Chapter 19
Aesthetics and Visual Resources

19.1 Affected Environment

This chapter describes the affected environment related to aesthetics and visual resources for the dam and reservoir modifications proposed under the SLWRI.

Because of the potential influence of the proposed modification of Shasta Dam on water deliveries over a large geographic area, the SLWRI includes both a primary study area and an extended study area. The primary study area has been further divided into Shasta Lake and vicinity and the upper Sacramento River (Shasta Dam to Red Bluff). The extended study area consists of the lower Sacramento River and Delta and the CVP/SWP service areas.

19.1.1 Visual Environment

Both natural and artificial landscape features contribute to perceived visual images and the aesthetic value of a view. The value is determined by contrasts, forms, and textures exhibited by the natural environment (e.g., geology, hydrology, vegetation, and wildlife), as well as human-made features. The aesthetic value of an area is a measure of its visual character and quality combined with the viewer's response to the area (DOT 1981). In general terms, the visual landscape is considered to be a vital component of an area's overall resource value. The ability of the landscape to undergo alteration without losing its visual character is considered important for the maintenance of high scenic value. As development deviates from the natural landscape, visual impacts increase. The visual impacts of a project are determined by a number of factors, including effects on the visual character and quality (e.g., form, line, color, and texture), visual exposure, viewer sensitivity, and the number of viewers who are expected to see the project.

People respond differently to changes in the physical environment, depending on their prior experiences and expectations, their proximity to the views, and the length of time the view is visible to them. Visual effects analyses tend to be highly subjective. For this reason, aesthetics and visual resources are addressed qualitatively rather than quantitatively.

This section focuses on the primary study area consisting of Shasta Lake and vicinity and the upper Sacramento River from Shasta Dam downstream to Red Bluff. The focus is on the primary study area because implementation of the project would have virtually no effect on aesthetic values and visual resources in the extended study area.

The visual environment, or character, is a function of both the natural and man-made landscape features that make up a view. The character of any given area is influenced by geologic, hydrologic, botanical, wildlife, recreational, and urban features. The perception of visual character can vary significantly as season, hour, light, shadow, weather, and the other elements of a view change. Form, line, color, and texture are the basic components used to describe visual character and quality for most visual assessments (DOT 1981). The dominance of each of these components on the landscape forms the viewer's impression of the landscape, and therefore, the aesthetic value of the landscape. The aesthetic value of an area is a measure of its visual character and scenic quality combined with the viewer response.

The overall sensitivity and response of a viewer to the quality of a view is based on a combination of viewer exposure and viewer sensitivity. "Viewer exposure" refers to the visibility of resources in the landscape, the proximity of the vantage point to the view, the elevation of the viewer relative to the view, the frequency and duration of the viewing, the number of observers, and the preconceived expectations of individual viewers or groups. "Viewer sensitivity" refers to the extent of the public's concern for particular landscapes. Judgments of visual quality and viewer response should be based on a regional frame of reference. The geographic setting and nature of the visual resource will significantly influence the degree of visual quality and sensitivity experienced by the viewer. For example, the presence of a small hill in an otherwise flat landscape may be considered a significant visual element, but a hill of the same size may have very little significance when located in mountainous terrain.

For purposes of this report, a viewshed is defined as the surface area visible from a particular location (e.g., a highway pull-out, campground, or marina) or sequence of locations (e.g., along a highway or trail). The scenic attractiveness and distance zones also influence the aesthetic value of a viewshed.

Scenic Attractiveness

Scenic attractiveness is classified as:

- **Class A "distinctive"** – Areas where landform, vegetation patterns, water characteristics, and cultural features combine to provide unusual, unique, or outstanding scenic quality. These landscapes have strong positive attributes of variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern, and balance.

- **Class B "typical"** – Areas where landform, vegetation patterns, water characteristics, and cultural features combine to provide ordinary or common scenic quality. These landscapes generally have positive, yet common, attributes of variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern, and balance.

