

Chapter 24 Visual Resources

24.1 Introduction

This chapter describes the environmental setting, methods of analysis, and impact analysis for visual resources that would potentially be affected by the construction and operation of the Project. Visual resources are defined as all objects (artificial and natural, moving and stationary) and features (e.g., landforms and water bodies) visible on a landscape. These resources add to or detract from the scenic quality of the landscape (i.e., the visual appeal of the landscape). The study area for visual resources consists of foreground (up to 0.5 mile from the viewer) and middleground (from 0.5 mile to 3 miles from the viewer) views of the Project viewshed. A viewshed is the area that is visible from a particular location (e.g., an overlook) or sequence of locations (e.g., a roadway or trail). Therefore, the Project viewshed includes areas where aboveground Project facilities would be visible, where existing aboveground features (e.g., trees or structures) would be modified to accommodate aboveground and underground Project facilities, and where Project features or modifications would be visible to sensitive visual receptors.

Background views (more than 3 miles from the viewer) were not evaluated because Project facilities would not typically stand out at that distance (Federal Highway Administration 2015:6-4; Litton 1968:3-5). However, the study area was assessed to determine if there were visual features in the background, such as views of mountain ranges, that could be affected by the Project. No such features were identified and impacts to features in the background are not discussed further. The Project activities in Tehama County would consist solely of the placement of the two additional pumps into existing concrete pump bays at the RBPP. The pumps would be manufactured offsite and there would be minor site preparation needed. Sensitive viewers would not be affected by installation of the pumps because the tall fish screen creates a visual barrier that prevents views of the pumps from the Sacramento River and the RBDD Recreation Area. Changes at the RBPP would not be visible to degrade the existing visual character or quality of public views of the site and its surroundings or to affect sensitive viewers. Therefore, this chapter does not contain additional discussion of visual resources associated with the RBPP and Tehama County.

Operations have the potential to influence reservoir elevations and river levels. However, as indicated in CALSIM hydrologic modeling results in Chapter 5, *Surface Water Resources*, elevation changes at SWP and CVP reservoirs are relatively small and would fall within historical hydrologic fluctuations for Shasta Lake, Lake Oroville, Folsom Lake, and the San Luis Reservoir (Tables 5-11, 5-22, 5-24, and 5-29, respectively). These fluctuations would not be perceptible by recreationists and other viewers and are not discussed further. In addition, changes in river flows are relatively small and would fall within historical ranges in the Sacramento, Feather, and American Rivers (Appendix 5B2, *River Operations*, Tables 5B2-10-1a to 5B2-10-

4c, 5B2-11-1a to 5B2-11-4c, 5B2-12-1a to 5B2-12-4c, 5B2-13-1a to 5B2-13-4c, 5B2-22-1a to 5B2-22-4c, 5B2-27-1a to 5B2-27-4c). These changes would not be perceptible by recreationists and other viewers, and therefore are not discussed further. As described in Chapter 2, the Project would not affect or result in changes in the operation of the Central Valley Project, Trinity River Division facilities (including Clear Creek) and thus Trinity River resources are not discussed or analyzed further in this chapter. As discussed in Chapter 16, *Recreation*, the regulating reservoirs located below the major CVP and SWP reservoirs (Keswick Reservoir, Thermalito Complex, and Lake Natoma) receive highly variable flows that result substantial fluctuations in surface water elevations on a daily and hourly basis. Changes in the operation of upstream reservoirs with implementation of the Project would not affect the monthly mean elevations of these regulating reservoirs. Elevation-related impacts on visual resources in these regulating reservoirs are therefore not discussed further in this chapter.

Key concepts for the visual assessment include the visual character of an area, including natural and cultural features. The regulatory context of an area, such as land management objectives on public lands, is an important consideration for understanding the area's visual character. Appendix 4A, *Regulatory Requirements*, identifies the policies pertaining to aesthetic and visual resources that are applicable to the Project. The study area is comprised of multiple viewer groups, which are identified below, that have varying sensitivities to the visual character and quality of their surroundings. These viewers include recreationists using open space or natural areas; motorists experiencing views as they travel through the landscape on local roadways; and residents, agricultural workers, and industrial and commercial viewers that border areas where aboveground Project facilities would be built and where existing aboveground features (e.g., trees or structures) would be modified to accommodate aboveground and underground Project facilities. Visual preferences, or what people in the study area like and dislike about the area's visual character, define the study area's visual quality. Visual quality serves as the baseline for determining the degree of the Project's visual impacts. The Project is assessed to determine its visual compatibility against baseline conditions, viewer sensitivity to those changes, and whether those impacts would be adverse, beneficial, or neutral (Federal Highway Administration 2015:5-11-5-12).

For the purpose of this analysis and as identified in Chapter 2, *Project Description and Alternatives*, it is assumed that all offsite aggregate would come from existing active quarry locations. Because these quarries are already a part of the existing visual environment and affected viewers associated with these quarries would not distinguish a notable change in operations at the quarries, nor associate any changes with the Project, there would be no impact to the existing visual character and quality of these sites or result in changes in light and glare. Therefore, offsite quarries are not discussed further.

Tables 24-1a and 24-1b below summarize the CEQA determinations and NEPA conclusions for construction and operation impacts, respectively, between alternatives described in the impact analysis. As identified in Appendix 4A, *Regulatory Requirements*, there are no federal, state, or locally designated scenic vistas or scenic roadways that would be affected by the Project. Therefore, the Project would not affect these resources, and they are not discussed further.

Table 24-1a. Summary of Construction Impacts and Mitigation Measures for Visual Resources

Alternative	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact VIS-1: Substantially degrade the existing visual character or quality of public views of the site and its surroundings			
No Project	NI/NE	-	NI/NE
Alternative 1	S/SA	No feasible mitigation measures identified	SU/SA
Alternative 2	S/SA	No feasible mitigation measures identified	SU/SA
Alternative 3	S/SA	No feasible mitigation measures identified	SU/SA
Impact VIS-2: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area			
No Project	NI/NE	-	NI/NE
Alternative 1	LTS/NE	-	LTS/NE
Alternative 2	LTS/NE	-	LTS/NE
Alternative 3	LTS/NE	-	LTS/NE

Notes:

NI = CEQA no impact

LTS = CEQA less-than-significant impact

S = CEQA significant impact

SU = CEQA significant and unavoidable

NE = NEPA no effect or no adverse effect

SA = NEPA substantial adverse effect

Table 24-1b. Summary of Operations Impacts and Mitigation Measures for Visual Resources

Alternative	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact VIS-1: Substantially degrade the existing visual character or quality of public views of the site and its surroundings			
No Project	NI/NE	-	NI/NE
Alternative 1	LTS/NE	-	LTS/NE
Alternative 2	LTS/NE	-	LTS/NE
Alternative 3	LTS/NE	-	LTS/NE
Impact VIS-2: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area			
No Project	NI/NE	-	NI/NE
Alternative 1	LTS/NE	-	LTS/NE
Alternative 2	LTS/NE	-	LTS/NE
Alternative 3	LTS/NE	-	LTS/NE

Notes:

NI = CEQA no impact

LTS = CEQA less-than-significant impact

NE = NEPA no effect or no adverse effect

24.2 Environmental Setting

The environmental setting for visual resources is described for the larger, regional landscape comprised of Glenn, Colusa, and Yolo Counties, and the Project landscape. The Project landscape is organized into areas where Project facilities would be built to create one Project viewshed and to focus on areas where construction and operations would result in visible changes to the landscape. These viewsheds may range in size and may be isolated to an area or be linear in nature.

Appendix 24A, *Landscape Character Photos and Associated Maps*, contains Landscape Character Photos and associated maps from the 2017 Draft EIR/EIS, as well as Landscape Character Photos from 2021 and associated maps for the Dunnigan Pipeline. Appendix 24B, *Regional and Project Landscape Description*, provides detailed discussion on the regional and Project landscapes.

