permanent access roads on visual resources would not be adverse. The effects of shaft site pads and access hatches on the existing scenic character may be adverse. Operation of the intakes, the visual presence of large-tunnel work~~scale borrow/spoil~~ and RTM area landscape effects, and transmission lines would result in adverse effects on the existing visual

character. In addition, construction of all of these features has the potential to negatively affect wildlife viewing and the overall enjoyment of scenic views in the study area. Therefore, because of the long-term nature of construction combined with the proximity to sensitive receptors, razing of residences and agricultural buildings, removal of vegetation, and changes to topography through grading, this overall effect of conveyance facility construction on existing visual quality and character is considered adverse. Mitigation Measures AES-1a through AES-1g are available to address visual effects resulting from construction of Alternative 4 water conveyance facilities.

***CEQA Conclusion*:** Construction of Alternative 4 would substantially alter the existing visual quality and character present in the study area. The long-term nature of construction of the intakes, pumping plants, operable barrier, ~~pipeline/tunnel, work areas,~~ tunnel work~~spoil/borrow~~ and RTM areas, shaft sites, barge unloading facilities, and operable barrier; presence and visibility of heavy construction equipment; proximity to sensitive receptors; relocation of residences and agricultural buildings; removal of riparian vegetation and other mature vegetation or landscape plantings; earthmoving and grading that result in changes to topography in areas that are predominantly flat; addition of large-scale industrial structures (intakes, sedimentation, basins, and related facilities); remaining presence of large-scale ~~borrow/spoil~~tunnel work and RTM area landscape effects; and introduction of tall, steel transmission lines would all contribute to this impact.

Overall, construction would last up to 9 years and would change the existing visual character in the vicinity of project elements from those of agricultural, rural residential, or riparian and riverine settings to areas involving heavy construction equipment, temporary construction structures, work crews, other support vehicles and other activities that would modify and disrupt short- and long-range views. These activities would be disruptive to some viewers. Once construction is complete, the alternative would result in the placement of large, industrial concrete and steel intake structures, pumping plants, ~~surge towers,~~ fencing, and other similar anthropogenic features where none presently exist. Because of the landscape sensitivity and visual dominance of these features, these changes would result in reduced scenic quality throughout the study area (see 17.3.1.3, *Analysis of the Alternatives' Impact on Visual Resources*). Thus, Alternative 4 would result in significant impacts on the existing visual quality and character in the study area.

Mitigation Measures AES-1a through AES-1g would partially reduce impacts by locating new transmission lines and access routes to minimize the removal of trees and shrubs and pruning needed where feasible, installing visual barriers between construction work areas and sensitive receptors, developing and implementing a tunnel work~~spoil/borrow~~ and RTM area management plan, restoring barge unloading facility sites once decommissioned, applying aesthetic design treatments to all structures to the extent feasible, locating concrete batch plants and fuel stations away from sensitive visual resources and receptors and restoring the sites upon removal of facilities, and using best management practices to implement a project landscaping plan. However, impacts may not be reduced to a less-than-significant level because even though mitigation measures would reduce some aspects of the impact on visual quality and character, ~~it is not certain the mitigation would~~mitigation would not reduce the level of the impact to less than significant in all instances. In addition, the size of the study area and the nature of changes introduced by the alternative would result in permanent changes to the regional landscape such that there would be noticeable to very noticeable changes that do not blend or are ~~not in keeping with the existing visual environment~~not in keeping with the existing visual environment based upon the viewer's location in the landscape relative to the seen change. Thus, Alternative 4 would result in significant and unavoidable impacts on the existing visual quality and character in the study area.

Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible

BDCP proponents will make site-specific design decisions to locate new transmission lines and access routes to minimize effects on vegetation where feasible. These efforts will include the following actions.

- Working with the design engineer, site-specific location adjustments will be identified to avoid adversely affecting mature tree and shrub groupings to the extent feasible and to avoid creating large, linear swaths of vegetation clearing through the construction of new transmission lines and access routes.
- Where new transmission lines are located near trees along designated scenic route portions of SR 160 and River Road, the construction contractor will be required to utilize selective pruning techniques to avoid hard pruning of tree canopies that would negatively affect those scenic resources and views along those routes.
- Existing transmission corridors will be evaluated for placement of the new transmission lines to avoid creating new transmission corridors to the extent feasible.
- Transmission lines will be placed underground except where it can be shown that the lines can be hidden in existing tree cover, thereby minimizing removal of mature trees.
- Undergrounding transmission lines will not be used where implementation would constitute an adverse effect on sensitive habitats or sensitive species that would outweigh the reduction of visual effects.

Implementation of this measure will minimize the effects on existing visual quality and character that would result from removal and pruning of mature vegetation within proposed new transmission lines and access road routes. This measure will provide for a reduction in the number of trees and shrubs removed from installation of transmission lines and development of access roads.

Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and Sensitive Receptors

The BDCP proponents will install visual barriers between construction work areas and sensitive receptors to reduce the impact on sensitive receptors from the change in existing visual quality. Barriers will be placed to obscure views of work areas where construction activity and equipment would be disruptive and lower the existing visual quality. These efforts will include the following actions and performance standards.

- Visual barriers will be installed to minimize sensitive receptors (i.e., residents and recreational areas) views of construction work areas.
    - The visual barriers will be placed to protect residents and recreational areas that are located within 0.25 mile of a BDCP-related construction site.
    - The visual barrier may be chain link fencing with privacy slats, fencing with windscreen material, wood or concrete barrier/soundwall, or other similar barrier.
    - The visual barrier will be a minimum of 6 feet high to help to maintain the privacy of residents and block long-term ground-level views toward construction activities.

While the visual barriers would introduce a visual intrusion, they would greatly reduce the visual effects associated with visible construction activities and screening construction activities and protecting privacy is deemed desirable. The visual barriers are an effective means of reducing the visibility of active construction work areas, thereby minimizing the impact on existing localized visual quality.

Mitigation Measure AES-1c: Develop and Implement a ~~Spoil/Borrow~~Tunnel Work and Reusable Tunnel Material Area Management Plan

The BDCP proponents will develop and implement a tunnel work~~spoil/borrow~~ and RTM area management plan consistent with the "Disposal and Reuse of Spoils, RTM, and Dredged Material," in Appendix 3B, *Environmental Commitments*, to reduce the extent of negative visual alteration of existing visual quality or character of spoil, and especially borrow, sites from construction through remediation of terrain, revegetation, and other practices as described below. The purpose of this measure is to prevent flattened, highly regular, or engineered slopes which create visual discordance and incongruence from native topography and to re-establish natural looking vegetative communities that are indigenous to the project environment. The exception to grading flattened, regular sites is if the intended use of the site is agriculture. This mitigation measure will complement and is related to activities described under Mitigation Measure SOILS-2b, Chapter 10, *Soils*.

Prior to construction mobilization, the BDCP proponents will develop a management plan that identifies site-specific measures to remediate exposed soil and terrain to make it suitable for planned development, agriculture, or reuse as natural habitat and to mitigate visual effects. Existing information, such as topographical maps, vegetative surveys or records, and historical and existing photographs, that show preexisting, site-specific (or reference site) conditions prior to the conversion to agriculture will be evaluated and used as tools for restoring disturbed sites. Where appropriate in light of the planned long-term uses of reclaimed sites, the management plan will incorporate recreational or mixed uses. In general, however, the majority of the sites will be evaluated for restoration to native habitat due to the amount of terrain alteration and vegetation and habitat loss resulting from construction of the water conveyance facilities. At a minimum, the management plan will meet the following performance standards.

- All plantings will be native and indigenous to the area, and no invasive plant species will be used under any conditions.
- In areas to be used for agriculture, the management grading plan will mimic the preexisting landform pattern to the greatest degree possible, given geotechnical constraints.
- In areas of habitat restoration, the terrain will be designed and graded to be undulating, avoiding large, flat-sloped areas.
- In areas of proposed development, a combination of terrains may be implemented to encourage visual variety.
- All terrain will be designed and graded to be rounded, avoiding sharp angles and steep or abrupt grade breaks.
- Special attention will be paid to transitions between undisturbed and disturbed terrains to ensure that the transition appears as natural as possible and to blend the lines between the two for a natural, organic appearance.

- In addition, the site will be visually surveyed prior to any vegetation removal for the presence of rock outcroppings, downed trees, or similar features.
- Features such as live and downed trees salvaged during site preparation and excavation activities will be placed to mimic natural patterns during management to provide visual congruity once revegetation plantings mature and to restore the habitat values they provide.

Implementation of this measure would be expected to result in successful management of ~~borrow/spoils~~tunnel work and RTM areas, thereby reducing the overall impact on the visual quality in the study area.

Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned

The BDCP proponents will restore barge unloading facility sites will to preconstruction conditions once the facilities are decommissioned and removed to minimize the impact on visual quality and character at these sites. Restoration of the decommissioned sites will meet the following performance standards.

- All disturbed terrain will be restored.
- Replacement plantings will be installed in areas where vegetation was removed.
    - All replacement plantings will be native and indigenous to the area.
    - No invasive plant species will be used under any conditions.

Implementation of this measure will result in restoration of the barge unloading facility sites.

Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the Extent Feasible

The BDCP proponents will use aesthetic design treatments, where and to the extent feasible, to minimize the impact on existing visual quality and character in the study area associated with the introduction of water conveyance structures.

The BDCP proponents will evaluate similar, local well-designed water conveyance structures, including those with historic value and use these features as design precedent to develop designs for the intake facilities, pumping plants, control structures, fish screens, operable barriers, and bridges, so that the resultant design will complement the natural landscape, be aesthetically pleasing, and minimize the effects of visual intrusion of the BDCP facilities on the landscape, to the extent feasible.

Where no local design precedent exists, the BDCP proponents will research structure designs outside the local area. For example, the Freeport Regional Water Project intake facility design incorporates aesthetic design treatments that create a landmark feature in the landscape. The BDCP proponents will consider design details to ensure that all intake structures are complementary of one another so that these facilities do not create further visual discordance in the landscape.

The following minimum performance standards will apply.

- New structures will be painted with a shade that is two to three shades darker than the general surrounding area, unless aesthetic design treatments indicate another color selection with the intent to specifically improve aesthetics. Otherwise, colors shall be chosen

from the BLM Standard Environmental Colors Chart CC-001: June 2008. Because color selection will vary by location, the BDCP proponents, working with the facility designers, will employ the use of color panels evaluated from key observation points during common lighting conditions (front versus backlighting) to aid in the appropriate color selection. The BDCP proponents will select colors for the coloring of the most prevalent season. Panels will be a minimum of 3 by 2 feet in dimension and will be evaluated from various distances, but within 1,000 feet, to ensure the best possible color selection. Refer to http://www.blm.gov/bmp for more information on this technique and other best management practices and techniques for visual screening.

  - All paints used for the color panels and structures will be color matched directly from the physical color chart, rather than from any digital or color-reproduced versions of the color chart.
  - Paints will be of a dull, flat, or satin finish only. Appropriate paint type will be selected for the finished structures to ensure long-term durability of the painted surfaces.
  - The BDCP proponents will maintain the paint color over time.

- These methods will also be applied to transmission poles and chain link fencing.
  - Transmission poles and towers, including substations, will be painted or powder coated with colors selected using the BLM selection techniques to make the structures recede into the visual landscape.
  - Chain link fences will be plastic or vinyl coated with colors selected using the BLM selection techniques to make chain link fences to appear more see-through than non-treated, light grey fencing that acts as a visual barrier to a degree.
  - Finishes will be selected for their ability to achieve the correct color selection, durability, and environmental safety.
- The BDCP proponents will implement aesthetic design features at concrete or shotcrete structures that are highly visible to the public. These features may include mimicking natural material (e.g., stone or rock surfacing) and integral color, in the same theme, to reduce visibility and to better blend with the landscape.
- The BDCP proponents will evaluate bridge crossing designs using lattice steel, consistent with other bridges in the Delta. Such a structure would be less visually confining than concrete structures, provide better visual access to points beyond, allow light to travel through the structure, and may appear less like a visual barrier within the landscape.
- The BDCP proponents will ensure that visible pipelines, guardrails, and signs will be of a material or color that helps surfaces to blend better with the surroundings. These elements will be constructed with low-sheen and non-reflective surface materials to reduce potential for glare, and the use of glossy paints or surfaces would be avoided.

Implementation of this measure and application of the aesthetic design treatments for alternative structure would help minimize the impact on visual quality from the development of the water conveyance structures in the study area, using techniques that serve to make the structures blend into the surrounding environment, to the extent possible. However, the overall change in visual character would still be substantial because physical structures of this scale do not presently exist.

Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities

The BDCP proponents will locate concrete batch plants and fuel stations away from sensitive visual resources (i.e., state scenic highways) and receptors to minimize the impact on visual quality. In addition, these sites will be restored after construction to minimize the long-term impact on localized visual character. The relocation approach for the individual facilities is described below. The BDCP proponents will incorporate these facility location changes into the design plans prior to construction.