- **Class C "indistinctive"** – Areas where landform, vegetation patterns, water characteristics, and cultural features have low scenic quality. Water and rock forms of any consequence are often missing in Class C landscapes. These landscapes have weak or missing attributes of variety, unity, vividness, mystery, intactness, order, harmony, uniqueness, pattern, and balance.

Class A and B visual resources typically are found in State or Federal parks, recreation areas, and wilderness areas, including rivers and lakes. Class C resources generally are areas that have low scenic quality and consist of more common landscapes.

Distance Zones

In addition to scenic attractiveness, three primary distance zones are used, as appropriate, to characterize the viewsheds described in the following sections. These distance zones, described below, are foreground, middle ground, and background.

- **Foreground (0 to 0.5 mile)** – At a foreground distance, people can distinguish small boughs or leaf clusters, tree trunks and large branches, individual shrubs, clumps of wildflowers, medium-sized animals, and medium to large birds.

- **Middle ground (0.5 to 4 miles)** – At a middle ground distance, people can distinguish individual tree forms, large boulders, flower fields, small openings in the forest or tree line, and small rock outcrops. Form, texture, and color remain dominant and pattern is important.

- **Background (4 miles to horizon)** – At a background distance, people can distinguish groves or stands of trees, large openings in the forest, and large rock outcrops. Texture is not detectable and color has flattened, but large patterns of vegetation or rocks are still distinguishable, and landform ridgelines and horizon lines are the dominant visual characteristics.

Shasta Lake and Vicinity and Upper Sacramento River (Shasta Dam to Red Bluff)

For purposes of the aesthetics and visual resources assessment, the primary study area encompasses Shasta Lake and vicinity and the upper Sacramento River in Northern California. Shasta Dam is located about 9 miles northwest of Redding, and the dam and the entire reservoir are in Shasta County. The Shasta Lake and vicinity portion of the primary study area is composed of Shasta Dam and Shasta Lake and the lower reaches of the tributaries draining into Shasta Lake. The upper Sacramento River portion includes dam-related infrastructure downstream from the dam, Keswick Reservoir, and watersheds that are tributary to the Sacramento River downstream to Red Bluff.

The terrain of the primary study area is extremely diverse and includes the mountainous terrain surrounding Shasta Lake as well as the landscapes of the Central Valley below Keswick Reservoir. Upstream from Keswick Reservoir, slopes are characterized by a mix of pine and oak forests and, to varying degrees, chaparral and rock outcrops. The landscape includes topographic features of the Klamath Mountains, the southern Cascade Range, and the Central Valley. Two volcanic features – Mount Shasta and Mount Lassen – can be seen from numerous vantage points throughout the area.

Shasta Lake is the central visual attraction of the portion of the primary study area upstream from Shasta Dam. It is the largest lake in the Whiskeytown-Shasta-Trinity National Recreation Area (NRA). The Shasta and Trinity Units of the NRA are managed by the USFS Shasta-Trinity National Forest (STNF) to provide high-quality recreational experiences and visual perceptions to the public. Shasta Lake offers the public a variety of outdoor recreational experiences and activities, including boating, water-skiing, swimming, fishing, camping, picnicking, hiking, hunting, and mountain biking. Recreation at the lake is managed by USFS consistent with the STNF *Land and Resource Management Plan* (LRMP) (USFS 1995b) and guidelines established for the Shasta and Trinity units of the NRA.

Shasta Lake has a surface area of 29,500 acres, with a shoreline of about 420 miles. Currently, there are 9 marinas on Shasta Lake, most of which are located in coves. Although numerous campgrounds provide facilities for land-based recreation, the primary recreational use of the lake is water-based. Many types of boats use the lake, including private and commercial houseboats, powerboats, and personal watercraft.