24.2.1. Regional Landscape

The regional landscape extends south from the northern end of the Sacramento Valley to Yolo County, and is bordered by the Coast Range, Klamath Mountains, Cascade Range, and Sierra Nevada. The setting for the regional landscape is described in terms of the natural and cultural landscape. The natural and cultural landscape consists of urban development in relatively flat areas that are associated with small cities and towns (e.g., Proberta, Orland, Williams, and Willows) and larger cities (e.g., Woodland and West Sacramento), rural residences beyond the borders of the communities, undeveloped open space, agricultural land (crops and orchards), industrial and highway commercial land uses along the Interstate 5 (I-5) and State Route (SR) 99 corridors, and recreation areas. Away from the town centers, fewer roadways exist and public access to lands is limited.

The western and eastern portions of the region consist of undulating hills of grassland and oak woodland terrain (e.g., Dunnigan Hills) that transition to mountainous forested terrain. In the lowlands, the landscape is characterized by grassland and woodland vegetation, with occasional wetlands and riparian areas. The agricultural landscape is dominated by crops (e.g., rice, almonds, vegetables, tomatoes, wheat, and hay), rangeland livestock, and ancillary equipment and infrastructure (e.g., outbuildings, tractors, irrigation systems, and drainage works). The attributes of the landscape change over the course of a year in response to seasonal changes and weather. The grasslands and cultivated areas of the region are a lush green in spring and early summer; as the hot weather continues, the grasslands turn a honey-brown hue, and the crops mature. Land use patterns vary according to the time of year due to farming activities that result in the presence or absence of varied agricultural crops.

Water features in the three counties contribute to the regional landscape and consist of numerous creeks, tributaries, irrigation canals and ditches, and wetlands associated with protected natural areas. Notable water features in the region include the Sacramento River, Black Butte Lake, Stony Creek, Stony Gorge Reservoir, Funks Reservoir, Cache Creek, and the Deep Water Ship Channel. The Yolo Bypass is a large seasonal wetland that resembles a bay when filled with water in the winter.

There are no officially designated scenic vista points in Glenn, Colusa, and Yolo Counties. These counties do contain rural areas and viewsheds with scenic value, including views of the Sacramento River, streams, and other watercourses; agricultural landscapes on the valley floor; glimpses of wildlife; and views of foothill, ridgeline, and mountain areas that include Snow Mountain, the Orland and Sutter Buttes, and Mount Lassen. Views of the rural night skies, trees, rock outcroppings, and historic structures further contribute to scenic resources in the counties. Other regional scenic resources include the Sacramento National Wildlife Refuge (NWR), Colusa NWR, Delevan NWR, Sacramento River Wildlife Area (WA), Llano Seco Unit of the Upper Butte Basin WA, Colusa-Sacramento State Recreation Area, and the Mendocino, Trinity, and Lassen National Forests.

The visual quality of the three counties ranges from moderate to high due to the presence of developed areas combined with large agricultural areas that are backdropped by mountains and the prominence of natural areas within the counties. Existing sources of light and glare in the counties include residential, agricultural, commercial, and industrial development; vehicles on roadways; and safety lighting on tall structures (e.g., electrical transmission towers, cellular towers).

24.2.2. Project Landscape

Evaluation of the Project landscape was conducted by using aerial and satellite mapping and street view imagery widely available to the public. The evaluation also utilized Landscape Character Photos and associated maps from the 2017 Draft EIR/EIS and a current (i.e., 2021) set compiled during preparation of this RDEIR/SDEIS (Appendix 24A). The setting for the Project landscape is described in terms of the natural and cultural environments and the resulting natural harmony, where viewers inherently evaluate and determine if the composition is harmonious or inharmonious, and cultural order, where viewers inherently evaluate and determine if the composition is orderly or disorderly, are established (Appendix 24B). Natural harmony and cultural order are combined to determine the overall visual quality. Visual quality is a function of what the viewer wants or expects to see and what is actually seen. If people see what they want or expect to see, then the visual quality is good or high because the viewer is pleased. However, if what is seen is lacking or not what is expected, then visual quality is poor or low because the viewer is disappointed (Federal Highway Administration 2015:5-12).

To evaluate the change in the visual environment from baseline to Project conditions, the analysis provides descriptive ratings for natural harmony, cultural order, visual quality, and light and glare levels that range from very low to very high. A very high rating for natural harmony, cultural order, and visual quality corresponds to more pristine natural environments that are untouched by humans or cultural and project environments that are extremely well-designed. As such, higher ratings represent landscape compositions that are vivid and that may evoke feelings of awe and wonderment. A very low rating for natural harmony, cultural order, and visual quality corresponds to highly disjunct landscapes that have been haphazardly altered by humans. As such, lower ratings correspond to landscape compositions that may evoke negative emotional responses in viewers. A moderate rating for natural harmony, cultural order, and visual quality corresponds to landscapes that tend to be very common and similar to other landscapes in the region or area. In general, the more a composition meets visual preferences and expectations, the more positive the viewer response. The more positive the viewer response is, the more

memorable, or vivid, the composition becomes. For example, a more positive viewer response occurs when a development or roadway is not perceived as an intrusion but is seen as an integrated element belonging to a harmonious and orderly landscape.

Similarly, light and glare for the Project landscape is evaluated and rated to determine the potential for impacts. A very low rating for light and glare often corresponds to forested landscapes with dense cover, where artificial light is not present. A very high rating for light and glare often corresponds to either natural conditions with little vegetative or landform cover with typically bright, sunny weather conditions and large bodies of water or lightly colored expanses of natural surfaces (e.g., snow cover, desert sands) or highly developed urban environments with a substantial amount of reflective surfaces and high levels of artificial lighting.

The existing Project landscape is summarized in Table 24-2. This table identifies the alternative component/facility and the existing visual resources of importance, affected viewer groups, the overall existing visual character and quality descriptive ratings, and the light and glare descriptive ratings associated with each location.

Table 24-2. Summary of Existing Project Landscape

Alternative Component/Facility	Existing Visual Resources of Importance	Viewer Groups	Overall Existing Visual Character and Quality Descriptive Rating	Light and Glare Descriptive Rating
Sacramento River Diversion – Hamilton City Pump Station	Sacramento River Riparian Areas	Recreationists (including water-based recreationists on the Sacramento River) Hamilton City Pump Station employees Agricultural workers	Moderately high	Daytime light and glare levels are moderate Nighttime light and glare levels are low
Sacramento River Conveyance to Regulating Reservoirs	Creeks Foothills	Drivers Recreationists Residents Employees of businesses adjacent to the canals Agricultural workers	Moderate	Daytime light and glare levels are moderately low Nighttime light and glare levels are moderate to moderately low
TRR East Complex	Foothills and mountains	Drivers Recreationists Residents Employees at the adjacent almond processing plant Agricultural workers	Moderate	Daytime light and glare levels are moderate Nighttime light and glare levels are low
Funks Reservoir and TRR West Complex	Foothills and mountains	Agricultural workers Reservoir operations and maintenance workers	Moderately high	Daytime light and glare levels are moderate Nighttime light and glare levels are low
Sites Reservoir and Related Facilities	Foothills and mountains	Residents Ranch workers Drivers Recreationists	High	Daytime light and glare levels are moderate to moderately high Nighttime light and glare levels are low
Conveyance Pipelines and Tunnels	Foothills and mountains	Drivers Recreationists (including water-based recreationists on the Sacramento River) Agricultural workers Employees at Richie Bros. Auctioneers	Moderate	Daytime light and glare levels are moderate Nighttime light and glare levels are moderately low
South Road Alignment and Huffmaster Road Realignment	Foothills and mountains	Drivers Recreationists	High	Daytime light and glare levels are moderate to moderately high Nighttime light and glare levels are low

Table Notes:

The Overall Existing Visual Character and Quality Descriptive Rating is a combination of the descriptive ratings for natural harmony and cultural order for each alternative component/facilities. The existing visual character and quality are described in terms of the natural and cultural environments and the resulting natural harmony, where viewers inherently evaluate and determine if the composition is harmonious or inharmonious, and cultural order, where viewers inherently evaluate and determine if the composition is orderly or disorderly, are established.