- Relocate the concrete batch plants and fuel stations that are proposed to be adjacent to SR 160, north of Intake 2, so that these operations are set back from the state scenic highway. These features will be located toward the east side of the intake, in closer proximity to the shaft site.
- In addition, the structures and storage piles associated with the concrete batch plants and fuel stations on Tyler and Bacon Islands will be set as far west from the North Mokelumne and Middle Rivers, as possible. The same principles will be applied to the concrete batch plants and fuel stations along the canal alignment just south of Snodgrass Slough and on Webb Tract north of False River.
- Structures and storage piles associated with the concrete batch plants and fuel stations east of Byron Highway will be set back off of the highway as much as possible and toward the northern edge of the proposed sites. The same principles will be applied to the concrete batch plant and fuel station along Willow Point Road.
- Relocate the concrete batch plant and fuel station proposed between Intakes 3 and to an arrangement opposite each other along the agricultural access road, instead of adjacent to one another. They will be placed in closer proximity to the existing development at this location so that they appear to be more of a continuation of existing development.
- There are no suggested changes for the concrete batch plants and fuel stations to be located 1 mile south of the SR 84/SR 220 junction or along the canal alignment approximately 1 mile north of the Byron Highway.
- All concrete batch plant and fuel station sites will be restored to preconstruction conditions once the facilities are decommissioned and removed.
- All disturbed terrain will be restored.
- Replacement plantings will be installed in areas where vegetation was removed.
    - All replacement plantings will be native and indigenous to the area or will match surrounding agricultural plantings.
    - No invasive plant species will be used under any conditions.

Implementation of this measure will minimize the impact on visual quality from the construction and use of the concrete batch plant and fuel station facilities. In addition, this measure will help restore the concrete batch plant and fuel station locations to a preconstruction condition.

Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project Landscaping Plan

The BDCP proponents will apply additional landscape treatments and use best management practices as part of implementing the project landscaping plan (as set forth by DWR's WREM No. 30a requirements) to restore and maintain local character, improve aesthetics, and reduce the visual scale of the proposed water conveyance elements in the study area.

In addition to the guidance set forth in DWR's WREM No. 30a, *Architectural Motif, State Water Project,* the BDCP proponents will utilize landscaping treatments to visually enhance key gateways, major thoroughfares, and scenic roadway corridors by using the following: street trees, welcome signs, decorative lighting, and other streetscape design techniques. In addition, native trees, shrubs, and grasslands will be planted to preserve the visual integrity of the landscape, provide habitat conditions suitable for native vegetation and wildlife, and ensure that a maximum number and variety of well-adapted plants are maintained.

The following practices will be adhered to in implementing the project landscaping plan.

- Design and implement low impact development (LID) measures that disperse and reduce runoff by using such features as vegetated buffer strips between paved areas that catch and infiltrate runoff, bioswales, cisterns, and detention basins. In addition, the BDCP proponents will evaluate the potential use of pervious paving to improve infiltration and to reduce the amount of surface runoff from entering waterways and the stormwater system. However, LID measures will not be used where infiltration could result in adverse environmental effects.
- Vegetative accents and screening will be used to aid in a perceived reduction in the scale and mass of the built features, while accentuating the design treatments that will be applied to built features. Plant selection will be based on its ability to screen built features and provide aesthetic accents.
- Realignments of SR 160 and South River Road will be landscaped in a manner that visually ties the new alignment in to the old alignment by implementing roadside landscaping that helps achieve a continuation of the existing roadside vegetation while screening built features.
- Landscape berms, combined with tree and shrub plantings will be used to help screen built features from existing viewpoints by allowing for additional height. The landscape berms will be constructed in a manner that has a more natural form, as opposed to one that is highly regular and levee-like. The berms will be seeded with a native meadow erosion control seed mix and be planted to comply with directions set forth below.
    - One hundred percent of the species composition of open space areas will reflect species that are native and indigenous to the study area. The species list will include trees, shrubs, and an herbaceous understory of varying heights, as well as both evergreen and deciduous types. Plant variety will increase the effectiveness of revegetated areas by providing multiple layers, seasonality, diverse habitat, and reduced susceptibility to disease.
- The use of native grass and wildflower seed in erosion control measures will be required where such a measure would improve aesthetics.

  - Wildflowers will provide seasonal interest to areas where trees and shrubs are removed or grading has occurred.
  - Species will be chosen that are native and indigenous to the area and for their appropriateness to the surrounding habitat. For example, upland grass and wildflower species will be chosen for drier, upland areas and wetter grass species will be chosen for wetland areas.
  - If not appropriate to the surrounding habitat, wildflowers will not be included in the seed mix.
  - Under no circumstances will invasive plant species be used in any erosion control measures.
- Under no circumstances will any invasive plant species be used at any location.
- Vegetation will be planted within 2 years following project completion.
- Design of the landscaping plan will maximize the use of planting zones that do not need irrigation, such as seeding with a native grassland and wildflower meadow mix, which reduces or eliminates the need for a permanent irrigation system.
- If an irrigation system is required, an irrigation and maintenance program will be implemented during the plant establishment period and carried on, as needed, to ensure plant survival. Areas that are irrigated will use a smart watering system that evaluates the existing site conditions and plant material against weather conditions to avoid overwatering of such areas. To avoid undue water flows, the irrigation system will be managed in such a manner that any broken spray heads, pipes, or other components are fixed within 1–2 days, or the zone or system will be shut down until it can be repaired.
- All measures prescribed above to screen facilities will not act to degrade or eliminate scenic vistas or be designed in a manner that negatively affects views from scenic roadways.
- These measures will not be implemented where implementation would constitute an adverse effect on sensitive habitats or sensitive species.

Implementation of this measure will reduce the effects on local visual quality from introduction of the water conveyance facilities.

Impact AES-2: Permanent Effects on a Scenic Vista from Presence of Conveyance Facilities

***NEPA Effects*:** Scenic vistas are mapped and included in Appendix Figure 17D-1. Once built, permanent access roads and shaft sites would not adversely affect views available from scenic vistas. Permanent access roads generally follow ROWs that have already previously been cleared to serve as agricultural access routes and would be improved for BDCP-related activities. Because the permanent access routes follow preexisting routes, they would not result in perceived visual changes from scenic vistas.

Shaft sites would be located at Intakes 2, 3, and 5; the intermediate forebay; and pumping plant and would appear to be a part of those features. Following completion of construction, shaft site pads would ~~only have low-profile access hatches to the tunnels that would be close to the ground surface~~ remain in place and could be seen from vistas along Lambert Road (KOP 86), ~~Twin Cities Road (KOPs 115 and 257 [Figure 17-87]), Walnut Grove~~North Staten Island Road (KOP 258), SR 12 (KOP 98), and SR 4. Under Alternative 4, the shaft ~~hatch~~ site~~s~~ hatches could be larger than under

Alternative 1A; however, the view of the site after construction would not differ substantially. Mitigation Measure AES-1e is available to address this effect.

The primary features that would affect scenic vistas subsequent to completion of construction of Alternative 4 are Intakes 2, 3, and 5, the intermediate forebay and expanded Clifton Court Forebay, the pumping plant, landscape effects remaining from ~~spoil/borrow~~tunnel work and RTM areas, and permanent transmission lines. These features would introduce visually dominant and discordant features in the foreground and middleground views in vistas that would be very noticeable to all viewer groups. Scenic vistas that would be affected are primarily views from roadways on levees and bridges that offer elevated vantages and views that extend from the foreground to the background of the surrounding landscape in areas with low to high landscape sensitivity levels. In addition, scenic vistas are available from ground-level views where vegetation, infrastructure, and atmospheric haze do not limit and preclude such views. Alternative 4 would result in a very noticeable effect on viewer experiences from scenic vista opportunities along public roads (SR 160 and CH E9). In addition, the pumping plant would be very visible to residents accessing Kings Island via Clifton Court Road that would have a direct line of site toward the facility. Major landform alterations would occur and ~~A~~all facilities would require removal of visually important features such as mature trees and shrubs and agricultural land, which are scenic elements that contribute to the viewing experience from scenic vistas.

Intakes 2, 3, and 5 would introduce large, industrial concrete and steel intake structures, large intake landforms, ~~pumping plants~~sedimentation basins, ~~surge towers~~ landscaping, fencing, and other similar anthropogenic features and into rural vistas with riparian, riverine, and agricultural characteristics. KOPs falling within scenic vistas that could be affected by Intakes 2, 3, and 5 include KOPs 15, 18, 20, 34 (Figure 17-86a, b), and 45. Each intake facility would consist of the intake structure along the river, large sedimentation basins, ~~and the intake pumping plant~~storage buildings, fencing, perimeter landscaping, and ancillary site features. The intake structure on the river would be 1,259 or 1,667~~700-2,300~~ feet long (total structure length–intake and transitions) by 40~~–60~~ feet wide and rise 46 to 58~~55~~ feet from the river bottom to top of the structure. The ~~20-acre~~ intake ~~pumping plant~~ facility would be built on a ground plane that is elevated approximately 30 feet above the surrounding landscape to avoid flooding. The intake storage and electrical buildings are approximately one to one and a half stories tall~~pumping plants are 59 feet tall and surge towers would be 43-70 feet tall~~. ~~The design of the intakes and associated facilities could play a large part in helping to improve the quality of affected and degraded vista viewsheds.~~ Landscaping that would be incorporated into the facility would help to slightly improve views. As seen in Figure 17-85, *Existing and Simulated Views of Intake 2 East from South River Road*, the removal of a substantial amount of riparian vegetation along the east bank provides an unobscured view of the intake facility~~, pumping plant,~~ and associated features making the intake facility the prominent visual feature in the landscape. A substation would ~~also~~ be introduced at the intake facility where none presently exists. The intake storage and electrical buildings~~pumping plant~~ introduces ~~a large-scale building,~~structures that are scale to surrounding buildings and their darker coloring would help them recede into view~~similar in appearance to a warehouse facility, that is a focal point and visually discordant in scale and mass to the surrounding rural character~~. The large concrete intake~~It also~~ adds a monotone solid color mass and the red gantery cranes stand out in~~to~~ a landscape where the natural colors ~~of the landscape~~ are earth-tones and more muted. ~~The surge tower would be 100 feet in diameter and the top of the rim would be at 105 feet NAVD88 for Intake 2, making the tower 75 feet tall at this location because the pumping plant finished floor elevation would be at approximately 35 feet NAVD88.~~ Overall, the existing vista from KOP 256 on SR 160 toward Intake 2

would be substantially impaired by vegetation removal and introduction of the ~~pumping plant~~on-bank intake and the Scenic Quality Rating would be reduced from a **C** to an **F**. A reduction in the Scenic Quality Rating associated with Intake 2 is representative of the effects that could occur to other views associated with intakes through the removal of vegetation, obscuring and limiting views beyond the foreground, and introducing large industrial features into a rural landscape and this effect would be adverse (see discussions under 17.3.1.2 and 17.3.1.3).

As seen in Figure 17-86a, *Existing and Simulated Views of Intake 3 East from SR 160 in January 2012*, ~~the removal of~~ a substantial amount of riparian vegetation would be removed along the east bank opens up the vista and the large, raised intake landform would be~~but also increases the~~ visual~~ly prominence~~ prominent, but perimeter landscaping would aid in reducing the raised landform's apparent scale~~of the pumping plant in the landscape~~. However, the ~~The pumping plant introduces a~~ large, raised landform would still be~~building, similar in appearance to a warehouse facility, that is~~ a focal point and visually discordant in scale and mass to the surrounding rural character within the vista. The scale of the intake facility buildings are in keeping with existing surrounding buildings, and the darker coloring would help them to recede into view, but they would be located at a much higher elevation than surrounding buildings, on the large raised, human-made landform. ~~It also adds monotone solid color mass into a landscape where the natural colors of the landscape are earth-tones and more muted.~~ When compared to Figure 17-76a that shows Intake 3 East for Alternatives 1A, 1B, 2A, 2B, 6A, 6B, 7 and 8 (PTO alternatives), the intake pad would appear to be smaller because of the perimeter landscaping that reduces its apparent scale ~~be larger than~~ under this alternative than for the PTO alternatives and the exclusion of a pumping plant under this alternative decreases the magnitude of visual effects from this vantage, when compared to other PTO alternatives. In addition, because of the perimeter landscaping, the intake pad appears to be somewhat of a visual continuation of the SR 160 levee from this vantage and the intake buildings are not as noticeable because they are partially screened by trees. They would be more visible in the winter when trees are dormant. ~~In addition, the surge tower would be 100 feet in diameter and the top of the rim would rise above the pumping plant at 96 feet NAVD88 for Intake 3, making the tower 62 feet tall at this location because the pumping plant finished floor elevation would be at approximately 34 feet NAVD88 for this intake.~~ While steel 230 kV transmission lines would not be introduced under this alternative, there would be a substation that would also visible and would ~~further~~ add to the industrial look of the intake facilities and detract from the existing rural character. Overall, even with perimeter landscaping, the existing vista from KOP 34 (Figure 17-86a, b) on SR 160 toward Intake 3 would be substantially impaired by vegetation removal and introduction of the raised intake landform and associated structures~~pumping plant~~ and the Scenic Quality Rating would be reduced from a **D** to an **E**. A reduction in the Scenic Quality Rating associated with Intake 3 is representative of the effects that could occur to other vistas through the removal of vegetation, obscuring and limiting views beyond the foreground, and introducing large landforms and industrial features into a rural landscape and would be adverse (see discussions under 17.3.1.2 and 17.3.1.3). However, as shown in Figure 17-86b, *Existing and Simulated Views of Intake 3 East from SR 160 in July 2013*, fast-growing poplar or cottonwood trees that were newly planted in January 2012 have since grown and act to obscure large portions of the intake pad ~~and portions of the pumping plant surge tower,~~ and substation. While the substation would not be as noticeable, the large landform~~pumping plant and surge tower~~ would still be visually discordant in scale and mass to the surrounding rural character within the vista and the Scenic Quality Rating would be reduced from a **D** to an **E**. Note that, over time, the trees will continue to grow and views of Intake 3 from KOP 34 could be further limited.