The construction of Shasta Dam inundated the canyons of the Sacramento, Pit, and McCloud rivers, as well as numerous tributaries. The diversity of visual experiences at Shasta Lake and the surrounding slopes is influenced by fluctuating water levels, compounded by human-made features such as Interstate 5 (I-5), the Union Pacific Railroad (UPRR), and electrical transmission facilities. A variety of commercial and residential uses occurs in, on, or near Shasta Lake.

Shasta Lake is crossed from north to south by I-5 via the Pit River Bridge at the western end of the Pit Arm and the Antlers Bridge near the northern end of the Sacramento Arm. Views from both of these bridges are dominated by Shasta Lake and the surrounding landscapes; the views encompass minimal development, although Bridge Bay Resort can be clearly seen from the southbound lanes of the Pit River Bridge and some commercial and residential development can be seen from the Antlers Bridge.

The STNF LRMP classifies National Forest System (NFS) lands based on visual quality objectives (VQO). VQOs identify how much a management activity can contrast visually with the character of the landscape. The Shasta

and Trinity units of the NRA include lands managed by the STNF to meet the following VQOs: modification, partial retention, and retention. Areas designated as "modification" are typically developed areas, such as campgrounds, marinas, and boat launch ramps, with management activities in the foreground and a natural appearance in the middle ground. "Partial retention" refers to those areas where management activities remain visually subordinate on the landscape. "Retention" areas are those where management activities are not visually evident. The "Preservation" VQO designation allows for ecological changes only. Management activities, except for very low visual impact recreation facilities are prohibited. The "Maximum Modification" VQO applies to areas in which changes in the landscape are strong and would be obvious to the average viewer. These changes stand out as a dominating impression of the landscape, yet they are shaped so that they might resemble natural patterns when viewed from a distance of 3 miles to 5 miles or more. These areas visually appear to be major disturbances.

The LRMP defines three principal criteria to classify VQOs: (1) sensitivity levels, (2) scenic quality of the landscape, and (3) distance from the main viewing areas. Table 19-1 compares the acreage of VQOs (as defined in the LRMP) to the total area of NFS lands managed by USFS in the Shasta and Trinity units of the NRA.

Table 19-1. Shasta-Trinity National Forest Inventoried Visual Quality Objectives

Inventoried VQO	NFS Lands (2,705,234 acres)		NRA Lands (Shasta and Trinity Units) (121,505 acres)	
	Acres[1]	Percent[2]	Acres[3]	Percent[4]
Preservation	498,700	18	28,095	23
Retention	175,000	6	92,387	76
Partial Retention	590,600	22	0	0
Modification	597,600	22	1,112	1
Maximum Modification	259,100	10	0	0

Sources: USFS 1995b, 2007

Notes:

[1] Number of acres of lands of the VQO type in the LRMP management area (NFS land only)

[2] Percentage of lands of the VQO type in the LRMP management area (NFS land only)

[3] Number of acres of land by VQO type in the NRA (Shasta and Trinity Units) management area (NFS land only)

[4] Percentage of lands by VQO type in the LRMP management area (NFS land only)

Key:

LRMP = *Land and Resource Management Plan*

NFS = National Forest System

NRA = National Recreation Area

VQO = visual quality objective

In the NRA, Shasta Dam and Shasta Lake are the dominant components of the visual environment. The lake, combined with constructed facilities (e.g., Shasta Dam, Pit River Bridge, Bridge Bay Resort) and natural features (e.g.,

mountains, rivers, canyons, vegetation) observable from various locations have a substantial influence on the visual character of the existing landscape.

The remaining parts of this section describe the visual resources in the primary study area. Much of the content of these descriptions was taken from reconnaissance-level data gathered during the SLWRI by Reclamation and its consultants. The STNF also provided information used to characterize these visual resources. Visual resources are described in terms of visual sensitivity and viewer response.