24.3 Methods of Analysis

A visual impact is the creation of an intrusion or perceptible contrast that affects the scenic quality of a viewscape. A visual impact can be perceived by an individual or group as either positive or negative, depending on a variety of factors or conditions (e.g., personal experience, time of day, weather, seasonal conditions). The BMPs described in Appendix 2D, *Best Management Practices, Management Plans, and Technical Studies*, are incorporated into the analysis of potential construction and operation impacts on visual resources. The Project design features in BMP-17, Implementation of Visual/Aesthetic Design, Construction, and Operation Practices, stipulate that the Project would incorporate high-quality site design that does not detract from the rural nature of the surroundings, that features complement the natural environment, and that structures are painted to recede into views. BMP-17 also specifies that the Project would involve the use of native trees and shrubs for screening at the Project facilities that may substantially degrade the existing visual character of the site(s), where screening is implemented in a manner that does not compromise facility access and safety or conflict with safety requirements and regulations. BMP-22, Development and Implementation of a Construction Noise Abatement Plan, is included in the impact analysis because it is relevant to the analysis of potential impacts from light and glare.

The following affected viewer groups and associated sensitivities, identified in parenthesis, have been identified for the Project:

- **Residential Viewers (High Sensitivity):** Rural residents in the study area have potential longer-term exposure to views that would be affected by the Project. Residential viewers tend to have an invested interest and sense of ownership over nearby visual resources.
- **Recreational Viewers (High Sensitivity):** Recreational viewers using parks, waterways, roadways, trails, and canal and Sacramento River levees are likely to seek out natural areas and scenic views that could be affected by the Project for both shorter and longer durations. Recreationists are more likely to value the natural environment, appreciate the visual experience, and have a strong sense of ownership over the foothill landscape and waterways and corridors they use for recreation and that are highly valued throughout the greater Sacramento Valley area.
- **Road Travelers (Moderate to High Sensitivity):** Travelers on local roadways pass areas that would be affected by the Project. These travelers use roadways in the study area at varying speeds; normal highway and roadway speeds differ based on the traveler's familiarity with the route and roadway conditions (e.g., rain, curvature and slope of the road). Single views are typically of short duration, except on straighter stretches where views last slightly longer. The passing landscape becomes familiar to viewers who travel routes frequently, and their attention typically is not focused on the passing views but on the roadway, roadway signs, and surrounding traffic. Viewers who travel local routes for their scenic quality generally possess a higher visual sensitivity to their surroundings because they are likely to respond to the natural environment with high regard and as a holistic visual experience. Similarly, viewers on private dirt track routes are likely to possess a higher visual sensitivity to their surroundings because they are likely to respond

to the natural environment with a greater sense of ownership and have a high regard for the natural setting.

- **Agricultural Workers (Moderate to Moderately High Sensitivity):** Agricultural workers come into direct visual contact with areas that would be affected by the Project on an intermittent basis. Workers in the Sacramento Valley are likely to have moderate sensitivity to changes in the landscape because they are generally focused on tasks at hand and views tend to be somewhat homogeneous. However, workers in the foothills are likely to have moderately high sensitivity to changes in the landscape because although they focus on tasks at hand, their views are of a higher quality and they are more likely to stop and appreciate their surrounding views.
- **Industrial & Commercial Viewers (Moderate Sensitivity):** Viewers from industrial and commercial facilities situated throughout the study area have semi-permanent views of areas that would be affected by the Project. Employees and patrons are likely to have moderate sensitivity to changes in the landscape because they are generally focused on tasks at hand (i.e., working or shopping).

24.3.1. Construction

Construction impacts for visual resources include impacts associated with the act of construction and the presence of visible Project elements and built features immediately following the completion of construction.

24.3.2. Operation

Operational impacts for visual resources include impacts associated with daily operations and maintenance of facilities that would be visible to the general public and occur after the Project is built and functioning. These operational impacts would include, but are not limited to, painting facilities, dredging canals, using nighttime lighting, maintaining vegetation, causing glare from reservoir surfaces, and fluctuating water levels from reservoir operations.

24.3.3. Thresholds of Significance

An impact on visual resources would be considered significant if the Project would:

- In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings.
- Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

24.4 Impact Analysis and Mitigation Measures

Impact VIS-1: Substantially degrade the existing visual character or quality of public views of the site and its surroundings

No Project

Under the No Project Alternative, the existing landscape of the Antelope Valley in Colusa and Glenn Counties would not be anticipated to undergo substantial modification, due to the rural nature of the area and the limited potential for growth and development. As such, there would be no substantial degradation of the existing visual character or quality of public views.

Significance Determination

The No Project Alternative would not degrade the existing visual character or quality of public views; therefore, there would be no impact/no effect on visual character or quality.

Alternatives 1 and 3

Construction

Sacramento River Diversion—Hamilton City Pump Station

Changes near the Hamilton City Pump Station would include constructing a new GCID Main Canal head gate structure by installing 5,000 cubic yards of fill and three automated gates upstream of the existing head gate structure, which would remain and continue to serve as a bridge between County Road 203 and County Road 205. Construction activities would be temporary and introduce heavy equipment and associated vehicles, including backhoes, compactors, tractors, and trucks, into the viewsheds of all viewer groups. This equipment is consistent with views of heavy equipment used in adjacent farming operations and during operations and maintenance of existing facilities. Once built, there would be a slight increase in the visual presence of water control infrastructure located at the site. However, the new head gate structure would be in keeping with existing facilities at the site and would not greatly stand out in the landscape or detract from views, decrease visual character or quality, or negatively affect associated viewers. Therefore, construction at the Hamilton City Pump Station would not substantially degrade the existing visual character or quality of public views of the site and its surroundings or adversely affect highly sensitive viewers.

Sacramento River Conveyance to Regulating Reservoirs—GCID System Upgrades

Construction activities associated with GCID system upgrades would be temporary and introduce heavy equipment and associated vehicles, including backhoes, compactors, tractors, and trucks, into the viewsheds of all viewer groups. This equipment is consistent with views of heavy equipment used in adjacent farming operations and during operations and maintenance of existing facilities. The GCID Main Canal upgrades would occur within existing rights-of-ways and construction would not permanently remove any existing crops. As a result, these changes would only result in minor visual changes that are in keeping with existing features in the landscape that are associated with the canal and the existing siphons. Therefore, construction of the GCID system upgrades would not substantially degrade the existing visual character or

quality of public views of the sites and their surroundings or adversely affect highly sensitive viewers.

Terminal Regulating Reservoir East

All viewers in the TRR East area are used to heavy machinery and truck traffic associated with agricultural operations; therefore, construction traffic would not greatly affect viewers in the study area. The closest rural residences are located over 0.25 mile from the study area and are buffered from the site by mature trees associated with residential landscaping. Therefore, construction activities would not result in notable visual disturbances to rural residences. Because the TRR East would be built over several construction seasons, construction activities would not stretch out over a contiguous period and would only create temporary visual effects on and from the study area during the construction periods. Therefore, the effect on aesthetics and visual quality would not substantially degrade the existing visual character or quality of views of the site due to the temporary nature of construction, transient nature of viewers passing by the study area, and viewers' familiarity with heavy equipment in the study area for working agricultural lands.

Alternatives 1 and 3 would require that approximately 150 acres of existing agricultural lands be replaced with the TRR East and built structures, TRR East PGP, and switchyard. Current large-scale agricultural operations, the existing gate control structure, and the GCID Main Canal contribute to an existing visual environment that contains features consistent with the elements that would be installed under Alternatives 1 and 3.

The height of the TRR East embankments would be similar to the height of the GCID Main Canal berms immediately north and south of Funks Creek. The embankments would obscure views of the reservoir's water surface so the earthen, grassy berms would be the primary feature visible from McDermott and Lenahan Roads. The embankments would also partially obscure scenic views toward the Coast Range, momentarily, for roadway travelers and recreationists on local roads. Once viewers pass by the site, however, the Coast Range would be visible again so the embankments would not substantially affect or detract from scenic views. The closest rural residence is over 0.25 mile from the TRR East and is surrounded by mature trees. Therefore, the embankments would not obstruct views of the Coast Range for these residential viewers.