Figure 17-77, *Existing and Simulated Views of Intake 2 West from SR 160*, shows an intake associated with the west alignment. While this simulation includes a pumping plant~~However~~, this view is representative of how an on-bank intake along the river under this alternative would look from CH E9 and could affect vista views from that roadway. The conversion of the riverbank that is grassy with riparian vegetation to the industrial looking on-bank intake is a stark visual and color contrast against the more natural colors and textures of a vegetated riverbank that is absent of structures. ~~The pumping plant introduces a large warehouse type of building that is a focal point and visually discordant in scale and mass to the surrounding rural character within the vista.~~ It also adds monotone solid color mass into a landscape where the natural colors of the landscape are earth-tones and more muted. The ~~pumping plant and~~ on-bank intake would ~~limit and~~ detract from the visual quality of vista views ~~beyond the foreground~~. The introduction of tall, steel 230 kV transmission lines visually contrasts to existing views of wooden utility poles. In addition, at a closer distance, views of available sky would be interrupted by the transmission lines and pumping plant. Overall, the existing vista from KOP 15 on SR 160 toward Intake 2 would be substantially impaired by vegetation removal and introduction of the intake~~pumping plant~~ and the Scenic Quality Rating would be reduced from a **C** to an **E**. A reduction in the Scenic Quality Rating associated with Intake 3 is representative of the effects that could occur to other vistas through the removal of vegetation, obscuring and limiting views beyond the foreground, and introducing large landforms and industrial features into a rural landscape, and this effect would be adverse (see discussions under 17.3.1.2 and 17.3.1.3).

Changes to vistas associated with the intakes would be more apparent the closer the viewer is in relation to the intake. As illustrated in the simulations above, the sedimentation basins and ground level views of whole intake facility (refer to Figures 3-19a and 3-20a) are not available from a distance. However, when viewers are in close proximity to the intake and intake facilities, primarily when traveling by on SR 160 or on the Sacramento River, they would have more direct and up close views of the facility, in its entirety. Instead of tilled or vegetated agricultural lands seen in vista views from SR 160, there would be large areas of pavement and visible features associated with the intake facility. The overall size of the intake and intake facility can be understood by comparing their sizes to the vehicles modeled in the Figure 3-19a rendering. On land, the perimeter of the facility would be fenced, with secured gate access from SR 160, but the sedimentation basins would be visible through this fencing that would limit vista views. In addition, the basins would be large-scale engineered water bodies with highly regular shapes and forms would draw attention toward them, detracting from the focus of vista views. While perimeter landscaping would help to reduce the apparent scale of the facility and improve project aesthetics, it would still act to limit vista views once it matures and this effect would be adverse.

Scenic vistas that would be affected by the intermediate forebay include those available from Twin Cities Road (KOPs 115 and 257 [Figure 17-87]). The intermediate forebay would be visible in the foreground from both of these scenic vistas, would encompass a ~~40~~243-acre ~~water surface~~ area, and include a control structure to channel water to the tunnels. While the water surface of the This forebay would not be visible, it would convert agricultural lands to a large, geometrically shaped levee embankment system that would conflict with the existing forms, patterns, colors, and textures associated with agricultural lands. However, the majority of views would be from the ground-level and would be of the berms that would prevent views of the water surface within the vista. As seen in Figure 17-87, *Existing and Simulated Views of Intermediate Forebay from Twin Cities Road*, the scenic vista across agricultural fields from Twin Cities Road is fairly open but contains existing transmission lines. As for Alternative 1A, under Alternative 4, the forebay embankments would be

tall enough to limit views of the tree line on the horizon. The intermediate forebay embankments would add a man-made visual massing and the embankments would have a visible geometric shape immediately adjacent to the roadway. Overall, the existing vista from KOP 257 on Twin Cities Road toward the intermediate forebay would alter and reduce the available views of agricultural lands and foreground views and would reduce the Scenic Quality Rating from an **E** to an **F**. This effect would be adverse when seen from Twin Cities Road. The expanded Clifton Court Forebay would have a similar or more prominent effect on scenic vistas available from Lindemann Road depending on location. Views from Lindemann Road that are closer to Herdlyn Road would be adversely affected because they would be in closer proximity to and would have more direct views of the forebay (KOP 107). The embankments would be prominent features that would replace agricultural fields and the water surface could be visible. Views from Lindemann Road that are closer to Rivers End Marina & Storage would be partially or fully obstructed by intervening roadside vegetation and infrastructure. The Clifton Court Forebay would be expanded by ~~700~~ 600 acres. However, while it would convert a large area of agricultural land, the forebay in this location would not an adverse effect on the landscape intermediate forebay due to the predominance of the existing adjacent Clifton Court Forebay and other water conveyance features.

The pumping plants at Clifton Court Forebay would affect foreground vista views seen by residents accessing Kings Island via Clifton Court Road and background vista views from the rolling foothills, Bethany Reservoir State Recreation Area, and California Aqueduct Bikeway that are located to the southwest. Viewers on Clifton Court Road would have a direct line of site toward the facility, which would be built on elevated landform directly west of West Canal and south of Kings Island. The proposed pumping plants would each be 85 feet tall, at the top of the domed roof, and 182 feet in diameter. The facility would receive perimeter landscaping similar to intake structures but it would take several years for plantings to mature and provide screening. Therefore, the pumping plant would draw focus and become a focal point in vista views from Clifton Court Road and would limit views beyond because of the elevated landform, large pumping plants, electrical stations, substation, water treatment plan, and other associated features. However, the darker coloring of the proposed pumping facility and distance would enable the pumping facility at Clifton Court Forebay to blend with the landscape and not stand out enough in the background to negatively affect vista views available from the foothills, recreation area, or bikeway. Effects to scenic vistas would be adverse because of the pumping plant facility would become a focal point in vista views available from Clifton Court Road and limit vista views from this vantage.

The tunnel work~~spoil/borrow~~ and RTM area north of Intake 2 along SR 160 (KOP 15~~),~~) and the RTM areas ~~south of Lambert Road and~~ north of Dierssen Road, north and south of Twin Cities Road (KOP 115), west of the intermediate forebay, and ~~on Staten Island,~~ south of SR 12 (KOP 98) would result in a contiguous, large-scale landscape effect that would be included within the scenic vistas available from adjacent roadways. Alterations at these locations would result in sunken or elevated landforms that would be introduced into a landscape that is currently predominantly flat. These features would be visually discordant with the area's existing forms, patterns, colors, and textures associated with views from scenic vistas of agricultural lands in the study area.

Planned and unplanned safe haven work areas would be in use only temporarily and then restored once maintenance is complete. Therefore, it is expected that there would no permanent adverse visual effects to scenic vistas associated with safe haven work areas. However, ~~S~~shaft sites would be visible within vistas including the shaft sites by the intakes, north of Lambert Road (KOP 86), ~~south of Walnut Grove Road (KOP 258),~~ and on Staten Island would result in alterations at these locations and would result in elevated landforms that would be introduced into a landscape that is currently

predominantly flat. These features would be visually discordant with the area's existing forms, patterns, colors, and textures associated with views from scenic vistas of agricultural lands in the study area. Shaft sites located south of SR 12 (KOP 98) and north of SR 4 would have the same ~~affect~~effect; however, these would mostly be visible to roadway users on local roadways, and views of construction activities would be fleeting as travelers on these roadways travel by the site. Construction activities associated with the shaft sites may constitute an adverse effect on visual resources due to the physical introduction of these features and the duration of time that they would be visible in the landscape. Once construction is completed, the shaft site construction pads would ~~be removed~~remain in place and the launch and retrieval shafts would be covered with earth. This effect would be adverse.

Construction of permanent access road would not generally affect scenic vistas. However, the intersection improvement along SR 12 would introduce a new transportation structure that would limit views beyond when traveling in either direction. Because the terrain is very flat, the bridge would obscure views of Mount Diable on approach to the bridge when traveling west, and this would constitute an adverse effect on scenic vistas.

Most of the transmission lines would follow access roads constructed for the BDCP conveyance facilities or other existing access roads and roadways that are outside the immediate area (KOPs 15 ~~[Figure 17-77]~~, 16, 18, 19, 20, 26, 30, 34 ~~[Figure 17-86a,b]~~, 41, 42, 49, 54, 72, 73, 74, 86, 98, ~~101,~~ 103, 106, 107, ~~115, 254, 255~~257 ~~[Figure 17-87]~~, and 258). Once the proposed 230 kV electrical power transmission lines are constructed, tall steel lattice structures that would be highly visible landscape features would contrast strongly with their surroundings. The 69 kV electrical power transmission lines would also be larger than wood-poled transmission lines commonly seen in the Delta. While wood-poled transmission lines are part of most existing views, new 69 and 230 kV transmission lines and their cleared ROWs would adversely affect the existing visual character by introducing large towering structures in a linear pattern that appear to march through the landscape.

~~The~~ Besides the SR 12 intersection bridge, the effects of permanent access roads on scenic vistas would not be adverse. The effects of shaft site pads and access hatches on scenic vistas could be adverse. The large scale of intakes and intake landforms, the visual presence of large-scale tunnel work~~borrow/spoil~~ and RTM area landscape effects, the new operable barrier at the head of Old River, and the presence of new transmission lines may result in adverse effects on scenic vistas. Overall, effects on scenic vistas associated with Alternative 4 would be adverse. Mitigation Measures AES-1a, AES-1c, and AES-1e are available to address these effects.

***CEQA Conclusion*:** Because proposed permanent access roads generally follow existing ROWs, they would have less-than-significant impacts on scenic vistas. The presence of the intake structures and landforms, pumping plants, ~~surge towers,~~ large-scale ~~borrow/spoil~~tunnel work and RTM area landscape effects, shaft sites, and transmission lines would result in significant impacts on scenic vistas because construction and operation would result in a reduction in the visual quality in some locations and introduce dominant visual elements that would result in noticeable changes in the visual character of scenic vista viewsheds in the study area. These changes would not blend, would not be in keeping or would be incompatible with the existing visual environment, and could be viewed by sensitive receptors or from public viewing areas.

Mitigation Measure AES-1a, AES-1c, and AES-1e would partially reduce these impacts by locating new transmission lines and access routes to minimize the removal of trees and shrubs and pruning needed where feasible, developing and implementing a ~~spoil/borrow~~tunnel work and RTM area

management plan, and applying aesthetic design treatments to all structures to the extent feasible. Impacts on scenic vistas associated with structures would not be reduced to a less-than-significant level because even though mitigation measures would reduce some aspects of the impact, ~~it is not certain the mitigation would~~mitigation would not reduce the level of the impact to less than significant in all instances. In addition, the size of the study area and the nature of changes introduced by the alternative would result in permanent changes to the regional landscape such that there would be noticeable to very noticeable changes that do not blend or are ~~not in keeping with the existing visual environment~~not in keeping with the existing visual environment based upon the viewer's location in the landscape relative to the seen change. Thus, impacts on scenic vistas associated with Alternative 4 would be significant and unavoidable.

Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible

Please refer to Mitigation Measure AES-1a under Impact AES-1.

Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel Material Area Management Plan

Please refer to Mitigation Measure AES-1c under Impact AES-1.

Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the Extent Feasible

Please refer to Mitigation Measure AES-1e under Impact AES-1.

Impact AES-3: Permanent Damage to Scenic Resources along a State Scenic Highway from Construction of Conveyance Facilities

***NEPA Effects*:** Conveyance facilities under Alternative 4 would result in an overall noticeable effect on viewers relative to their current experience and enjoyment of the study area's scenic resources along SR 160 and River Road, where the landscape sensitivity level is high (KOPs 15, 18, 20, 34 [Figure 17-86a, b], 45, and 54). All three intakes (2, 3, and 5), and the ~~spoils/borrow~~tunnel work and RTM area north of Intake 2 would be immediately and prominently visible in the foreground from SR 160, including construction activities described in Impact AES-1. These conveyance facility components would introduce visually dominant and discordant features into vistas, and these elements would be very noticeable to all viewer groups.