Viewsheds A number of factors can influence the aesthetic value of viewsheds in the primary study area, which are dominated by constructed features and natural landscapes. Although exposed surfaces associated with grading and barren shoreline may be obvious, factors such as vegetation, lighting, and glare can also substantially influence these viewsheds both spatially and temporally. The viewshed types that occur in the primary study area are listed below and described in the following sections:

- Panoramic views
- Vista points
- Landscape features
- Distinctive built features
- Built features (detractions)
- Exposed shoreline of Shasta Lake
- External views

Panoramic Views A panoramic view is defined as the unbroken view of an entire surrounding area. In the Shasta Dam and Shasta Lake area, panoramic viewing opportunities are governed by the elevation, aspect, and location of the viewer. The steep, mountainous topography around Shasta Lake largely influences the degree to which any given area can be seen from a particular vantage point. Vegetation, lighting, and glare also influence a panoramic view. For example, panoramic views as seen from the lake level vary greatly from those seen from the I-5 corridor higher up the slope.

The contrast between Shasta Lake and the surrounding mountains affords visitors a diversity of views from various locations around the lake. The length and configuration of the shoreline of Shasta Lake coupled with the mountainous terrain represent an important visual and scenic resource in the region.

Panoramic viewsheds are plentiful throughout the primary study area. Among the most dramatic and high-quality views is that of the so-called "Three Shastas," consisting of Shasta Dam, Shasta Lake, and Mount Shasta. The photograph in Figure 19-1, taken from the State Route (SR) 151 vista point above the Shasta Dam Visitor Center, illustrates the Three Shastas with the dam in the foreground, the lake in the middle ground, and Mount Shasta in the background. This view is a widely publicized panorama that draws large numbers of visitors to the area annually. Class A and B views extend for miles to the north, east, and west from the SR 151 vista point.

For purposes of this assessment, panoramic viewsheds consist primarily of views visible from locations immediately adjacent to or above Shasta Dam that are subject to heavy use (e.g., Bridge Bay Resort, Shasta Dam Visitor Center, the I-5 corridor). However, some less accessible, but nonetheless important, locations such as residences, campgrounds, marinas, and other facilities may also provide opportunities for panoramic views and thus have been included in the assessment of potential impacts on panoramic views.

Figure 19-1. Panoramic view of the Three Shastas (Shasta Dam, Shasta Lake, and Mount Shasta) as seen from the State Route 151 Vista Point

Vista Points Vista points differ from panoramic views in the level of visible expanse. Panoramic views encompass an entire surrounding area, whereas views from vista points are limited by what can be seen through an opening, such as between rows of trees or buildings. Shasta Lake and the surrounding area offer almost limitless viewing opportunities. Viewsheds have been assessed based on

Figure 19-2. Typical View of Shasta Lake from a Lakeside Campsite (taken from the Dekkas Rock Campground, McCloud Arm)

sites that are representative of popular use areas such as marinas, residences, and other recreational features.

Most of the shoreline around the lake (above the ordinary high-water line) is heavily vegetated and its topography varies significantly. Views from most onshore recreation areas are limited by stands of trees and undulating banks. Figure 19-2 shows a view of the lake from a typical lakeside campsite, in this case the Dekkas Rock Campground located on the McCloud Arm. Views of the shoreline from the water are also influenced by topography and vegetation. Although large expanses of the shoreline may be visible to boaters, lake elevation and bank topography ultimately determine what can be seen by boaters.

Figure 19-3. Some of the Distinctive Landscape Features Visible from the Bridge Bay Resort, Including a Portion of the Bridge Bay Resort

Landscape Features "Landscape feature" is a term used to describe the land characteristics of a particular area, such as a forested or mountainous site. Several landscape features characterize the primary study area, including forest, rocky outcrops, and urban development. Well-known landscape features in the primary study area include Shasta Dam, Mount Shasta, the Sundial Bridge, and the Sacramento River. The distance of the feature upstream from Shasta Dam, coupled with variations in lake levels, influences the view of landscape features. As the lake level falls, the various arms look more like rivers (e.g., channelized, boulder-strewn) and less like a lake. Figure 19-3 illustrates some of the distinctive landscape features visible from a portion of the Bridge Bay Marina, the Pit River Bridge, and limestone outcrops located along the McCloud Arm.