In addition to the embankments, built features associated with the TRR East would also be visible on approach from McDermott Road. The pump station building, switchyard, and pump facility would be seen by roadway travelers and recreationists traveling south on McDermott Road, approaching the site from the north. The spillway, creek outlet, TRR East inlet, and the GCID flow control structure would be seen by roadway travelers and recreationists traveling north on McDermott Road, approaching the site from the south. Views of these features would be intermittent and brief as roadway travelers and recreationists pass by on local roads; however, these facilities would introduce industrial-looking features into the agrarian landscape.

A new segment of 230-kilovolt (kV) line would be constructed to connect into either the Western Area Power Administration's (WAPA) or Pacific Gas and Electric Company's (PG&E) existing 230 kV transmission lines that run north-south through the study area. The new, north-south portion of the transmission corridor would parallel the selected existing transmission corridor

alignment. In addition to the north-south segment that would be constructed, an east-west segment of 230 kV transmission lines would be constructed to connect power between TRR East and Funks Reservoir. Construction would occur in a linear fashion, require minimal disturbance, and would be completed in a short period of time. The new transmission corridors would consist of a single line of steel monopoles that would be 100 to 150 feet tall. The existing transmission poles are lattice steel. However, the portion of the east-west alignment between TRR East and the existing PG&E 230 kV line would be double circuit and would have two parallel sets of steel monopoles. The majority of the new transmission corridor would be located in conjunction with existing transmission lines and would not stand out or be noticeable from roadways traveled by the public, such as McDermott Road, which are located at least 1.5 miles away. McDermott Road and other nearby public roadways are not designated scenic routes; however, the County of Colusa acknowledges that rural roadways provide viewsheds with high scenic value due to the scenic beauty associated with their rural character and views to the surrounding mountains and waterways (Colusa County 2012). Therefore, changes seen from these roadways are evaluated to determine if the new transmission lines would negatively affect views associated with nearby public roadways. The most visible portion of the transmission corridor would be seen from McDermott Road where the double segment portion of the east-west alignment is located a half mile away from the roadway. However, wooden utility poles that are approximately 60 feet tall line McDermott Road and are prominent in the immediate foreground. At a half mile away and with existing utilities being prominent in the immediate foreground, the new utility poles and lines are not likely to be a focal point in views when seen in conjunction with the other facilities associated with the TRR East, even though they would be taller than the existing poles and lines near McDermott Road. Therefore, it is anticipated that the new poles would be in keeping with the existing visual character of the study area and/or would not detract from or degrade the quality of views.

Structures built during construction would affect views and result in permanent visual impacts; however, changes to views would not be substantial due to the limited exposure of these structures by viewers. The Authority will implement BMP-17 during construction of Alternatives 1 and 3 to avoid and minimize permanent and temporary impacts on visual resources. This BMP will limit direct impacts on visual resources by incorporating high-quality site design that does not detract from the rural nature of the surroundings, ensuring that features complement the natural environment and that structures are painted to recede into views. BMP-17 will further limit direct impacts by using native trees and shrubs for screening at the Project facilities that may substantially degrade the existing visual character of the sites. This screening will be implemented in a manner that does not compromise facility access and safety or conflict with safety requirements and regulations. Therefore, implementation of BMP-17 would ensure that TRR East built structures would recede into views, that these features would be consistent with existing built features located nearby, and that the quality of views from McDermott Road would be maintained.

Funks Reservoir

Construction of facilities at Funks Reservoir would include structures built to support the operation of Sites Reservoir. These facilities would include the transition manifold structure, an electric substation, administration and operations building with restricted access and not open to the public, and a maintenance building for reservoir operations. Construction of facilities at

Funks Reservoir would not be visible because public access to the reservoir is and would continue to be restricted. Drivers and recreationists traveling on nearby roadways cannot see the reservoir due to distance and intervening vegetation and topography. In addition, no residential viewers have views of the Funks Reservoir. Even once built, the Funks PGP and electrical substation would not be visible or alter the existing visual character and quality of view seen by the public. Therefore, construction of the Funks Reservoir would not substantially degrade the existing visual character or quality of public views of the sites and their surroundings or adversely affect highly sensitive viewers.

Sites Reservoir and Related Facilities

At Sites Reservoir and related facilities, public views of the construction activities, materials, and equipment would be partially obstructed by the terrain and limited to motorists on portions of Lurline Road, and Huffmaster Road. For these motorists, vegetation removal activities; grading and construction of Alternatives 1 and 3 features; presence of construction equipment, materials, and workers; and the generation of dust within the Alternatives 1 and 3 footprint would degrade existing scenic views of the valley floor, hilly grasslands, oak woodlands, and rocky outcrops.

Road relocations would not permanently block or impair views of the surrounding landscape, and sensitive receptors with views of the new roadways would generally be limited to motorists using these roads. In addition, the bridge would be urban infrastructure in an area that is largely characterized by its rural and undeveloped open space. The bridge would be a tall viaduct-looking structure rising above the surrounding landscape until the reservoir is fully inundated. The bridge would be 510 feet high and would be designed to be 2 feet above the maximum flood elevation plus wave height. Maximum flood elevation plus wave height is set at 10 feet above the normal water surface elevation of 498 feet. One section of the bridge would provide 12-foot vertical clearance above the normal water surface elevation for the Colusa County Sheriff's patrol boat passage. The bridge would be visually dominant due to its form and introduction of a new line to the landscape, which may cause the bridge to be perceived as lacking harmony and cohesiveness within the existing setting together with other facilities included in Alternatives 1 and 3. However, the construction of the bridge would also increase visual access to the lake-like reservoir and would provide for high quality views toward the surrounding landscape.

Views of the lake would vary depending on the season and Water Year type. In Wet Water Years, water surface elevations would be 467–488 feet under Alternative 1A, 463–486 feet under Alternative 1B, and 456–484 feet under Alternative 3. During Dry Water Years, water level elevations could drop as much as 82 feet and be 399–450 feet under Alternative 1A, 389–443 feet under Alternative 1B, and 430–474 feet under Alternative 3. Years with lower water elevations would result in views that are typical for reservoirs throughout northern California, where viewers are used to and would expect to see exposed striations, or “bathtub rings”, due to fluctuating water levels. Sensitive receptors with a view of the bridge would include recreationists from the Stone Corral Creek Recreation Area and motorists on and approaching the bridge; these would be introduced sensitive receptors that would not likely visit the reservoir location without the introduction of the new facilities. Similarly, other access roads such as the Stone Corral Creek, Peninsula Hills, and recreational access roads; Saddle Dam Road; Comm Road South; and other maintenance roads would result in minor impacts to existing grasslands and oak woodlands from construction of the roadways. However, impacts would be minimal, and

the new roads would provide visual access to high quality views of oak woodland and grassland areas where no public access currently exists. Improvements to existing roadways that would be used for access along Road 68, Road D, Road 69, Delevan Road, and McDermott Road would be limited to shoulder improvements, intersection widening, and structural improvements that would not be substantial and would blend with the existing roadway corridors, largely retaining the rural character of these roadways. The day-use boat ramp access road would not result in impacts because it would utilize the existing Sites Lodoga Road.

In addition to the visual access created by the bridge and other access and maintenance roads, the three recreational areas would create new areas of public visual access; offer new recreation opportunities in scenic lakeside and island settings, consistent with the Colusa County 2030 General Plan; and provide access to water-based recreation that is likely to be valued in the region. These areas would also partially retain existing oak woodlands that could be accessed by recreationists using these areas.