As seen in Figure 17-85, *Existing and Simulated Views of Intake 2 East from South River Road*, the removal of a substantial amount of riparian vegetation along the east bank provides an unobscured view of the intake facility, ~~pumping plant,~~ and associated features making the intake facility the prominent visual feature in the landscape. A substation would ~~also~~ be introduced at the intake facility where none presently exists. The intake storage and electrical buildings~~pumping plant~~ introduces structures that are ~~a large-scale building~~, similar in scale to surrounding buildings and their darker coloring would help them recede into view~~appearance to a warehouse facility, that is a focal point and visually discordant in scale and mass to the surrounding rural character~~. The large concrete intake~~It also~~ adds a monotone solid color mass and the red gantery cranes stand out in~~to~~ a landscape where the natural colors ~~of the landscape~~ are earth-tones and more muted. ~~The surge tower would be 100 feet in diameter and the top of the rim would be at 105 feet NAVD88 for Intake~~

~~2, making the tower 75 feet tall at this location because the pumping plant finished floor elevation would be at approximately 35 feet NAVD88.~~ Overall, the existing vista from KOP 256 on SR 160 toward Intake 2 would be substantially impaired by vegetation removal and introduction of the on-bank intake~~pumping plant~~ and the Scenic Quality Rating would be reduced from **C** to an **F**. A reduction in the Scenic Quality Rating associated with Intake 2 is representative of the effects that could occur to other views associated with intakes through the removal of vegetation, obscuring and limiting views beyond the foreground, and introducing large industrial features into a rural landscape and this effect would be adverse (see discussions under 17.3.1.2 and 17.3.1.3).

As seen in Figure 17-86a, *Existing and Simulated Views of Intake 3 East from SR 160 in January 2012*, ~~the removal of~~ a substantial amount of riparian vegetation would be removed along the east bank and the large, raised intake landform would be~~acts to increase the~~ visual~~ly~~ ~~prominence~~ prominent of ~~the pumping plant~~ in the landscape, but perimeter landscaping would aid in reducing the raised landform's apparent scale. ~~In Figure 17-77, the pumping plant has the same visual effect as shown in Figure 17-86a because it introduces a large-scale building, similar in appearance to a warehouse facility, that is a focal point and visually discordant in scale and mass to the surrounding rural character.~~ The scale of the intake facility buildings are in keeping with existing surrounding buildings, and the darker coloring would help them to recede into view, but they would be located at a much higher elevation than surrounding buildings, on the large raised, human-made landform. ~~It also adds monotone solid color mass into a landscape where the natural colors of the landscape are earth-tones and more muted.~~ When compared to Figure 17-76a that shows Intake 3 East for Alternatives 1A, 1B, 2A, 2B, 6A, 6B, 7 and 8 (PTO alternatives), the intake pad would appear to be smaller because of the perimeter landscaping that reduces its apparent scale~~be larger than~~ under this alternative than for the PTO alternatives and the exclusion of a pumping plant under this alternative decreases the magnitude of visual effects from this vantage, when compared to other PTO alternatives. In addition, because of the perimeter landscaping, the intake pad appears to be somewhat of a visual continuation of the SR 160 levee from this vantage and the intake buildings are not as noticeable because they are partially screened by trees. However, the large, raised landform would be still a focal point and visually discordant in scale and mass to the existing SR 160 levee and the surrounding rural character within the vista. The intake facility would be more visible in the winter when trees are dormant. ~~In addition, the surge tower would be 100 feet in diameter and the top of the rim would rise above the pumping plant at 96 feet NAVD88 for Intake 3, making the tower 62 feet tall at this location because the pumping plant finished floor elevation would be at approximately 34 feet NAVD88 for this intake.~~ While steel 230 kV transmission lines would not be introduced under this alternative, there would be a substation that would also be visible and would ~~further~~ add to the industrial look of the intake facilities and detract from the existing rural character. Overall, even with perimeter landscaping, existing views from KOP 34 on SR 160 toward Intake 3 would also be substantially impaired by vegetation removal and introduction of the ~~pumping plant~~ raised intake landform and associated structures and the Scenic Quality Rating would be reduced from a **D** to an **E**. A reduction in the Scenic Quality Ratings associated with Intake 3 is representative of the effects that would occur as a result of all intakes on SR 160 at each location through the removal of vegetation, obscuring and limiting views beyond the foreground, and introducing large landforms and industrial features into a rural landscape and this effect would be adverse (see discussions under 17.3.1.2 and 17.3.1.3). However, as shown in Figure 17-86b, *Existing and Simulated Views of Intake 3 East from SR 160 in July 2013*, fast-growing poplar or cottonwood trees that were newly planted in January 2012 have since grown and act to obscure large portions of the intake pad ~~and portions of the pumping plant surge tower,~~ and substation. While the substation would not be as noticeable, the large landform ~~pumping plant and surge tower~~ would still be

visually discordant in scale and mass to the surrounding rural character within the vista and the Scenic Quality Rating would be reduced from a **D** to an **E**. Note that, over time, the trees will continue to grow and views of Intake 3 from KOP 34 could be further limited. While trees would obscure some of the views along SR 160, such as at this location, they would not do so for the entire scenic corridor.

In addition, visual changes associated with the intakes would be more apparent the closer the viewer is in relation to the intake. SR 160 would be realigned approximately 175 to 215 feet further inland at the intakes, removing direct views of the river and riparian vegetation, and altering the riverine visual experience that SR 160 is noted for. As illustrated in the simulations above, the sedimentation basins and ground level views of whole intake facility and its associated site features (refer to Figures 3-19a and 3-20a) are not available from a distance. However, when viewers traveling on SR 160 are in close proximity to the intake and intake facilities, they would have more direct and up close views of the facility, in its entirety. The overall size of the intake and intake facility can be understood by comparing their sizes to the vehicles modeled in the Figure 3-19a rendering. The perimeter of the facility would be fenced, with secured gate access from SR 160, but the sedimentation basins would be visible through this fencing. The tops of the sedimentation basins have larger dimensions than the bottoms, which measure 660 feet long, making the visible water surface area of the basins wider than the Sacramento River. In addition, the basins would be engineered water bodies with highly regular shapes and forms associated with them. Therefore, the sedimentation basins would introduce very large, visually contrasting human-made waterbodies into a landscape where the forms of existing waterways, such as the river and nearby sloughs, are much more organic. In addition, instead of tilled or vegetated agricultural lands, there would be large areas of pavement, storage buildings, drying basins, cranes, a substation, and other site features that would appear very industrial. Perimeter landscaping would help to reduce the apparent scale of and soften views associated with the facility; however, it would take several years for landscaping to mature enough to provide benefit and the facility would still be very large in comparison to existing development within this rural landscape, and this effect would be adverse. Therefore, ~~E~~each intake would result in an adverse visual effect on views from SR 160 and adverse effects on SR 160 would be substantially compounded by the presence of each additional intake to dramatically alter views associated with SR 160.

The ~~spoils and borrow~~ tunnel work and RTM areas near Intake 2 would be visible from SR 160 and result in the removal of mature vegetation and topographical changes to areas that are presently flat. Once construction of the BDCP facilities is complete, these areas would result in a large-scale landscape effect that would also alter the agrarian visual character. Alterations at these locations would result in sunken or elevated landforms introduced into a landscape that is currently predominantly flat. These features would be visually discordant with the area's existing forms, patterns, colors, textures associated with the existing agrarian character in the study area. Accordingly, tunnel work~~spoil and borrow~~ and RTM areas would result in an adverse effect on visual resources.

Implementation of this alternative would require removal of visually important features such as mature trees and shrubs and agricultural land, which are scenic elements that contribute to the viewing experience available to travelers along scenic highways in the study area. These features would be replaced by ~~multi-story~~ industrial concrete and steel structures, multiple-acre mounds of dirt, earthen embankments, and paved areas associated with the intake facilities, large-scale sedimentation basins, ~~pumping plants elevated~~intake landforms that are 30 feet above the surrounding ~~landscaping~~landscape, fencing and security lights, a substation and cranes, and new

access roads. These visual elements would conflict with the existing forms, patterns, colors, and textures along River Road and SR 160; would dominate riverfront views available from SR 160; and would alter broad views and the general nature of the visual experience presently available from River Road and SR 160 and would result in adverse effects. Mitigation Measures AES-1a, AES-1c, and AES-1e are available to address these adverse effects.

***CEQA Conclusion*:** Because visual elements associated with this alternative would conflict with the existing forms, patterns, colors, and textures along River Road and SR 160; would dominate riverfront views available from SR 160; and would alter broad views and the general nature of the visual experience presently available from River Road and SR 160 (thereby permanently damaging the scenic resources along a scenic highway), these impacts are considered significant. Mitigation Measures AES-1a, AES-1c, and AES-1e would help reduce these impacts through the application of aesthetic design treatments to all structures, to the extent feasible. However, impacts on visual resources resulting from damage to scenic resources that may be viewed from a state scenic highway would not be reduced to a less-than-significant level because even though mitigation measures would reduce some aspects of the impact, ~~it is not certain the mitigation would~~mitigation would not reduce the level of the impact to less than significant in all instances. In addition, the size of the study area and the nature of changes introduced by the alternative would result in permanent changes to the regional landscape such that there would be noticeable to very noticeable changes to the visual character of a scenic highway viewshed that do not blend or are ~~not in keeping with the existing visual environment~~not in keeping with the existing visual environment based upon the viewer's location in the landscape relative to the seen change. Thus, overall, this impact would be significant and unavoidable.

Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible

Please refer to Mitigation Measure AES-1a under Impact AES-1 in the discussion of Alternative 1A.

Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel Material Area Management Plan

Please refer to Mitigation Measure AES-1c under Impact AES-1 in the discussion of Alternative 1A.

Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the Extent Feasible

Please refer to Mitigation Measure AES-1e under Impact AES-1.

Impact AES-4: Creation of a New Source of Light or Glare That Would Adversely Affect Views in the Area as a Result of Construction and Operation of Conveyance Facilities

NEPA Effects: The following NEPA effects would result from the introduction of new sources of daytime and nighttime glare and nighttime lighting.

Daytime and Nighttime Glare

BDCP conveyance facilities would result in new sources of glare if they were made of materials that easily reflect light. Intakes 2, 3, and 5 and their associated pumping plants, surge towers, and facilities would create very noticeable effects relating to light and glare. Alternative 4 would result in a reduced amount of new sources of light or glare relative to Alternative 1A because there would only be three intakes instead of five, and there would not be a pumping plant at the intermediate forebay. The effects are illustrated in the simulations showing intake facilities in Figures 17-~~76~~ 85 ~~through~~ and 17-~~78~~86, where ~~light~~ darker building colors ~~over a large surface area~~ would help to reduce the reflectiveness ~~off~~ of those surfaces. In addition ~~and~~, ~~increase glare, especially when combined with the~~while ~~removal of~~ vegetation that absorbs light, provides shade, and screens glare would be removed, perimeter landscaping would be installed to offset the effects of vegetation removal. The amount of glare associated with surfaces would be increased if highly glossy paints or surface treatments or highly reflective materials are used, compared to satin or flat paints or surface treatments or materials that are less reflective. Sunlight would reflect off the new water surfaces of the large-scale sedimentation basins shown in the Figure 3-19a rendering. The tops of the sedimentation basins have larger dimensions than the bottoms, which measure 660 feet long, making the visible water surface area of the basins wider than the Sacramento River and creating a new source of substantial glare where none presently exists. Sunlight would reflect off the new water surfaces of the forebays, creating new sources of glare where none presently exists. In addition, the use of nighttime lighting, described below, would result in nighttime glare of the lights reflecting off water surfaces. Because there are a large number of viewers in and around the waterways, intake structures, sedimentation basins, and forebay, effects associated with glare are considered adverse. Conversely, as vegetation and waterfowl become established following completion of the new forebays, some of these net visual impacts may be diminished.

Nighttime Lighting

Construction of each intake structure would take up to 4 years to complete and the pumping plant facility would take up to 12 years to complete, and construction would occur Monday through Friday for up to 24 hours per day. As discussed in Impact AES-1, dewatering near intakes, pumping plants, and certain pipeline construction areas and north of the intermediate forebay would take place 7 days per week and 24 hours per day. If evening and nighttime construction activities take place, they would require the use of extremely bright lights, and this would negatively affect nighttime views of and from the work area. Nighttime construction could also result in headlights flashing into nearby residents' homes when construction vehicles are turning onto or off of construction access routes. ~~Proposed surge towers would require the use of safety lights that would alert low-flying aircraft to the presence of these structures because of their height.~~

Establishment of BDCP facilities in the Delta would require the use of safety lighting once built. Lighting equipment associated with BDCP facilities would increase the amount of nighttime lighting in the Delta above existing ambient light levels. In particular, security lighting for the intakes and their associated pumping plants and facilities would create very noticeable effects relating to increased nighttime light at those locations. As described in Chapter 3, *Description of Alternatives*, lighting would be designed in accordance with guidance given by DWR's WREM No. 30a, *Architectural Motif, State Water Project* and through coordination with local agencies through an architectural review process. This guidance is set forth as follows.