Figure 19-4. Shasta Dam and Infrastructure

Distinctive Built Features The aesthetic quality of a distinctive built feature is subject to individual interpretation. This subjective interpretation is influenced by the contrast of these features with their setting. For example, engineered features such as Shasta Dam and its infrastructure (Figure 19-4) can be considered to detract from the "natural" character of the setting, because some viewers might argue that the natural character of the features inundated by Shasta Lake is its greatest strength. The dam, which was completed in 1945, is a curved concrete gravity-type dam containing 6.5 million cubic yards of concrete weighing 15 million tons. It is the second largest dam in mass in the United States. (Grand Coulee Dam on the Columbia River in Washington State is the largest.)

The 3,460-foot-long dam is 602 feet high, 543 feet thick at the bottom, and 30 feet thick at the top (Reclamation 2005). The face of the dam covers 31 acres, equal to 6 football fields and their stadiums, and the 487-foot spillway is the largest built waterfall in the world – three times the height of Niagara Falls. The spillway, as seen from the west, measures 375 feet in width with 3 drum gates, each 110 feet wide, 28 feet tall, and weighing 500 tons. There are 18 outlets on the face of the dam, each 8½ feet in diameter (large enough to drive a pickup truck through) with a maximum spillage capacity of 186,000 cubic feet per second.

With more than 400 miles of shoreline, Shasta Lake is the largest human-made lake in California. The water storage capacity is more than 4.5 million acre-feet. The surface area of the lake is 29,740 acres, and the lake drains 6,665 square miles (Reclamation 2005). The lake is one of the major landmarks in Northern California.

Built Features (Detractions) An opinion concerning the attractiveness of a built feature is formed by the viewer's perception, biases, and personal preferences. A feature seen as an eyesore by one viewer may very well be considered attractive by another. Built features such as bridges, structures, roads, power transmission lines, and water storage tanks are generally visible only from site-specific locations (e.g., the visitor center, marinas, sections of I-5) in the primary study area. Figure 19-5 shows an example of built features found in the primary study area (in this case, a railroad bridge in the foreground and the Antlers/I-5 Bridge in the background, as seen from Lakeshore Drive).

Figure 19-5. Examples of Built Features in the Primary Study Area

Additional built features of interest in the primary study area include bridges, roads, utilities, and commercial, administrative, and residential structures.

Figure 19-6. The "Bathtub Ring" Effect

Exposed Shoreline of Shasta Lake Currently, Shasta Lake reaches or nearly reaches full pool levels about once every 5 years. Because it is a reservoir, water levels fluctuate in response to climatic conditions and operational requirements. Typical operational scenarios involve drawing the reservoir down during the demand period (May through October) and storing runoff during the winter/spring period. By its nature, the amount of shoreline exposed below the full pool level elevation fluctuates daily. In extremely dry years, more than 200 vertical feet of shoreline may be exposed for extended periods through the fall.

Figure 19-7. View of Shasta Lake from a Residence Located off Northwoods Road, Lakehead, California

Unlike bodies of water that are influenced by tides or other natural fluctuations, Shasta Lake does not support habitats that can adapt to large changes in environmental conditions. Therefore, the exposed shoreline below the full pool level is essentially devoid of vegetation (Figure 19-6). As illustrated in this figure, the relatively gradual slope to the lake bottom results in a greater area of exposed shoreline with lower water levels, resulting in the "bathtub ring" effect common to California reservoirs (Reclamation 2006). As the elevation of the water surface decreases, the viewing quality changes spatially and temporally. Erosional processes, primarily wave erosion, exacerbate this situation. The seasonal fluctuations in water levels and, consequently, the amount of exposed shoreline greatly affect the visual quality of Shasta Lake.