During construction, the area would remain of moderate visual quality for the following reasons: (1) the dams and dikes would be constructed primarily of excavated soil and rock and would blend within the landscape that already features mounded, rolling terrain and earthen embankments to create watering ponds; (2) the existing natural character of the recreation areas would be generally maintained; (3) the views to the surrounding foothills would be retained; (4) public access to remaining facilities during construction would be prohibited so visual access would be limited; and (5) some relatively large areas of open grassland would remain intact. In addition, construction-related changes to the landscape would become less visible over time as the reservoir begins to fill. The initial filling of the reservoir would occur over several years, during which time the area would transition from open grasslands to a deepening inundated reservoir that may attract birds and other regional riparian species. During this time, the inundation area would be of moderate to moderately high visual quality. Upon completion of the initial filling of the reservoir, however, the full Sites Reservoir would have the appearance of a large lake during Normal to Wet Water Years and would be of moderately high visual quality. In addition, relatively few structures would be built to support recreational facilities. These structures would include information kiosks, vault toilets in recreation areas, and the boat ramps. The Authority will implement BMP-17 during construction of Alternatives 1 and 3 to avoid and minimize permanent and temporary impacts on visual resources. This BMP will limit direct impacts on visual resources by incorporating high-quality site design that does not detract from the rural nature of the surroundings, ensuring that features complement the natural environment and that structures are painted to recede into views. BMP-17 will further limit direct impacts by using native trees and shrubs for screening at the Project facilities that may substantially degrade the existing visual character of the sites. This screening will be implemented in a manner that does not compromise facility access and safety or conflict with safety requirements and regulations. Therefore, implementation of BMP-17 would ensure that built structures associated with the Sites Reservoir would recede into views, that these features would be consistent with existing built features located nearby, and that the quality of views would be maintained. The measures in BMP-17 would not prevent the permanent change in visual character and quality as a result of the Project.

Colusa County 2030 General Plan Policy CC 1-5 protects the rural atmosphere and historic character of unincorporated communities and Policy CC 1-15 requires that the rural landscape be preserved and enhanced as an important scenic feature of the county. In addition, Policy CON 1-9 specifies minimizing oak tree removal through appropriate project design and building siting, Policies CON 1-22 and CON 1-23 seek to maintain and protect streams, creeks, and waterways in a natural state whenever possible through site planning, and Policy OSR 1-5 states that “new development should be designed and constructed to preserve open space features such as scenic corridors, wetlands, riparian vegetation, native vegetation, trees and natural resource areas where feasible and appropriate” (Colusa County 2012). The Sites Reservoir and associated facilities would not be consistent with these policies. However, Colusa County 2030 General Plan Policies LU 4-1 through LU 4-5 support the creation of the Sites Reservoir, maintaining roadway connectivity through the area, providing recreational opportunities in the county, and emphasize protecting and preserving natural resources, wildlife habitat, and open space (Colusa County 2012). Alternatives 1 and 3 are consistent with Policies LU 4-1 through 4-5 and, although not fully consistent with Policies CC 1-5, CC 1-15, CON 1-9, CON 1-22, CON 1-23, and OSR 1-5, Alternatives 1 and 3 would create a scenic open space resource with a visually appealing water feature that would otherwise not exist at this location.

Although the reservoir would eventually serve as a visual amenity to the region for future viewer groups, existing viewer groups associated with the site may respond negatively to the demolition of residential and ranch structures, removal of oak woodlands, and alteration of the visual character of the foothill environment in a manner that would replace it with the reservoir and associated features. Therefore, the Sites Reservoir associated with Alternatives 1 and 3 would substantially degrade the existing visual character and visual quality of the area and adversely affect viewers that would have high sensitivity to the resulting changes.

Conveyance Pipelines and Tunnels

All new pipelines and tunnels would be installed underground. Construction activities would be temporary and introduce heavy equipment and associated vehicles, including backhoes, compactors, tractors, and trucks, into the viewsheds of all viewer groups. This equipment is consistent with views of heavy equipment used in adjacent farming operations and during operations and maintenance of existing facilities. A narrow swath of vegetation would need to be removed from the alignments to accommodate pipeline and tunnel installation. This removal would affect grasslands, pastures, rice fields, and orchards crossed by the alignments.

Once the pipes and tunnels are installed in the trench, the trench would be backfilled and seeded. In addition, pipe jacking techniques using a tunnel boring machine would be used to install pipes under I-5, Richie Bros. Auctioneers, and Road 99W. There would be a total of three pits located on private land: one jacking pit and two receiving pits. It is anticipated that the jacking pit would be located on the Richie Bros. Auctioneers property between I-5 and Road 99W with one receiving pit on the west side of I-5 and the other on the east side of Road 99W. The pits would be backfilled and seeded. The pipelines and tunnels would be underground and would not be visible. The seeded areas would not stand out in locations where grassland areas, pastures, and rice fields would be affected. In addition, narrow swaths of removed trees from orchards would not stand out in views because they would appear similar to the linear canals, transmission corridors, and farm access roads that are very common in the study area. Therefore, construction

of the conveyance pipelines and tunnels would not substantially degrade the existing visual character or quality of public views of the sites and their surroundings or adversely affect highly sensitive viewers.

In addition, a new concrete intake and dissipation structure would be built at the TC Canal connection to the Dunnigan Pipeline and a concrete outlet and stilling basin would be constructed at the CBD. Once built, these features would be low-profile and would not stand out in views or substantially degrade the existing visual character and quality of the sites or adversely affect highly sensitive viewers.

Operation

Sacramento River Diversions, Sacramento River Conveyance to Regulating Reservoirs, and Conveyance Pipelines and Tunnels

The operations and maintenance activities associated with the Sacramento River diversions at the Hamilton City Pump Station would not differ greatly from existing conditions at these locations. Therefore, to affected viewers, there would be no perceptible change in operations and maintenance at these facilities.

Operational changes associated with the TC Canal and GCID Main Canal would result in an increase in water seen in the canals upstream of the Sites Reservoir generally during Wet, Above Normal, and Below Normal Water Years, primarily in the winter, to transport water from the Sacramento River for storage in the reservoir. During the Below Normal, Dry, and Critically Dry Water Years, an increase in water would generally be seen in canals downstream of the reservoir due to planned releases from the reservoir. These increased flows would improve the aesthetics due to the presence of water in the canals. Maintenance of facility upgrades associated with the TC Canal and GCID Main Canal would be consistent with existing management practices and appropriate for their service area. Therefore, maintenance activities would not differ greatly from existing conditions and to affected viewers there would be no perceptible change in the maintenance of the canals. Operations and remotely operated vehicle maintenance inspections associated with the pipelines and tunnels would not be visible because the pipes would be underground.

Overall, operations and maintenance occurring for the Sacramento River diversions, Sacramento River conveyance, and conveyance pipelines and tunnels would not substantially degrade the existing visual character or quality of public views of the sites and their surroundings or negatively adversely affect highly sensitive viewers.

Funks Reservoir and TRR East

Operation and maintenance at Funks Reservoir would not be visible because public access to the reservoir is restricted. Drivers and recreationists traveling on nearby roadways cannot see the reservoir due to distance and intervening vegetation and topography. In addition, no residential viewers have views of the Funks Reservoir. Accordingly, the Funks PGP and electrical substation would not be visible, and the associated operations and maintenance would not alter the existing visual character and quality of view seen by the public.

Similarly, operation and maintenance at TRR East would not be readily visible to the public because public access to the reservoir would be restricted. Drivers and recreationists traveling on McDermott Road would have limited views of the reservoir due to the reservoir berms along the roadway that would limit views of operations and maintenance activities. In addition, no residential viewers would have views of TRR East. The electrical substation would be visible from the roadway in the distant foreground, but operations and maintenance activities at the substation are not likely to stand out from this distance in passing. Overall, the associated operations and maintenance at TRR East would not alter the existing visual character and quality of view seen by the public.

Therefore, operations and maintenance of the Funks Reservoir and TRR East would not substantially degrade the existing visual character or quality of public views of the sites and their surroundings or adversely affect highly sensitive viewers.

Sites Reservoir and Related Facilities

Operation and maintenance of the Sites Reservoir would be visible to recreationists using the recreation areas and to motorists using the bridge and relocated road system. As described under the discussion of construction impacts, the recreational areas would offer new recreation opportunities in scenic lakeside and island settings, consistent with the Colusa County 2030 General Plan, and create new viewing opportunities. Similarly, the bridge would also increase visual access to the lake-like reservoir and would provide for high quality views toward the surrounding landscape.