> All artificial outdoor lighting is to be limited to safety and security requirements. All lighting is to provide minimum impact on the surrounding environment and is to be shielded to direct the light

only towards objects requiring illumination. Lights shall be downcast, cut-off type fixtures with non-glare finishes set at a height that casts low-angle illumination to minimize incidental spillover of light onto adjacent properties, open spaces or backscatter into the nighttime sky. Lights shall provide good color rendering with natural light qualities with the minimum intensity feasible for security, safety and personnel access. All outdoor lighting will be high pressure sodium vapor with individual photocells. Lighting will be designed per the guidelines of the IES. Additionally, all lights shall be consistent with energy conservation and are to be aesthetically pleasing. Lights will have a timed on/off program or will have daylight sensors. Lights will be programmed to be on whether personnel is present or not.

Although the lighting would be designed to be shielded and oriented in such a manner as not to subject the immediate surroundings to extremes in the levels of light, these types of light generate an ambient nighttime luminesce that is visible for substantial distances from a large portion of the Delta. This glow contrasts with the rural character. Such a change would be particularly noticeable in rural areas where ambient light levels are currently low and there are nearby viewers. Because the study area currently experiences low levels of light because there are fewer light/glare producers than are typical in urban areas, and because there are a larger number of viewers in and around the waterways, intake structures, and intermediate forebay, effects associated with nighttime light are considered adverse. Mitigation Measures AES-4a through AES-4c are available to address these effects.

***CEQA Conclusion*:** The impacts associated with light and glare under Alternative 4 are significant because there are a larger number of viewers in and around the waterways, intake structures, the pumping plant facility, and ~~intermediate~~ forebays; BDCP facilities would increase the amount of nighttime lighting in the Delta above existing ambient light levels; and the study area currently experiences low levels of light because there are fewer light/glare producers than are typical in urban areas. Mitigation Measures AES-4a through AES-4c would help reduce these impacts by limiting construction to daylight hours within 0.25 mile of residents, minimizing fugitive light from portable sources used for construction, and installing visual barriers along access routes, where necessary, to prevent light spill from truck headlights toward residences; however, these mitigation measures would not reduce impacts to a less-than-significant level because even though mitigation measures would reduce some aspects of the impact, ~~it is not certain the mitigation would~~mitigation would not reduce the level of the impact to less than significant in all instances. In addition, the size of the study area and the nature of changes introduced by the new light and glare sources would result in permanent changes to the regional landscape such that there would be noticeable changes to the visual character that do not blend or are ~~not in keeping with the existing visual environment~~not in keeping with the existing visual environment based upon the viewer's location in the landscape relative to the seen change. Thus, the new sources of daytime and nighttime light and glare associated with Alternative 4 would result in significant and unavoidable impacts on public views in the project vicinity.

Mitigation Measure AES-4a: Limit Construction to Daylight Hours Within 0.25 Mile of Residents

The BDCP proponents will minimize the effect of nighttime construction light and glare on nearby residences by limiting construction hours within 0.25 mile of residents.

- Construction activities scheduled to occur between 7 a.m. or 7 p.m. will not take place before or past daylight hours (which varies according to season) within 0.25 mile of sensitive residential receptors.

Implementation of this mitigation measure will eliminate use of high-wattage lighting sources to operate in the dark and would minimize introduction of new nighttime light and glare sources in these areas to the extent feasible.

Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for Construction

The BDCP proponents will minimize fugitive light from portable lighting sources used during construction by adhering to the following practices.

- At a minimum, project-related light and glare will be minimized to the maximum extent feasible, given safety considerations.
- Color-corrected halide lights will be used.
- Portable lights will be operated at the lowest allowable wattage and height and will be raised to a height no greater than 20 feet.
- All lights will be screened and directed down toward work activities and away from the night sky and nearby residents to the maximum extent safely possible.
- The number of nighttime lights used will be minimized to the greatest extent possible.

Implementation of this measure will reduce—to the extent feasible as governed by site-specific safety requirements—the overall amount of new daytime and nighttime light and glare introduced to the project vicinity during construction.

Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary, to Prevent Light Spill from Truck Headlights toward Residences

BDCP proponents will evaluate construction routes and identify portions of access routes where the use of visual barriers would minimize the introduction of new light and glare from construction truck headlights and the impact on nearby residents.

The BDCP proponents will install a visual barrier along portions of access routes where screening would prevent excessive light spill toward residents from truck headlights being used during nighttime construction activities. These visual barriers will meet the following performance criteria.

- The visual barrier will be a minimum of 5 feet high and will provide a continuous surface impenetrable by light. This height may be obtained by installing a temporary structure, such as fencing (e.g., chain link with privacy slats) or a semi-permanent structure, such as a concrete barrier (e.g., a roadway median barrier or architectural concrete wall system) retrofitted with an approved visual screen, if necessary, to meet the required height.
- The visual barriers will be of a material or have a color treatment appropriate for the location and traffic safety requirements. The use of glossy materials will be avoided.

Implementation of this measure will minimize the extent of construction truck headlight glare intruding into nearby residential areas.

Impact AES-5: Substantial Alteration in Existing Visual Quality or Character during Operation

***NEPA Effects*:** Once in operation, visible maintenance activities on the intakes, tunnels, sedimentation basins, pumping plant facility, ~~and~~ forebays, and transmission lines would be required periodically. ~~Intakes~~ Intake facilities would require painting, cleaning, and repairs. Sediment and debris removal would occur at intake openings to keep these facilities in ~~These activities could be visible from the water or land.~~ Sedimentation would be dredged and sediment would be removed from drying basins annually. Forebays would be dredged to remove sediment at approximately 50-year intervals and embankments would receive vegetation removal and repairs. ~~These activities would be visible from the area surrounding the forebays.~~ Tunnels would require periodic inspection and would have vehicles parked near shaft sites while tunnels are accessed for inspection. Transmission lines would require periodic vegetation removal within the ROWs. Maintenance activities could be visible from the water or land by sensitive viewers in proximity to these features. The greatest visual effects resulting from operations would be maintenance of the intakes and dredging of the sedimentation basins and forebays. However, all activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes, pumping plants, and associated site features and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; dredged sedimentation basins and forebays would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, maintenance activities are anticipated to occur within a short period of time and cease when complete. However, these temporary maintenance activities are anticipated to occur within a short period of time, and effects on the existing visual quality and character during operation would not be adverse.

***CEQA Conclusion*:** Maintenance of the conveyance facilities (i.e., intakes, tunnels, forebays and transmission lines) would be required periodically and would involve painting, cleaning, and repair of structures; dredging at forebays (at approximately 50-year intervals); vegetation removal and care along embankments; tunnel inspection; and vegetation removal within transmission line ROWs. These activities could be visible from the water or land by sensitive viewers in proximity to these features. All activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes, pumping plants, and associated site features and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; dredged sedimentation basins and forebays would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, maintenance activities are anticipated to occur within a short period of time and cease when complete. These visible maintenance activities would be temporary, intermittent, and short-term impacts on the existing visual quality and character of the affected areas during operation and would be considered less than significant. Maintenance and operation of Alternative

4, once constructed, would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanently reduce visually important features. Thus, overall, Alternative 4 would have a less-than-significant impact on existing visual quality and character during maintenance and operation of the facilities in the study area. No mitigation is required.

Impact AES-6: Substantial Alteration in Existing Visual Quality or Character during Implementation of CM2–~~CM22~~CM21

Under Alternative 4, CM3 (natural communities protection and restoration) would be the mechanism to preserve lands to aid in implementing measures CM4–CM11. CM12 (methylmercury management), CM13 (invasive aquatic vegetation control), and ~~CM22~~CM21 (nonproject diversions~~avoidance and minimization measures~~) would be integrated into site-specific restoration designs and operations under CM3–CM11 (discussed below) and would appear to be an integrated part of those measures and not independent visual features. CM14 (operation of the Stockton Deep Water Ship Channel Aeration Facility), CM17 (illegal harvest reduction), CM19 (urban stormwater treatment), CM20 (recreational users invasive species program) are management measures that would not result in changes to the visual environment. Thus, CM14, CM17, CM19, and CM20 are not discussed further.

Existing Visual Quality and Character

Under Alternative 4, CM2 could introduce many features that would be visible in the landscape; these are described in Chapter 3, *Description of Alternatives*. These features include fish management facilities (e.g., screens, ladders, ramps, barriers); realignment of waterways; additional hydrologic monitoring stations; a floodplain fish rearing pilot project at Knaggs Ranch; support facilities (operations buildings, parking lots, access facilities such as roads and bridges) necessary to provide safe access for maintenance and monitoring; modification, removal, and construction of berms, levees, and water control structures. These actions have the potential to have adverse visual effects because of their proximity to sensitive receptors, duration of construction activities, and changes to the visual environment resulting from these proposed actions.

The Yolo Bypass, under CM2, would also be flooded for longer periods to improve habitat and spawning for covered fish species and to reduce stranding. While the increase in duration of flooding is not known, it is anticipated that there would not be an adverse effect on visual resources because the flooding, which is an existing visual condition, would occur during the normal flood season of the bypass and just extend that season. Therefore, the extended flood duration is not considered adverse.

CM4–CM11 would result in the conversion of primarily agricultural lands to restored or enhanced habitat. Activities associated with the implementation of restoration and habitat enhancement would take place over 40 years across all conservation measures, often during a relatively short window each year, and the overall intensity and duration of each action would vary based on the individual project. CM15 (predator control) may result in temporary, localized changes by removing predator hiding spots, modifying channel geometry, physically removing predators, and utilizing other control methods as dictated by site-specific conditions. This could result in physical changes to the visual environment at site-specific locations that could be visible to water- and land-based recreationists and other viewer groups, based on location. This may have beneficial or adverse effects based on the size of proposed projects and pre-and post-project conditions (e.g., if

restoration is implemented and improves pre-project conditions or if natural vegetation is removed and replaced with riprap which would degrade pre-project conditions). CM16 (nonphysical fish barriers) would use sound, light, and bubbles at the Head of Old River, the Delta Cross Channel, ~~and~~ Georgiana Slough, and, potentially, at Turner Cut, and Columbia Cut (note that Turner and Columbia Cut each have two channels, and thus would require two barriers)., ~~the Delta-Mendota Canal intake, and Clifton Court Forebay~~ to direct fish passage. The lights and bubbles may be visible to water-based recreationists, especially at dusk and night, and sound (if audible) could attract viewers' attention toward the nonphysical barriers. Small scale changes may be visible on the banks or in the water to be used for anchoring that could result in adverse visual effects. CM18 (conservation hatcheries) would result in visual changes to the environment by building a new hatchery that consists of a facility on the edge of the Sacramento River and a larger supplementation production facility nearby. This would require conversion of existing land uses along the river and nearby to a built facility. CM21 (nonproject diversions) would result in changes to the visual environment due to removal of individual diversions; consolidation of multiple unscreened diversions to a single or fewer screened diversions placed in lower quality habitat; relocation of diversions from high quality to lower quality habitat, in conjunction with screening; and reconfiguration and screening of individual diversions in high quality habitat. This could result in the removal and restoration at some locations that would result in beneficial effects or could introduce new structures where none presently exist that could be adverse.

Presently, it is not uncommon for heavy equipment to be seen, intermittently, for existing levee maintenance, agricultural, and dredging operations; site-specific construction; and use in managing wetlands and other land uses. Implementation of restoration and enhancement features would also introduce considerable heavy equipment and associated vehicles, including dozers, graders, scrapers, and trucks, into the viewshed of all viewer groups in the vicinity. Construction may include the creation of new levees; breeching existing levees; the creation of habitat levees; increasing connectivity between marshes and waterways; grading; planting; and redirecting intakes, discharges, and outfalls. In addition, acquiring public and private property to restore or enhance lands could displace occupants and would require infrastructure improvements such as roadways, parking lots, and utilities. These actions may also include the construction of new public features such as interpretive facilities and restrooms at some locations. These proposed actions would create changes in views of and from the study area throughout the construction period, which may last longer than 2 years depending on the specific project and effort required for construction. Because of the unknown location of site-specific restoration activities, potential presence of sensitive viewers, the potential for construction periods to last longer than 2 years, and varying intensity of construction, effects associated with implementation of these conservation measures are considered adverse for their potential to affect site-specific features that may be pre-existing and sensitive receptors that would witness these changes.