External Views A number of factors may affect the viewsheds described in the preceding section. Exposed surfaces associated with barren shoreline and

activities such as grading may be obvious, but factors such as vegetation, lighting, and glare could also substantially affect these viewsheds both spatially and temporally.

Topography and property boundaries influence the public's external views of the primary study area. Views of the lake from private property are infrequent. Most private parcels are located some distance from the lake, and views of the lake are buffered by vegetation and the topography of NFS lands surrounding the lake. Nevertheless, some of the private parcels in the vicinity of Shasta Lake have views of the lake, although the quality of these views varies. Figure 19-7 shows a view of Shasta Lake from a nearby residence (the McCloud Arm is seen in the middle ground and the Pit Arm in the background).

Light and Glare A majority of the lands surrounding Shasta Lake are densely vegetated and undeveloped. As a result, there are relatively few sources of artificial light and glare in the Shasta Lake and vicinity portion of the primary study area. The reaches of the upper Sacramento River that pass through developed communities, such as Redding and Anderson, do have substantial sources of light and glare, and, to a lesser degree, light and glare are observable between the City of Shasta Lake and Lakehead. Vehicle traffic and roadway lighting along the I-5 corridor, scattered residential and commercial development, and reflective surfaces such as boats and marinas are among the primary sources of light and glare. The Shasta Dam compound has a variety of sources of light and glare. The backdrop of Shasta Dam at night is nonetheless an attraction for visitors and residents.

Exposed bare mineral soils, which characterize the "bathtub ring" around the perimeter of the lake during periods of drawdown, are a potential source of glare (Figure 19-6). The chroma of these soils is generally light, and the contrast of the bathtub ring with upslope vegetation and downslope water is readily apparent from various distances.

Vegetation Vegetation is an important variable in characterizing visual conditions. The type, location, diversity, and distribution of vegetation influence form and texture, depending on the vantage point of the viewer. The diverse assemblage of vegetation and barren areas in and adjacent to the primary study area varies seasonally. As mentioned previously, forestlands surround Shasta Lake. The transition from chaparral/montane hardwood–dominated habitat at the southern end of the lake to a conifer-dominated forest to the north and east is apparent to travelers on I-5 as well as to people viewing the area from the lake level or a vista point.

Typically, vegetation extends from the ordinary high-water line of Shasta Lake into the adjacent uplands. Changes in vegetation type are apparent as the viewer's eye is drawn upward from lake level to surrounding ridgelines. Because there is no vegetation below the ordinary high-water line, a distinct

demarcation is visible between upland vegetation and water levels as the reservoir fluctuates.

Viewer Groups The perceptions of viewers are influenced by their location, specific activities in which they are engaged, personal degree of awareness, and individual values and goals. Activities associated with the project could affect three distinct viewer groups: motorists, residents, and recreationists.

Motorists For the purposes of this report, motorists are people who view the primary study area from a moving vehicle. Motorists can be drivers or passengers. This group typically consists of commuters, local residents, business travelers, and tourists.

Tourists are often acutely aware of viewsheds. Business travelers, commuters, and local residents who travel the same routes frequently may become inured to a view but, at the same time, are more likely to be aware of visual changes than occasional passersby. In general, views of Shasta Lake from motorists on I-5 are of short duration but relatively frequent from Bridge Bay north to Lakehead. The longest duration and most expansive panoramic view of Shasta Lake from I-5 occurs as the roadway approaches and crosses Shasta Lake over the Pit River Bridge from both the north and the south. Traveling this route at a speed of 55 miles per hour, the viewer would be able to observe the lake and its vicinity for approximately 1 minute. Other I-5 views may vary from 4 to 16 seconds, depending on the direction and speed of travel.