Fluctuation of reservoir water levels would not greatly alter the visual character and quality at the Sites Reservoir during Above Normal to Wet Water Years, where visual quality would be high. During Dry to Critically Dry Water Years and in some summer months, drawdown of the reservoir could begin in early spring and continue through fall to meet Alternative 1 or 3 objectives. During this substantial reservoir drawdown, its shores would become exposed to reveal unvegetated areas and create drawdown striations (i.e., “bathtub ring” effect). Although the visual quality of the recreation areas would be retained, this would result in a temporary degradation in visual quality in views of the reservoir’s shoreline that would be visible to motorists using the bridge and relocated road system and to recreationists at the recreation areas and boating on the reservoir. However, despite the potential for the “bathtub ring” effect to occur during Dry to Critically Dry Water Years, such a visual effect is typical of many large-scale reservoirs that viewers are familiar with in northern California.

During operations and maintenance for Alternative 1 or 3, several of the facilities would be underground or underwater and would not be visible during operation, such as the I/O Works, and underwater maintenance activities would be conducted by diving crews or during dewatering events. Operation and maintenance activities at aboveground facilities would include inspections and repairs that would occur periodically throughout the operating period for Sites Reservoir. These activities would typically be of short duration and require few vehicles, equipment, and personnel. Operations and maintenance of new public access roads, the bridge, and maintenance access roads would appear similar to operations and maintenance activities occurring on other county roads in the region.

Overall, operations and maintenance of the Sites Reservoir and related facilities would generally not substantially degrade the existing visual character or quality of public views of the sites and their surroundings or adversely affect highly sensitive viewers given the type of inobtrusive activities that operation and maintenance would require.

CEQA Significance Determination and Mitigation Measures

Construction of most of the features associated with either Alternative 1 or 3 would blend with the existing landscape, would not affect sensitive viewers, or would include implementation of BMP-17 to minimize visual changes. However, although the Sites Reservoir would eventually serve as a visual amenity to the region for future viewer groups, it is conservatively assumed that the construction of the reservoir and its associated facilities under either Alternative 1 or 3 would substantially degrade the existing visual character and visual quality of the area and adversely affect existing viewers at this location. This degradation is because existing viewer groups associated with the site may be highly sensitive to changes that would occur at the site. These viewers may respond negatively to the demolition of residential and ranch structures, removal of oak woodlands, and alteration of the visual character of the foothill environment in a manner that would replace such features and transform the existing visual character to a reservoir and associated features even though the reservoir would serve as a visual amenity to the region for future viewer groups. Such a transformation in the visual character of the study area as a result of the central feature of Alternatives 1 and 3 cannot be mitigated. Therefore, impacts to the existing visual character and quality resulting from construction would be significant and unavoidable. No feasible mitigation is available to reduce the visual impacts from a new reservoir facility of this nature and magnitude.

Operation of either Alternative 1 or 3 would not result in a notable change to the visual environment because activities associated with operations and maintenance would not be visible, would not affect sensitive viewers, would blend with activities already occurring at or near the Alternatives 1 and 3 facilities, or would be within historical operational ranges for water levels at existing facilities. Therefore, impacts to the existing visual character and quality resulting from operation would be less than significant.

NEPA Conclusion

Construction and operation effects would be the same as described above for CEQA. The construction of Sites Reservoir and its associated facilities for Alternative 1 or 3 would substantially degrade the visual character and visual quality of the existing landscape and adversely affect existing viewer groups as compared to the No Project Alternative. Construction of Alternative 1 or 3 would have a substantial adverse effect on existing visual character and quality of the study area. Operations activities would not be visible, would blend with activities already occurring at or near the Alternatives 1 and 3 facilities, would be within historical operational ranges for water levels at existing facilities, and would not affect sensitive viewers as compared to the No Project Alternative. Operation of Alternative 1 or 3 would have no adverse effect on the existing visual character and quality of the study area.

Alternative 2

Alternative 2 would result in similar types of visual impacts to those described for Alternatives 1 and 3 except for modifications to several roads, the construction and operation of TRR West, and the extension of the Dunnigan Pipeline to the Sacramento discharge structure. Huffmaster Road and Sites Lodoga Road would be realigned, and the South Road would be constructed around the southern end of Sites Reservoir instead of the construction of a bridge over the reservoir. There would also be slight differences in the maximum water surface elevations of the reservoir between the alternatives because Alternative 2 would involve a smaller reservoir than Alternative 1 or 3.

Construction

Construction of TRR West would consist of constructing a main reservoir and extension reservoir, PGP, and substation located to the north of Funks Creek and approximately 1 mile west of McDermott Road. There are no sensitive viewers in this area and roadway travelers would not have a clear view of the location given the intervening orchards, topography, and distance. Similarly, the transmission lines and substation required for TRR West would be farther away from McDermott Road than TRR East under Alternatives 1 and 3. The Authority will implement BMP-17 during construction of Alternative 2 to avoid and minimize permanent and temporary impacts on visual resources. This BMP will limit direct impacts on visual resources by incorporating high-quality site design that does not detract from the rural nature of the surroundings, ensuring that features complement the natural environment and that structures are painted to recede into views. BMP-17 will further limit direct impacts by using native trees and shrubs for screening at the Project facilities that may substantially degrade the existing visual character of the sites. This screening will be implemented in a manner that does not compromise facility access and safety or conflict with safety requirements and regulations. Therefore, implementation of BMP-17 would ensure that TRR West built structures would recede into existing views and these features would be consistent with existing built features nearby. Therefore, construction activities would not result in notable visual disturbances to sensitive receptors.

Construction of South Road would be done in a manner that is consistent with roadway construction for Alternatives 1 and 3. Construction activities associated with installing the longer Dunnigan Pipeline for Alternative 2 would be similar to those described for its installation under Alternatives 1 and 3.

Construction of the Sacramento River discharge would occur adjacent to the Sacramento River. There are few land-based visual receptors near the Sacramento River discharge and most viewers would be water-based recreationists. Land-based viewers using SR 45, levees west of the river, and standing in the agricultural fields to the west of the levee would see a mound of fill covering the pipes associated with the outfall. This is because the horizontal and vertical pipes would have to be located outside of the levee prism. Water-based viewers on the river would see twenty 36-inch-diameter pipes at the top of the levee with a concrete stilling basin to capture the water coming down from the outfall of the pipes, which would then gently cascade down a concrete apron to the water surface. A temporary coffer dam would be for construction. The temporary coffer dam would ultimately be cut off and located below the river's water surface. Water would

cascade down the riprap between April and November, and valves on the ends of the outfall pipes would prevent outflowing water from spraying. Receptors would likely be disrupted by construction, because of the scale of features being installed. Land-based viewers would have direct views toward the mound covering the pipes once it is completed, although as noted there would be few land-based visual receptors. In addition, although the discharge would be located upstream of the Sycamore Slough outlet to the Sacramento River, the Sacramento River discharge would be much larger and prominent in views from the river due to the removal of riparian vegetation needed to construct the outfall, the number of outfall pipes, and the large area of riprap that would be present. Water-based viewers would have direct views of the large-scale Sacramento River discharge from the river. The Sacramento River discharge for Alternative 2 would have a greater visual effect than the CBD outlet for Alternatives 1 and 3 because the CBD does not have recreational boaters and the outlet would be much smaller and lower profile than the discharge.

The maximum water surface elevation of the reservoir under Alternative 2 would be approximately 20 feet lower than for Alternatives 1 and 3. However, the overall scale of the reservoir, and the resulting degree of visual impact to the landscape, would not greatly differ under Alternative 2 compared to Alternatives 1 and 3.

Overall, the construction of Alternative 2 would result in a slightly more notable difference in visual impacts when compared to Alternatives 1 and 3. The visual impacts would be slightly more adverse, with similar types and quantities of viewers being affected, because the Sacramento River discharge would be more prominent and have a greater impact on sensitive viewers than the CBD outlet (under Alternatives 1 and 3).