Implementation of restoration actions and conservation measures under Alternative 4 would have a noticeable effect on the visual character and quality of the study area and its surroundings. Locations that are currently characterized by physical features associated with agricultural activities would be altered through the establishment of new wetlands, marshes, or restored riparian corridors. These areas may be denuded of vegetation, or may appear to be so from a distance because of immature planted vegetation that would be similar in appearance to tilled or newly planted agricultural fields. The sites would be in a transitional state, and over a period of from one to several years, plant species would mature and vegetation would recolonize the sites. Because these sites would be scattered throughout the conservation zones, they would not create a visual

imposition on the landscape or be perceived as a centralized, large-scale visual change. In addition, restored/enhanced sites would increase the amount of native vegetative communities that attract wildlife, thus befitting the visual quality and diversity of the study area. The visual characteristics of these new landscapes would be consistent with other natural marsh or wetland areas of the Delta. In this sense, the BDCP would have a beneficial effect on the visual character and quality of the restoration areas and their surroundings.

Scenic Vistas

Under Alternative 4, CM2 has the potential to visually alter scenic vistas depending on the location of various modifications, such as levee construction or removal. CM4–CM11 would result in the conversion of primarily agricultural lands to restored or enhanced habitat. CM16, CM18, CM15, and CM21 have the potential to introduce visually discordant features into scenic vistas, if they are located within a vista viewshed. Once constructed, large-scale changes to scenic vistas would result from conversion of agriculture lands to restored/enhanced areas that have more topographic variation and variable vegetative cover. Because exact locations of restoration/enhancement sites have not been identified, effects on site-specific scenic vistas cannot be determined. However, views of the large areas proposed for restoration/enhancement could likely change from agricultural or developed uses to areas with more natural features such as marshes and wetlands.

Depending on the location, the effect on scenic vistas could be beneficial or adverse. Beneficial effects would occur where flat agricultural lands and row crops are replaced by restored wetlands and riparian vegetation, because natural areas are rarer scenic features in the Delta and such a change would increase visual diversity. In general, wetlands would provide excellent vista opportunities because the restored vegetation cover would provide visual interest and would not block distant background views. However, at some sites, restoration/enhancement of agricultural lands to riparian forest could block long-distance vistas from scenic vista areas. For example, riparian forest plantings installed along a river segment where roadway travelers currently have open vistas of the waterway would mature and result in more restricted views of the river and vistas beyond. Restoration/enhancement actions could also result in the creation of new scenic vistas, perhaps through the removal of existing agricultural tree rows and the establishment of vista points at specific locations or viewing opportunity areas along newly created recreational trails.

After completion of construction activities necessary for restoration, areas surrounding the restored/enhanced area may be denuded of vegetation, or appear to be so from a distance because of immature planted vegetation would be similar in appearance to tilled or newly planted agricultural fields. The sites would be in a transitional state, and over a period of one to several years, plant species would mature and vegetation would recolonize the sites. The sites would be scattered throughout the conservation zones so would not create a visual imposition on the landscape or be perceived as a centralized, large-scale visual change. In addition, restored/enhanced sites would increase the amount of native vegetative communities that attract wildlife, thus helping to improve the visual quality and diversity of the restored areas. The visual characteristics of these restored/enhanced landscapes would be similar to other areas of the Delta that are in a natural marsh or wetland state and more limited in extent than the widespread areas of agricultural development. In this sense, the BDCP would have an overall beneficial effect related to the enhancement and creation of scenic vistas in the Delta. However, site-specific restoration information and plans need to be developed before the site-specific effects on scenic vistas can be determined.

Scenic Highways

No restoration actions are expected to be established in areas along SR 160. However, it is possible that actions proposed for some areas would be visible in the middleground and background views from SR 160. These areas are: the portions of CZ 3 on the west side of the Sacramento River that extends from Sacramento to the confluence with the Yolo Bypass; CZ 5, on the east/south side of the Sacramento River that extends from Intake 1 to Pittsburg; and CZ 10, just south of CZ 5 and spanning both sides of SR 4 near Antioch. In addition, CZ 7 would be visible in the middleground and background views from I-580, which is a state-designated scenic route in San Joaquin County. CM15, CM16, CM18, and CM21 have the potential to introduce visually discordant features as viewed from scenic highways, if they are located within the viewshed of a scenic highway. During the near term, changes to the visual environment resulting from vegetation removal may be noticeable to travelers along these routes. These areas may be denuded of vegetation, or appear to be so from a distance because of immature planted vegetation that would be similar in appearance to tilled or newly planted agricultural fields. The sites would be in a transitional state, and over a period of one to several years, plant species would mature and vegetation would recolonize the sites. The sites would be scattered throughout the conservation zones so would not create a visual imposition on the landscape or be perceived as a centralized, large-scale visual change. In addition, restored/enhanced sites would increase the amount of native vegetative communities that attract wildlife, thus helping to improve the visual quality and visual diversity of the restoration area. Due to the distance, changes associated with restoration activities would not affect the visual quality along these scenic highway corridors and would not result in adverse effects.

Light and Glare

The intent of the restoration actions would be to establish native vegetation along riparian corridors by allowing inundation of areas or by converting existing agricultural lands to tidal wetlands. Given the nature of CM2–~~CM22~~CM21, only a few new project-related sources of light and glare would be expected to result from their implementation. Restored areas would largely be natural habitat areas. CM16 and CM18 have the potential to introduce new lighting sources through project features while it is not likely that CM15 and CM21 would introduce new sources of light. Limited lighting could be installed at some facilities, such as flood gates/pumping facilities, operations buildings, and visitor facilities. At this time, it is not known where these facilities would be proposed; however, it is anticipated that there would be a very limited number of such facilities and that the lighting would be reduced to the minimum necessary to provide safety and security and that effects would not be adverse.

Summary

NEPA Effects**:** There may be site-specific, localized adverse visual effects. These conservation measures would alter the Delta landscape by incrementally, and substantially, introducing elements into the study area over time. This could pave the way for the gradual transition of a much valued cultural and regional landscape and make it easier for other similar projects to be implemented over time because of the devalued baseline conditions, compared to Existing Conditions, if conservation measures are not planned and implemented in a manner that protects visual resources. CM2–~~CM22~~CM21, when combined with CM1, could substantially alter the visual character of the study area, which is strongly identified by its agricultural and water-based Delta landscapes and communities. These landscapes and communities could be adversely affected by the introduction of discordant visual features, removal of existing buildings and landscape elements of value, and

through the potential for indirect impacts associated with other development potentially setting a precedent for other development to occur. All of these effects would alter the visual character of the existing regional landscape. While many planning and regulatory documents recognize the unique visual resources of the Delta and the importance of this regional visual landscape as a shared and endangered resource, there is no comprehensive planning or regulatory document to aid in the preservation of this resource and to serve as guidance for development within this landscape.

Mitigation Measures AES-1a through AES-1g and Mitigation Measures AES-4a through AES-4c are available to address effects from habitat restoration and enhancement actions under CM2–~~CM22~~CM21. In addition, Mitigation Measures AES-6a and AES-6b are available to help reduce adverse visual effects. Upon development of site-specific design information and plans, additional mitigation measures may be identified to address action-specific adverse effects. However, each individual project under CM2–~~CM22~~CM21 would undergo the environmental compliance process that would be used to determine what additional mitigation measures, would be deemed appropriate to reduce adverse effects and to assess compliance with relevant regulations. Finally, Mitigation Measure AES-6c is available to help inventory, classify, and protect the unique visual landscape of the Delta.

CEQA Conclusion: As described under the relevant headers above, which correspond to the CEQA checklist, ~~I~~implementation of conservation measures under Alternative 4 has the potential to affect existing visual quality and character, views of scenic vistas, views from scenic highways, and introduce new sources of light and glare in the study area. Impacts on the existing visual quality and character would be significant where use of large ~~numbers~~ amounts of heavy construction equipment, changes in topography, and introduction of new structures or facilities with new sources of light and glare where none presently exist would take place in the vicinity of sensitive receptors. However, because a number of factors that would determine the level of change are unknown—the location of site-specific restoration activities, potential presence of sensitive viewers, potential for construction periods to last longer than 2 years, and varying intensity of construction—impacts associated with implementation of these conservation measures (CM2–~~CM22~~CM21) on visual quality and character, scenic vistas, and light and glare sources, are considered significant. However, ~~B~~impacts to scenic highways would not be substantial because of the distance ~~of~~ that implemented conservation measures would be away from scenic highways~~,~~. Therefore, while changes associated with visual quality and character, scenic vistas, and light and glare sources are considered significant, changes associated with these activities would not affect the visual quality along ~~these~~ scenic highway corridors and this impact would be less than significant. Site-specific restoration information and plans need to be developed before the site-specific effects on the existing visual character, scenic vistas, and light and glare can be determined.

Several mitigation measures and environmental commitments (described under Impact AES-1) are available to minimize the impacts on visual quality and character in the study area that could result from implementation of these conservation measures. As summarized below, these measures could be applied to individual restoration projects or actions as appropriate for the site-specific conditions and design considerations. In addition, each restoration project or action would undergo an environmental compliance process that would be used to determine what additional mitigation measures would be deemed appropriate to reduce significant effects. Mitigation Measures AES-1a through AES-1g could be applied to minimize impacts by locating new transmission lines and access routes to minimize the removal of trees and shrubs and pruning needed where feasible, installing visual barriers between construction work areas and sensitive receptors, developing and implementing a spoil/borrow and RTM area management plan, restoring barge unloading facility

sites once decommissioned, applying aesthetic design treatments to all structures to the extent feasible, locating concrete batch plants and fuel stations away from sensitive visual resources and receptors and restoring the sites upon removal of facilities, and using best management practices to implement a project landscaping plan. Mitigation Measures AES-4a through AES-4c could be used to reduce the effects of new light and glare sources by limiting construction to daylight hours within 0.25 mile of residents, minimizing fugitive light from portable sources used for construction, and installing visual barriers along access routes, where necessary, to prevent light spill from truck headlights toward residences. In addition, Mitigation Measures AES-6a and AES-6b would further minimize impacts on visual resources by undergrounding new or relocated utility lines, where feasible, and through an evaluation of an afterhours low-intensity and lights off policy. Finally, implementation of Mitigation Measure AES-6c would provide a strategy for the protection of the unique visual landscape of the Delta.

While some of these conservation measures could result in beneficial impacts through the restoration of natural habitat and these mitigation measures would reduce the severity of impacts, it is unknown whether they would be reduced to a less-than-significant level because of uncertainties associated with future implementation of CM2–~~CM22~~CM21. In addition, the size of the study area and the nature of changes introduced by these conservation measures would result in permanent changes to the regional landscape such that there would be noticeable changes to the visual character that may or may not blend or be in keeping with the existing visual environment. Thus, implementation of CM2–~~CM22~~CM21 would result in significant and unavoidable impacts on the existing visual quality and character in the study area.

Mitigation Measure AES-1a: Locate New Transmission Lines and Access Routes to Minimize the Removal of Trees and Shrubs and Pruning Needed to Accommodate New Transmission Lines and Underground Transmission Lines Where Feasible

Please refer to Mitigation Measure AES-1a under Impact AES-1.

Mitigation Measure AES-1b: Install Visual Barriers between Construction Work Areas and Sensitive Receptors

Please refer to Mitigation Measure AES-1b under Impact AES-1.

Mitigation Measure AES-1c: Develop and Implement a Spoil/Borrow and Reusable Tunnel Material Area Management Plan

Please refer to Mitigation Measure AES-1c under Impact AES-1.

Mitigation Measure AES-1d: Restore Barge Unloading Facility Sites Once Decommissioned

Please refer to Mitigation Measure AES-1d under Impact AES-1.

Mitigation Measure AES-1e: Apply Aesthetic Design Treatments to All Structures to the Extent Feasible

Please refer to Mitigation Measure AES-1e under Impact AES-1.

Mitigation Measure AES-1f: Locate Concrete Batch Plants and Fuel Stations Away from Sensitive Visual Resources and Receptors and Restore Sites upon Removal of Facilities

Please refer to Mitigation Measure AES-1f under Impact AES-1.

Mitigation Measure AES-1g: Implement Best Management Practices to Implement Project Landscaping Plan

Please refer to Mitigation Measure AES-1g under Impact AES-1.

Mitigation Measure AES-4a: Limit Construction to Daylight Hours Within 0.25 Mile of Residents

Please refer to Mitigation Measure AES-4a under Impact AES-4.

Mitigation Measure AES-4b: Minimize Fugitive Light from Portable Sources Used for Construction

Please refer to Mitigation Measure AES-4b under Impact AES-4.

Mitigation Measure AES-4c: Install Visual Barriers along Access Routes, Where Necessary, to Prevent Light Spill from Truck Headlights toward Residences

Please refer to Mitigation Measure AES-4c under Impact AES-4.

Mitigation Measure AES-6a: Underground New or Relocated Utility Lines Where Feasible

BDCP proponents will underground new or relocated utility lines, where feasible, to reduce or improve adverse visual effects associated with the visual intrusion of such features in the landscape. New or relocated utility lines will not be underground where undergrounding would constitute an adverse effect on sensitive habitats or sensitive species or require the removal of healthy native trees that would fall under the definition of a native heritage tree. For the purpose of this mitigation measure, a native heritage tree is defined for this project using guidance set forth in the City of Sacramento Heritage Tree Ordinance, as follows.