Less traveled roads in the vicinity of Shasta Lake, such as SR 151, Salt Creek Road, and Gilman Road, also offer views of the lake. Most views of the lake from these roads are limited to vistas (views framed by trees or structures) and are therefore of short duration. However, one of the best vantage points from which to view the Three Shastas is at an overlook along SR 151, a State scenic highway (Figure 19-1). Motorists traveling north who do not stop at the overlook also see a spectacular view of the Three Shastas while traveling, although the view is of short duration.

Residents For the purposes of this report, residents are people whose homes, businesses, and/or property are near, and have a view of, a portion of the primary study area. The sensitivity of residents to aesthetic values and changes to a viewshed is highly individual. In addition, the sensitivity of residents to changes in a viewshed is influenced, in part, by the location and the length of time that the view from a particular location appears altered from its previous condition (e.g., temporary changes during construction or long-term modifications to the landscape).

Views of Shasta Lake from private properties are limited by land ownership patterns; most of the lands surrounding Shasta Lake are managed by Federal agencies. Views from these lands are influenced by access, vegetation, and topography. Homes on nearby ridges, such as those on the ridgeline between

Packers Bay and Turntable Bay, typically have partial views of Shasta Lake. Similarly, homes clustered along the Sacramento Arm near Lakehead have views upstream and downstream from the arm, although the views are limited by the steep topography.

Recreationists For the purposes of this report, recreationists are people who use the lands in the NRA for recreation. Like residents, recreational users of Shasta Lake are highly sensitive to the visual character of Shasta Lake and the surrounding environment.

Recreationists are people who participate in land-based activities, such as hiking along the shoreline, camping in the NRA's many campgrounds, or water-based activities, such as boating, fishing, or rafting. In addition to four recreational residence tracts permitted by the STNF (e.g., Silverthorn Tract), several commercial facilities offer overnight accommodations adjacent to the shoreline. Recreational users often have a unique perspective on the surrounding environment.

Visual Assessment Units and Key Observation Points Visual assessment units (VAU) are areas of distinct visual character in a viewshed that provide a framework for comparing the visual effects of alternatives. Key observation points (KOP) are commonly traveled routes or other likely observation points in a VAU from which a representative group (motorists, residents, and recreationists) can observe a viewshed.

VAUs are defined by areas where the features or activities associated with the project would occur in the line of sight of a KOP and represent foreground or middle ground views (i.e., within 4 miles of a KOP in the VAU). KOPs were established at locations from which portions of the primary study area can clearly be seen by members of the various viewer groups. Table 19-2 lists the KOPs established in the primary study area. Locations of VAUs and KOPs are shown in Figures 19-8a through 19-8h. Photographs taken from each KOP are provided after each figure.

Table 19-2. Key Observation Points

VAU	Figure	KOP #	Photo #	Description of Key Observation Point
Shasta Dam	19-8a	1	1a	View of the Three Shastas (Shasta Dam, Shasta Lake, and Mount Shasta) from the SR 151 overlook above the Shasta Dam Visitor Center and downstream from Shasta Dam
		1	1b	View of the upper Sacramento River below Shasta Dam from the SR 151 overlook above the Shasta Dam Visitor Center and downstream from Shasta Dam
		2	2a	View of the Main Body of Shasta Lake from Shasta Dam
		2	2b	View of the Shasta Dam spillway and the upper Sacramento River from Shasta Dam
		2	2c	View of the Centimudi Boat Ramp from Shasta Dam
		3	3a	View from the Chappie-Shasta OHV Area staging area looking northeast
		3	3b	View from the Chappie-Shasta OHV Area staging area looking south
		4	4a	View from the Chappie-Shasta OHV Area campground looking northeast
		4	4b	View from the Chappie-Shasta OHV Area campground looking southwest
		5	5a	View from the Coram Ranch River House looking northeast
		5	5b	View from the Coram Ranch River House looking southeast
		6	6a	View from the Coram Ranch Dogwood House looking northeast
		6	6b	View from the Coram Ranch Dogwood House looking southeast
		7	7a	View from the Coram Ranch Residence looking northeast
		7	7b	View from the Coram Ranch residence looking east
		7	7c	View from the Coram Ranch residence looking southeast
		8	8	View from the Coram Ranch Guest Quarters looking northeast
		9	9a	View from the road above the Chappie-Shasta OHV Area staging area looking northeast
		9	9b	View from the road above the Chappie-Shasta OHV Area staging area looking southwest
		10	10a	View of Shasta Dam from pullout east of the dam on Lake Boulevard looking northwest
		10	10b	View of Shasta Lake from pullout east of the dam on Lake Boulevard looking northeast
		11	11	View of Shasta Dam from the Main Body of Shasta Lake