Operation

Once built, the South Road and other realigned roads would be operated and maintained in a manner that is consistent with existing local roadways, which is comparable to Alternatives 1 and 3. Operations and maintenance activities associated with the Sacramento River discharge would be temporary and periodic, would generally not require large equipment, and would not negatively affect viewers near the river. The maximum water surface elevation of the reservoir under Alternative 2 would be approximately 20 feet lower than for Alternatives 1 and 3. However, the overall scale of the reservoir, and the resulting degree of visual impact to the landscape, would not greatly differ under Alternative 2 compared to Alternatives 1 and 3. Lastly, all other maintenance and operation activities associated with common or similar facilities between Alternative 2 and Alternatives 1 and 3 (e.g., Funks Reservoir, TRR East, administration and operations building) would be similar and result in limited to no impacts on visual character or quality.

Overall, the operations and maintenance associated with Alternative 2 would not result in a notable difference in visual impacts when compared to Alternatives 1 and 3. The impacts to the existing visual character and visual quality would be essentially the same as described for Alternatives 1 and 3, and the same types and quantities of viewers would be affected.

CEQA Significance Determination and Mitigation Measures

Visual impacts from construction of Alternative 2 would be similar to the visual impacts from construction of Alternatives 1 and 3, with several distinctions. First, the maximum water surface elevation of the reservoir under Alternative 2 would be approximately 20 feet lower than for Alternatives 1 and 3. This would not be a notable difference and the overall perceived scale of the reservoir and the resulting degree of visual impact to the landscape would be the same under Alternative 2 compared to Alternatives 1 and 3. As with Alternatives 1 and 3, it is conservatively assumed that construction of the reservoir and associated facilities would result in a significant and unavoidable visual impact. No feasible mitigation is available to address the visual impacts of a reservoir facility of this nature and magnitude.

Access roads for Alternative 2 would be similar to those for Alternatives 1 and 3. However, Huffmaster Road and Sites Lodoga Road would be realigned, and the South Road would be constructed around the southern end of Sites Reservoir instead of a bridge being constructed over the reservoir. New roads would provide visual access to high quality views of oak woodland and grassland areas where no public access currently exists. Improvements to existing roadways would be limited to shoulder improvements, intersection widening, and structural improvements that would not be substantial and would blend with the existing roadway corridors, largely retaining their rural character. Therefore, impacts resulting from roadway construction and roadway improvements would be less than significant.

In addition, Alternative 2 would involve the Sacramento River discharge, and associated clearing of vegetation and installation of riprap, that are not part of Alternative 1 or 3. This would constitute a notable change to the Sacramento River and result in a significant and unavoidable visual impact from construction under Alternative 2. No mitigation is available to reduce the visual impacts from the nature and size of this feature.

Operation of Alternative 2 would be very similar to Alternatives 1 and 3 and therefore would not result in a notable change to the visual environment. The activities associated with operations and maintenance would not be visible, would not affect sensitive viewers, would blend with activities already occurring at or near the Alternative 2 facilities, or would be within historical operational ranges for water levels at existing facilities. Therefore, impacts to the existing visual character and quality of the study area resulting from operation would be less than significant.

NEPA Conclusion

Construction and operation effects would be the same as described above for CEQA. Similar to that of Alternative 1 or 3, the construction of Sites Reservoir and its associated facilities for Alternative 1 or 3 would substantially degrade the visual character and visual quality of the existing landscape and adversely affect existing viewer groups as compared to the No Project Alternative. In addition, construction of Alternative 2 would have a substantial adverse effect on the existing visual character and quality of the study area from the construction of the Sacramento River discharge as compared to the No Project Alternative. Operations activities would not be visible, would blend with activities already occurring at or near the Alternative 2 facilities, would be within historical operational ranges for water levels at existing facilities, and would not affect sensitive viewers as compared to the No Project Alternative. Operation of

Alternative 2 would have no adverse effect on the existing visual character and quality of the study area.

Impact VIS-2: Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area

No Project

Under the No Project Alternative, the operations of the existing TC Canal, RBPP, and GCID Main Canal would continue within their existing facilities and would not be modified. The existing landscape of the Antelope Valley in Colusa and Glenn Counties would not be modified to construct and operate Sites Reservoir and related facilities or the regulating reservoir complex. As such, there would be no additional lighting needed. Therefore, the No Project Alternative would not create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Significance Determination

There would be no impact/no effect under the No Project Alternative.

Alternatives 1 and 3

Construction

Construction equipment and vehicles associated with all Alternatives 1 and 3 components could be a temporary source of reflective daytime glare and nighttime light, and construction activities during early morning and evening hours would require the use of vehicle and perimeter lighting at all construction sites. High-intensity nighttime lighting would generally not be needed to illuminate temporary construction activities because construction activities at all locations would mostly occur during daylight hours (between 7:00 a.m. and 7:00 p.m.). However, nighttime and weekend construction may occur on an as-needed basis. The Authority will implement BMP-22 during construction of Alternatives 1 and 3 to avoid and minimize permanent and temporary impacts resulting from construction noise, which serve the dual purpose of avoiding impacts associated with light and glare. Nighttime construction associated with use of heavy equipment will generally be avoided between 7:00 p.m. and 7:00 a.m. This will greatly reduce the need for high-intensity nighttime lighting near residences because construction will not occur for much of the night. Barriers will also be constructed between noise sources and noise-sensitive land uses or existing barrier features (e.g., terrain, structures) to block sound transmission to noise-sensitive land uses, which includes residential land uses and residential viewers. These barriers will be designed to obstruct the line of sight between the noise-sensitive land use and onsite construction equipment and will also act to create a visual barrier between affected viewers and the Project. Such barriers would aid in filtering or preventing nuisance light from spilling on to adjacent properties and negatively affecting sensitive residential viewers during nighttime construction activities. In addition, BMP-22 specifies that any nighttime construction will be coordinated with residents. This would ensure that residential viewers know when to expect nighttime construction activities and that the Authority will make efforts to avoid doing nighttime construction during times that may be less convenient to adjacent residents. Also, BMP-17 requires all lighting needed during construction will be directed toward construction

activities to minimize glare impacts on humans and wildlife. This would aid in preventing nuisance light from spilling on to adjacent properties and negatively affecting sensitive residential viewers during nighttime construction activities. As a result of the BMPs, which greatly limit nighttime construction and prevent light spill, there would be no new sources of substantial daytime and nighttime light or glare during construction.

Operation

The primary features of Alternatives 1 and 3 operations that would result in changes to daytime and nighttime light and glare would be new water surfaces (discussed below), glare from built structures, or the introduction of new sources of light. However, structures will incorporate neutral or earth-toned colors or colors that blend with the nearby vegetation, such as browns and dark greens, which do not cause glare. In addition, Project operation will incorporate design measures to minimize the number of lights that will be used, ensure that appropriate lighting types are selected for their intended use (e.g., hooded wall mounts or bollard lighting on pathways versus overhead streetlights in parking lots), and utilize shielding to prevent nuisance glare and light spill. These design features would greatly limit the potential for light pollution. Further, the Project will limit the use of LED lighting to a color temperature that is no higher than 3,000 Kelvin, and this would prevent use of blue-rich with lamps (BRWL) that can cause increased light pollution, in order to further minimize nighttime light and glare.

Sacramento River Diversions, Sacramento River Conveyance to Regulating Reservoirs, and Conveyance Pipelines and Tunnels

No new lights would be introduced under Alternatives 1 and 3 at the Sacramento River diversions or GCID system upgrades would be nominal. Once built and in operation, all conveyance pipelines and tunnels would be underground and not visible to viewers. In addition, vegetation would be restored so that there would be no notable change to daytime or nighttime light and glare associated with conveyance pipelines and tunnels. As a result, there would be no notable change to daytime or nighttime light and glare associated with operation of the Sacramento River diversions, Sacramento River conveyance to regulating reservoirs, and conveyance pipelines and tunnels.

Funks Reservoir

Funks Reservoir would not be visible because public access to the reservoir is restricted. Drivers and recreationists traveling on nearby roadways cannot see the reservoir due to distance and intervening vegetation and topography. In addition, no residential viewers have views of the Funks Reservoir. Therefore, the Funks PGP and electrical substation would not result in changes to daytime light and glare seen by the public. Nighttime light and glare associated with the substation would be greatly reduced under Alternatives 1 and 3 through the same BMP-17 design features described above that would minimize the number of lights used, ensure that appropriate lighting types are selected based on their intended use, utilize shielding to prevent nuisance glare and light spill, and limit LED lighting to a color temperature no higher than 3,000-Kelvin to prevent the use of BRWL LED lighting. This would prevent ambient light glow from emanating over the foothills and illuminating areas that are currently dark. As a result, light and glare impacts would be less than significant.