- Any tree of any species with a trunk circumference of one hundred (100) inches or more, which is of good quality in terms of health, vigor of growth and conformity to generally accepted horticultural standards of shape and location for its species.
- Any native *Quercus* species, *Aesculus California,* or *Platanus Racemosa*, having a circumference of 36-inches or greater when a single trunk, or a cumulative circumference of 36-inches or greater when a multi-trunk, which is of good quality in terms of health, vigor of growth and conformity to generally accepted horticultural standards of shape and location for its species.
- Any tree 36-inches in circumference or greater in a riparian zone. The riparian zone is measured from the centerline of the water course to 30-feet beyond the high water line (City of Sacramento 2012).

Other trees may also be protected, as deemed appropriate by BDCP proponents to be of special historical or environmental value or of significant community benefit.

Implementation of this measure, where possible, will avoid the introduction of new aboveground utility lines and result in an improved view in areas where existing utility lines could be relocated underground.

Mitigation Measure AES-6b: Develop and Implement an Afterhours Low-Intensity and Lights Off Policy

The BDCP proponents will evaluate measures and develop and implement of a commercial and public buildings lighting policy to minimize the impact of building lighting on nearby sensitive viewers. The policy will include the following performance standards.

- Require building design to include low-intensity interior safety lighting for use during afterhours. This practice would decrease the amount of nighttime light that would occur from using standard interior lighting as safety lighting.
- Prevent unnecessary overuse of interior nighttime lighting, requiring that offices and businesses implement a "lights-off" policy. This practice requires that all non-safety lighting be turned off at night (such as in offices and hallways), after business hours. This standard can be accomplished through use of movement activated lighting systems.
- Prohibit use of harsh mercury vapor or low-pressure sodium bulbs.

Such a policy can greatly reduce the amount of nighttime light pollution that is created by standard office and business practices.

Mitigation Measure AES-6c: Implement a Comprehensive Visual Resources Management Plan for the Delta and Study Area

The BDCP project proponents will work with federal, state, and local stakeholders to implement a visual resources management plan for the Delta and study area. The visual resources management plan will be developed based on the following considerations and performance standards.

- The purpose of the visual resources management plan will be to protect and enhance the visual landscape and will not serve as a mechanism to allow for undue development or to facilitate advanced development of the Delta and study area.
- The visual resources management plan will implement a prescribed methodology for inventorying and classifying all visual landscapes within the study area. This methodology will utilize measures similar to BLM and USDA Forest Service inventorying techniques or will develop its own methodology for inventorying study area visual landscapes. This methodology will incorporate a quantifiable measure of visual landscapes that can be used to determine areas for preservation, enhancement, and smart development, and to measure and monitor visual effects on the study area landscape over time. This inventory will include an inventory of viewer groups and viewer responses to adequately identify publicly valued visual landscapes.
- The inventory of visual landscapes within the study area will be used as a tool to preserve the visual landscape and to guide smart growth and development.
- The visual resources management plan will implement regulatory language to protect visual resources of the study area, based on preserving important and sensitive visual landscapes. It will also identify design and management measures for avoidance of adverse effects.

- The visual resources management plan will identify and facilitate the preservation of sensitive visual landscapes through the planning and establishment of scenic easements and official federal and/or state designation for the protection of scenic resources (e.g., historic and/or scenic trails, designated scenic areas, scenic highways/byways, and wild and scenic rivers).
- The visual resources management plan will serve to encourage the integrated use of environmental design arts, as outlined in Section 102(A) of NEPA, so that projects within the study area are designed to be self-mitigating instead of waiting until the environmental analysis process to establish design measures that mitigate a project's visual effects.
- The visual resources management plan will recognize and work with the evolving visual landscape as it relates to climate change and sea level rise. It will establish proactive design and management measures that protect the evolving landscape and visual integrity of the study area and will not facilitate reactive design and management measures that could adversely alter the visual landscape of the study area.
- The visual resources management plan for the study area will be an adaptive management tool and will undergo periodic updates every 20 years.
- CM2–~~CM22~~CM21 will comply with this visual resources management plan.

Impact AES-7: Compatibility of the Proposed Water Conveyance Facilities and Other Conservation Measures with Federal, State, or Local Plans, Policies, or Regulations Addressing Aesthetics and Visual Resources

***NEPA Effects*:** Constructing conveyance facilities (CM1) and implementing CM2–~~CM22~~CM21 under Alternative 4 would be similar to Alternative 1A, Impact AES-7, with the key difference related to construction of only Intakes 2, 3, and 5 and could result in the potential for some incompatibilities with plans and policies related to preserving the visual quality and character of the Delta. A number of plans and policies that coincide with the study area boundaries provide guidance for visual resource issues as overviewed in *Section 17.2, Regulatory Setting*. This overview of plan and policy compatibility evaluates whether Alternative 4 is compatible or incompatible with such enactments, rather than whether impacts are adverse or not adverse or significant or less than significant. If the incompatibility relates to an applicable plan, policy, or regulation adopted to avoid or mitigate visual effects, then an incompatibility might be indicative of a related significant or adverse effect under CEQA and NEPA, respectively. These physical effects of Alternative 4 on visual resources are addressed in Impacts AES-1 through AES-6, above. The following is a summary of compatibility evaluations related to visual resources for plans and policies relevant to the BDCP.

Conveyance Facilities

- The Sierra Resource and Cosumnes River Preserve Management Plans protect the Cosumnes River Preserve. Views within the Cosumnes River Preserve would not be affected by Alternative 4 because it is located east of I-5 and public views of the project site available from trails are obscured by riparian vegetation and I-5.
- The Suisun Marsh is protected by the San Francisco Bay Conservation and Development Commission Suisun Marsh Protection Plan. The eastern boundary of the Suisun Marsh extends to Collinsville Road in southern Solano County and falls within the westernmost portion of the study area. Views from Suisun Marsh would not be affected by this alternative because project

features would be obscured by distance, the Altamont Hills, and intervening trees, infrastructure, and development.

- EBRPD parks within the study area include Browns Island, Antioch/Oakley, and Big Break Parks (East Bay Regional Park District 2013b). Views from these parks would not be affected by this alternative because project features would be obscured by distance, the Altamont Hills, and intervening trees, infrastructure, and development.
- The cities of Antioch, Brentwood, Oakley, Sacramento, Lathrop, Stockton, Tracy, Rio Vista, Suisun City, and West Sacramento would not be affected by this alternative because there are no project features within or visible from these cities. Therefore, this alternative would be consistent with the protection of visual resources covered under those general plans.
- The Johnston-Baker-Andal-Boatwright Delta Protection Act of 1992, Delta Protection Commission Land Use and Resource Management Plan for the Primary Zone of the Delta, Delta Plan, Brannan Island and Franks Tract State Recreation Areas General Plan are all focused on the protection of resources, including visual resources, within the Delta. While constructing and operating conveyance facilities under this alternative are intended to provide ecosystem benefits in the Delta, constructing these conveyance elements could be considered incompatible with measures to protect the unique visual environment of the Delta because agricultural lands and riverbanks would be converted to other uses and the scale of construction would result in changes to the landscape that may be considered disruptive to the current Delta environment and visual quality.
- Contra Costa, Sacramento, San Joaquin, and Solano Counties all have policies to preserve and protect the scenic qualities of the Delta as summarized in *Section 17.2 Regulatory Setting*. In addition, Alameda, Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties are focused on the protection of visual resources and preserving agricultural lands. The general plans for these counties include policies for the protection of visual resources, trees, waterways, and landscaping and for avoiding impacts such as the alteration of landforms and the introduction of utilities and new sources of light. These policies seek to minimize visual impacts and enhance scenic qualities and also encourage placing utility lines underground. The conversion of agricultural lands and riverbanks to intake facilities, conveyance facility changes and introduction of new lighting and transmission lines where none presently exist would substantially alter the landscape and could be considered incompatible with local policies aimed at protecting visual resources in these counties. Potential incompatibilities with Sacramento County and San Joaquin County policies would be most likely because most of the project features occur in these counties. Alameda and Contra Costa Counties have much smaller portions of project features that surround the Clifton Court Forebay. Yolo County would be affected by intakes located on the east bank of the Sacramento River that would affect views from South River Road. Alternative 4 would not be incompatible with Solano County policies because conveyance facilities would not be located in this area.

Other Conservation Measures

- The Yolo Bypass would be altered under CM2. Views of and from South River Road would not be affected. However, new fish screens, ladders, ramps, barriers, realignment of waterways, additional hydrologic monitoring stations, fish rearing pilot project at Knaggs Ranch, operations buildings, parking lots, access facilities such as roads and bridges, and modification, removal, and construction of berms, levees, and water control structures would result in changes to the

landscape that may be incompatible with the Yolo County General Plan Policies LU-3.7, CC-1.2, CC-1.3, and CC-1.4 that protect scenic areas, the rural landscape character, and the night sky.

- CM4–CM11 would result in the conversion of primarily agricultural lands to restored or enhanced habitat across all 11 CZs, with specific focus on ROAs (refer to Figure 3-1). Therefore, associated regulations may apply. Restored areas would largely be natural habitat areas. Alterations such as channel and levee modifications, landform alteration from dredge spoil placement, and floodplain lowering could change the visual landscape. Restoring areas and views to natural, native habitat would likely be beneficial and would increase visual diversity. However, converting agricultural lands may be incompatible with one or more regulation protecting visual resources, although it may facilitate regulations set in place to protect and restore the Delta. If facilities, such as buildings, parking lots, or roads, are built, they would also have the potential to be incompatible with relevant regulations that protect scenic areas, the landscape character, the night sky, and the Delta.
- CM15 and CM21 would occur across all 11 CZs and could result in physical changes to the visual environment at a number of locations and where relevant regulations may apply. This may have beneficial or adverse effects based on the size of proposed projects and pre-and post-project conditions (e.g., if restoration is implemented and improves pre-project conditions or if natural vegetation is removed and replaced with rip rap or a new diversion structure that degrades pre-project conditions). Vegetation removal and replacement with rip rap or a diversion structure could be incompatible with be incompatible with relevant regulations that protect scenic areas, the landscape character, the night sky, and the Delta.
- CM16 could use sound, light, and bubbles at the head of the Delta Cross Channel and Georgiana Slough in Sacramento County~~,~~ and~~;~~ at the Head of Old River~~,~~ and potentially at Turner Cut~~,~~ and Columbia Cut in San Joaquin County (note that Turner and Columbia Cut each have two channels, and thus would require two barriers)~~, the Delta-Mendota Canal intake in Alameda County; and Clifton Court Forebay in Contra Costa County~~ to direct fish passage. Small scale changes may be visible on the banks or in the water used for anchoring that could result in adverse visual effects, but it is anticipated that these changes would be compatible with County general plan policies that protect visual resources.
- Building a new hatchery that consists of a facility on the edge of the Sacramento River and a larger supplementation production facility nearby, through CM18, would result in visual changes and conversion of existing land uses along and near the river would be required to build facilities. These facilities could be located in Sacramento, Yolo, or Solano Counties and also fall within the Delta. Therefore, corresponding regulations may apply. The size and locations of these facilities are unknown, but it is likely that conversion of existing land uses, and potentially undeveloped land would alter the visual character along the Sacramento River and would be incompatible with one or more plans or policies for the protection of visual resources in these regions.

***CEQA Conclusion*:** The incompatibilities identified in the analysis indicate the potential for a physical consequence to the environment. The physical effects they suggest are discussed in impacts AES-1 through AES-6, above and no additional CEQA conclusion is required related to the compatibility of Alternative 4 with relevant plans and policies.

17.3.3.10 Alternative 5—Dual Conveyance with Pipeline/Tunnel and Intake 1 (3,000 cfs; Operational Scenario C)

Impact AES-5: Substantial Alteration in Existing Visual Quality or Character during Operation

***NEPA Effects*:** Effects on the visual environment through operations and maintenance of the water conveyance facilities (CM1) under this alternative would be similar to those described for Alternative 1A, Impact AES-5. Once the facility is in operation, visible regular and periodic maintenance would be required on all major structures. Activities such as painting, cleaning, vegetation maintenance (removal), repairs, and inspections would be visible from viewpoints on water and land. The greatest visual effects resulting from operations would be maintenance of the intake and dredging the forebays. However, under Alternative 5, the severity of these effects in the vicinity of the north Delta intakes and Byron Tract Forebay relative to Alternative 1A would be decreased because there would only be one intake structure instead of five and the Byron Tract Forebay would be reduced from 600 to 200 acres. However, all activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; dredged forebays would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, ~~Because temporary~~ maintenance activities are anticipated to occur within a short period of time and cease when complete, these effects on the existing visual quality and character during operation would not be adverse because the activities would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanently reduce visually important features.

***CEQA Conclusion*:** Maintenance of the conveyance facilities (i.e., intake, tunnels, forebays and transmission lines) would be required periodically and would involve painting, cleaning, and repair of structures; dredging at forebays (at approximately 50-year intervals); vegetation removal and care along embankments; tunnel inspection; and vegetation removal within transmission line ROWs. These activities could be visible from the water or land by sensitive viewers in proximity to these features. All activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; dredged forebays would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, maintenance activities are anticipated to occur within a short period of time and cease when complete. These visible maintenance activities would be temporary, intermittent, and short-term impacts on the existing visual quality and character of the affected areas during operation and would be considered less than significant. Maintenance and operation of Alternative 5

once constructed, would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanently reduce visually important features. Thus, overall, Alternative 5 would have a less-than-significant impact on existing visual quality and character during maintenance and operation of the facilities in the study area. No mitigation is required.

17.3.3.11 Alternative 6A—Isolated Conveyance with Pipeline/Tunnel and Intakes 1–5 (15,000 cfs; Operational Scenario D)

Impact AES-5: Substantial Alteration in Existing Visual Quality or Character during Operation

***NEPA Effects*:** Effects on the visual environment through operations and maintenance of the water conveyance facilities under this alternative would be similar to those described for Alternative 1A, Impact AES-5. Once the facility is in operation, visible regular and periodic maintenance would be required on all major structures, including the operable barrier at the head of Old River. Activities such as painting, cleaning, vegetation maintenance (removal), repairs, and inspections would be visible from viewpoints on water and land.

The greatest visual effects resulting from operations would be maintenance of the intakes and dredging the forebays. The operable barrier would also require periodic dredging. However, all activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; dredged forebays would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, ~~However, these temporary~~ maintenance activities are anticipated to occur within a short period of time and cease when complete, and effects on the existing visual quality and character during operation would not be adverse because the activities would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanently reduce visually important features.

***CEQA Conclusion*:** Maintenance of the conveyance facilities (i.e., intakes, tunnels, forebays and transmission lines) would be required periodically and would involve painting, cleaning, and repair of structures; dredging at forebays (at approximately 50-year intervals); vegetation removal and care along embankments; tunnel inspection; and vegetation removal within transmission line ROWs. These activities could be visible from the water or land by sensitive viewers in proximity to these features. All activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; dredged forebays would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed

landscape. In addition, maintenance activities are anticipated to occur within a short period of time and cease when complete. These visible maintenance activities would be temporary, intermittent, and short-term impacts on the existing visual quality and character of the affected areas during operation and would be considered less than significant. Maintenance and operation of Alternative 6A once constructed, would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanently reduce visually important features. Thus, overall, Alternative 6A would have a less-than-significant impact on existing visual quality and character during maintenance and operation of the facilities in the study area. No mitigation is required.

17.3.3.12 Alternative 6B—Isolated Conveyance with East Alignment and Intakes 1–5 (15,000 cfs; Operational Scenario D)

Impact AES-5: Substantial Alteration in Existing Visual Quality or Character during Operation

***NEPA Effects*:** Effects on the visual environment through operations and maintenance of the water conveyance facilities (CM1) under this alternative would be similar to those described for Alternative 1A and 1B, Impact AES-5. Once the facility is in operation, visible regular and periodic maintenance would be required on all major structures. Activities such as painting, cleaning, vegetation maintenance (removal), repairs, and inspections would be visible from viewpoints on water and land. Although under Alternative 6B there would not be an intermediate forebay, the canal and Byron Tract Forebay would require cleaning and periodic dredging. The greatest visual effects resulting from operations would be maintenance on the intakes and cleaning the canals. However, all activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; the dredged forebay and canals would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, ~~However, these temporary~~ maintenance activities are anticipated to occur within short periods of time and cease when complete, and effects on the existing visual quality and character during operation would not be adverse because the activities would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanently reduce visually important features.

***CEQA Conclusion*:** Maintenance of the conveyance facilities (i.e., intakes, canals, forebay, transmission lines, and operable barrier) would be required periodically and would involve painting, cleaning, and repair of structures; dredging at the Byron Tract Forebay and operable barrier, cleaning canals; vegetation removal and care along embankments; canal inspection; and vegetation removal within transmission line ROWs. These activities could be visible from the water or land by sensitive viewers in proximity to these features. All activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments

and transmission line ROWs cleared of vegetation; the dredged forebay and canals would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, maintenance activities are anticipated to occur within a short period of time and cease when complete. These visible maintenance activities would be temporary, intermittent, and short-term impacts on the existing visual quality and character of the affected areas during operation and would be considered less than significant. Maintenance and operation of Alternative 6B, once constructed, would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanent reduce visually important features. Thus, overall, Alternative 6B would have a less-than-significant impact on existing visual quality and character during maintenance and operation of the facilities in the study area. No mitigation is required.

17.3.3.13 Alternative 6C—Isolated Conveyance with West Alignment and Intakes W1–W5 (15,000 cfs; Operational D)

Impact AES-5: Substantial Alteration in Existing Visual Quality or Character during Operation

***NEPA Effects*:** Effects on the visual environment through operations and maintenance of the water conveyance facilities (CM1) under this alternative would be similar to those described for Alternatives 1A and 1C, Impact AES-5. Once the facility is in operation, visible regular and periodic maintenance would be required on all major structures. Activities such as painting, cleaning, vegetation maintenance (removal), repairs, and inspections would be visible from viewpoints on water and land Although under Alternative 6C there would not be an intermediate forebay, the canal and Byron Tract Forebay would require cleaning and periodic dredging. The greatest visual effects resulting from operations would be maintenance on the intakes and cleaning the canals. However, all activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; the dredged forebay and canals would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, ~~However, these temporary~~ maintenance activities are anticipated to occur within short periods of time and cease when complete, and effects on the existing visual quality and character during operation would not be adverse because the activities would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanently reduce visually important features.

***CEQA Conclusion*:** Maintenance of the conveyance facilities (i.e., intakes, canals, forebay, transmission lines, and operable barrier) would be required periodically and would involve painting, cleaning, and repair of structures; dredging at the Byron Tract Forebay; cleaning canals;

vegetation removal and care along embankments; canal inspection; and vegetation removal within transmission line ROWs. These activities could be visible from the water or land by sensitive viewers in proximity to these features. All activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; the dredged forebay and canals would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, maintenance activities are anticipated to occur within a short period of time and cease when complete. These visible maintenance activities would be temporary, intermittent, and short-term impacts on the existing visual quality and character of the affected areas during operation and would be considered less than significant. Maintenance and operation of Alternative 6C, once constructed, would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanent reduce visually important features. Thus, overall, Alternative 6C would have a less-than-significant impact on existing visual quality and character during maintenance and operation of the facilities in the study area. No mitigation is required.

17.3.3.14 Alternative 7—Dual Conveyance with Pipeline/Tunnel, Intakes 2, 3, and 5, and Enhanced Aquatic Conservation (9,000 cfs; Operational Scenario E)

Impact AES-5: Substantial Alteration in Existing Visual Quality or Character during Operation

***NEPA Effects*:** Effects on the visual environment through operations and maintenance of the water conveyance facilities (CM1) under this alternative would be similar to those described for Alternative 4, Impact AES-5. Once the facility is in operation, visible regular and periodic maintenance would be required on all major structures. Activities such as painting, cleaning, vegetation maintenance (removal), repairs, and inspections would be visible from viewpoints on water and land. The greatest visual effects resulting from operations would be maintenance of the intakes and dredging the forebays. However, all activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; dredged forebays would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, ~~Because temporary~~ maintenance activities are anticipated to occur within a short period of time and cease when complete, these effects on the existing visual quality and character during operation would not be adverse because the activities would not result in further substantial changes to the existing

natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanently reduce visually important features.

***CEQA Conclusion*:** Maintenance of the conveyance facilities (i.e., intakes, tunnels, forebays and transmission lines) would be required periodically and would involve painting, cleaning, and repair of structures; dredging at forebays (at approximately 50-year intervals); vegetation removal and care along embankments; tunnel inspection; and vegetation removal within transmission line ROWs. These activities could be visible from the water or land by sensitive viewers in proximity to these features. All activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; dredged forebays would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, maintenance activities are anticipated to occur within a short period of time and cease when complete. These visible maintenance activities would be temporary, intermittent, and short-term impacts on the existing visual quality and character of the affected areas during operation and would be considered less than significant. Maintenance and operation of Alternative 7 once constructed, would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanently reduce visually important features. Thus, overall, Alternative 7 would have a less-than-significant impact on existing visual quality and character during maintenance and operation of the facilities in the study area. No mitigation is required.

17.3.3.15 Alternative 8—Dual Conveyance with Pipeline/Tunnel, Intakes 2, 3, and 5, and Increased Delta Outflow (9,000 cfs; Operational Scenario F)

Impact AES-5: Substantial Alteration in Existing Visual Quality or Character during Operation

***NEPA Effects*:** Effects on the visual environment through operations and maintenance of the water conveyance facilities (CM1) under this alternative would be similar to those described for Alternative 4, Impact AES-5. Once the facility is in operation, visible regular and periodic maintenance would be required on all major structures. Activities such as painting, cleaning, vegetation maintenance (removal), repairs, and inspections would be visible from viewpoints on water and land. The greatest visual effects resulting from operations would be maintenance of the intakes and dredging the forebays. However, all activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; dredged forebays would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of

equipment and movements seen in the agricultural/leveed landscape. In addition, ~~Because temporary~~ maintenance activities are anticipated to occur within a short period of time and cease when complete, these effects n the existing visual quality and character during operation would not be adverse because the activities would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanently reduce visually important features.

***CEQA Conclusion*:** Maintenance of the conveyance facilities (i.e., intakes, tunnels, forebays and transmission lines) would be required periodically and would involve painting, cleaning, and repair of structures; dredging at forebays (at approximately 50-year intervals); vegetation removal and care along embankments; tunnel inspection; and vegetation removal within transmission line ROWs. These activities could be visible from the water or land by sensitive viewers in proximity to these features. All activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining the colors of the intakes and cleaning the facilities and keeping forebay embankments and transmission line ROWs cleared of vegetation; dredged forebays would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, maintenance activities are anticipated to occur within a short period of time and cease when complete. These visible maintenance activities would be temporary, intermittent, and short-term impacts on the existing visual quality and character of the affected areas during operation and would be considered less than significant. Maintenance and operation of Alternative 8 once constructed, would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanently reduce visually important features. Thus, overall, Alternative 8 would have a less-than-significant impact on existing visual quality and character during maintenance and operation of the facilities in the study area. No mitigation is required.

17.3.3.16 Alternative 9—Through Delta/Separate Corridors (15,000 cfs; Operational Scenario G)

Impact AES-5: Substantial Alteration in Existing Visual Quality or Character during Operation

***NEPA Effects*:** Operations under Alternative 9 would be similar to those under Alternatives 1A through 1C. Therefore, effects related to visual impacts resulting from maintenance activities would be similar to those described under Alternatives 1A through 1C, Impact AES-5. The primary difference would be that there would not be an intermediate forebay needing dredging, but there would be one canal. The greatest visual effects resulting from operations would be maintenance on the fish screen, operable barriers, and cleaning of the canals. These activities would be visible from the water or land by sensitive viewers in proximity to these features. However, all activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining and cleaning the facilities and keeping transmission line ROWs cleared of vegetation; dredged canals would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation.

These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, ~~However, these temporary~~ maintenance activities are anticipated to occur within short periods of time and cease when complete, and effects on the existing visual quality and character during operation would not be adverse because the activities would not result in further substantial changes to the existing natural viewshed or terrain, alter existing visual quality of the region or eliminate visual resources, or obstruct or permanently reduce visually important features. Additionally, as discussed under Alternative 1A, operation of the intakes would not affect river water levels to an extent that would be visible or result in changes to the existing visual quality or character.

***CEQA Conclusion*:** Maintenance of the facilities (i.e., fish screens, operable barriers, pumping plant and transmission lines) would be required periodically and would involve painting, cleaning, and repair of structures; dredging; vegetation removal and care along embankments, and vegetation removal within transmission line ROWs. All activities would maintain the visual character of the facilities, once built, and would not act to further change the visual quality or character of the facilities or surrounding visual landscape during operation. This includes maintaining and cleaning the facilities and keeping transmission line ROWs cleared of vegetation; dredged canals would appear the same after the activity is complete. Therefore, the physical act of maintenancing the facilities would be the primary visible element during operation. These activities would require little to heavier equipment to maintenance facilities. However, heavy equipment associated with agricultural production and levee maintenance are common in the area and maintenance activities would not differ greatly in the types of equipment and movements seen in the agricultural/leveed landscape. In addition, maintenance activities are anticipated to occur within a short period of time and cease when complete. These visible maintenance activities would be temporary, intermittent, and short-term impacts on the existing visual quality and character of the affected areas during operation and would be considered less than significant. Thus, overall, Alternative 9 would have a less-than-significant impact on existing visual quality and character during maintenance and operation of the facilities in the study area. No mitigation is required.