Sites Reservoir and Related Facilities

Project design features in BMP-17 would ensure that building materials used to construct the facilities at the Sites Reservoir limit the amount of reflective daytime and nighttime glare under natural and artificial light conditions by requiring that structures receive surface treatments (e.g., paint, use of natural materials, colored concrete) that avoid the use of light colors that can lead to glare.

The permanent conversion of a vegetated landscape to a 1.5-MAF reservoir would introduce a new source of daytime and nighttime glare in the area that would be visible to motorists using the bridge and relocated road system and to recreationists at the recreation areas and boating on the reservoir. However, residences would not be located within direct view of the reservoir due to the Project buffer and future recreationists and motorists that would access the area could be accustomed to and amenable to glare associated with the reservoir's surface.

New sources of light and glare would also be introduced from the recreational uses in and around the reservoir, including artificial lighting from boating activities and nighttime safety lighting. Although the Colusa County 2030 General Plan supports the development of the Sites Reservoir, such lighting has the potential to be inconsistent with Policy OSR 1-14 (Colusa County 2012). This is because the County of Colusa acknowledges that artificial lighting within open space and agricultural areas can adversely affect the county's rural character (Colusa County 2012). In addition, such lighting also has the potential to be inconsistent with Glenn County General Plan Policy NRP-86, which identifies avoiding impacts associated with light and glare (Glenn County 1993). Views of the facilities, any permanent lighting installed, and associated operations and maintenance activities requiring lighting would be largely obstructed due to the area's terrain and lack of public access. Although boating activities on the reservoir would be limited to daytime hours and boat ramp areas would close at dark, nighttime safety lighting generally turns on at dusk and stays on throughout the night. Nighttime safety lighting may be associated with the dams, bridge, toilets, campsites, and parking areas. This lighting may be visible to motorists using the bridge and relocated road system (depending on location) throughout the night and to campers using campsites at the Peninsula Hills and Stone Corral Creek Recreation Areas and recreationists boating on the reservoir and using the recreation areas who are preparing to leave at dusk. However, nighttime light and glare would be greatly reduced under Alternatives 1 and 3 by the BMP-17 design features described above that would minimize the number of lights used, ensure that appropriate lighting types are selected, use shielding to prevent nuisance glare and light spill, and prevent the use of BRWL LED lighting. This would prevent ambient light glow from emanating over the foothills in an area that is currently dark and limit the amount of light that reflects against the water surface.

CEQA Significance Determination and Mitigation Measures

The BMPs outlined above would serve to limit light and glare impacts from the Project. As a result, there would be no new sources of substantial daytime and nighttime light or glare during construction and light and glare impacts during construction would be less than significant.

The existing facilities, including Hamilton City Pump Station, GCID siphons, and GCID Main Canal, would not result in impacts from the introduction of a new source of daytime or nighttime

light or glare because they are existing facilities that would not be substantially modified. The new facilities (e.g., administration building, operation and maintenance building) would not create a new, negative source of daytime light or glare with implementation of the associated design features under operation of Alternative 1 or 3. Operation of Alternative 1 or 3 would not result in a new, substantial source of nighttime light and glare at new facilities (e.g., administration building, operation and maintenance building, TC Canal intake, and CBD outlet) because the associated BMPs will minimize the number of lights used, ensure that appropriate lighting types are selected based on use, utilize shielding to prevent nuisance glare and light spill, and prevent the use of BRWL LED lighting. Therefore, operational light and glare impacts associated with Alternative 1 or 3 would be less than significant.

NEPA Conclusion

Construction and operation effects would be the same as described above for CEQA. Construction and operation activities for Alternative 1 or 3 would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area as compared to the No Project Alternative. Implementation of BMP-17 and BMP-22 will minimize light and glare effects. Construction and operation of Alternative 1 or 3 would have no adverse light and glare effects.

Alternative 2

Alternative 2 would generally result in the same types of light and glare impacts as described for Alternatives 1 and 3 except that Huffmaster Road would be realigned and South Road would be constructed (to replace Sites Lodoga Road) instead of constructing a bridge over the reservoir. The realigned segment of Huffmaster and South Road would be approximately 30 miles long. In addition, the Dunnigan Pipeline would connect to the Sacramento River instead of the CBD. There would also be slight maximum water surface elevation differences at the Sites Reservoir between the alternatives because the reservoir would be smaller under Alternative 2 than for Alternatives 1 and 3.

Construction

Construction of the new roadway around the reservoir and the Sacramento River discharge would be done in a manner consistent with construction for Alternatives 1 and 3, resulting in the same light and glare impacts. Furthermore, it is not anticipated that the Sacramento River discharge would be constructed at night and would therefore not require the use of construction floodlights. The maximum water surface elevation of the reservoir under Alternative 2 would be approximately 20 feet lower than for Alternatives 1 and 3. However, the overall scale of the reservoir, and the resulting degree of impacts resulting from changes to light and glare, would not greatly differ under Alternative 2 compared to Alternatives 1 and 3.

Overall, the construction of Alternative 2 would not result in a notable difference in daytime and nighttime light and glare impacts when compared to Alternatives 1 and 3. The impacts would be essentially the same as described for Alternatives 1 and 3, and the same types and quantities of viewers would be affected.

Operation

The operations and maintenance associated with Alternative 2 would not result in a notable difference in daytime and nighttime light and glare impacts, and these impacts would be similar to those identified under Alternatives 1 and 3, because Alternative 2 would have the same operations and maintenance requirements as described for Alternatives 1 and 3. Therefore, daytime and nighttime light and glare impacts would be essentially the same, and the same types and quantities of viewers would be affected.

CEQA Significance Determination and Mitigation Measures

Visual changes to views resulting from construction of Alternative 2 would be the same as those for Alternatives 1 and 3. The design features and lighting practices for BMP-17 and BMP-22 will limit light and glare from construction. As a result, there would be no new sources of substantial daytime and nighttime light or glare during construction and light and glare impacts during construction would be less than significant.

The existing facilities, including Hamilton City Pump Station, GCID siphons, and GCID Main Canal, would not result in impacts from the introduction of a new source of daytime or nighttime light or glare because they already exist and would not be substantially modified. Similar to Alternatives 1 and 3, most of the new facilities would not create a new, negative source of daytime light or glare with implementation of the associated BMP-17 design features under operation of Alternative 2. Operation of Alternative 2 would not result in a new, substantial source of nighttime light and glare at new facilities because the associated BMP-17 design features will minimize the number of lights used, ensure that appropriate lighting types are selected based on use, utilize shielding to prevent nuisance glare and light spill, and prevent the use of BRWL LED lighting. Therefore, operational light and glare impacts associated with Alternative 2 would be less than significant.

NEPA Conclusion

Construction and operation effects would be the same as described above for CEQA. Construction and operation activities for Alternative 2 would not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area as compared to the No Project Alternative. Implementation of BMP-17 and BMP-22 will minimize light and glare effects. Construction and operation of Alternative 2 would have no adverse light and glare effects.

24.5 References

24.5.1. Printed References

Colusa County. 2012. *Colusa County 2030 General Plan*. Adopted July 31, 2012. Colusa County, CA.

Federal Highway Administration. 2015. *Guidelines for the Visual Impact Assessment of Highway Projects*. (FHWA-HEP-15-029.) USDOT (US Department of Transportation). Washington, DC. January 2015.

Glenn County. 1993. *Glen County General Plan, Policy Plan*. Adopted June 15, 1993. Glenn County, CA.

Litton, R. Burton, Jr. 1968. *Forest Landscape Description and Inventories – A Basis for Land Planning and Design*. (U.S. Department of Agriculture Forest Service Research Paper PSW-49) Pacific Southwest Forest and Range Experiment Station. Berkeley, CA.