Table 19-2. Key Observation Points (contd.)

VAU	Figure	KOP #	Photo #	Description of Key Observation Point
Dry Creek Trail	19-8b	1	1	View of Dry Creek Trail northwest of Shasta Dam looking west from the Main Body of Shasta Lake
Little Backbone Inlet	19-8b	1	1a	View of the mouth of Little Backbone inlet looking northeast from the Main Body of Shasta Lake
		1	1b	View of the mouth of Little Backbone inlet looking northwest from the Main Body of Shasta Lake
Digger Bay	19-8b	1	1	View of the Main Body of Shasta Lake from the upper parking area west of the Digger Bay Boat Ramp
		2	2	View of the upper parking area at Digger Bay Marina looking east
		3	3a	View of Digger Bay Marina looking northwest from boat ramp
		3	3b	View of Digger Bay Marina shoreline looking west from boat ramp
		3	3c	View of Digger Bay Boat Ramp and parking area looking south from marina
Packers Bay	19-8c	1	1	View of Packers Bay from the Packers Bay Boat Ramp
Bridge Bay	19-8c	1	1a	View of Bridge Bay looking north from the Bridge Bay store
		1	1b	View of Bridge Bay looking northwest from the parking lot of the Bridge Bay store
		2	2	View of the I-5/Pit River Bridge from Bridge Bay
		3	3a	View of the Union Pacific Railroad train tunnel looking south from the Bridge Bay Resort maintenance area
		3	3b	View of the Union Pacific Railroad train tunnel looking north from the Bridge Bay Resort maintenance area
		3	3c	View of Bridge Bay Marina 4 from the Bridge Bay Resort maintenance parking area
		4	4a	View of the south shoreline from Bridge Bay Marina 4 stairway
		4	4b	View looking northwest from Bridge Bay Marina 4 stairway
Sacramento Arm	19-8d	1	1	View of the Sacramento Arm from Riverview Drive southbound near the community of Pollock
		2	2	View of the Sacramento Arm from Riverview Drive southbound near the community of Pollock
		3	3	View of the Sacramento Arm looking east from the Doney Creek Bridge on Lakeshore Drive near the community of Lakehead
		4	4a	View of the Sacramento Arm from Lakeshore East Campground near the community of Lakeshore
		4	4b	View of the Sacramento Arm looking southeast from Lakeshore East Campground

Table 19-2. Key Observation Points (contd.)

VAU	Figure	KOP #	Photo #	Description of Key Observation Point
Sacramento Arm (contd.)	19-8d (contd.)	5	5a	View of the inlet looking northwest from Charlie Creek Bridge on Lakeshore Drive
		5	5b	View of the Sacramento Arm looking south from Charlie Creek Bridge on Lakeshore Drive
		6	6a	View of the Sacramento Arm from the Beehive Campground access road near Lakeshore
		6	6b	View of Sugarloaf Creek inlet/Sacramento Arm from Beehive Campground near Lakeshore
		6	6c	View of Sugarloaf Creek inlet/Sacramento Arm from Beehive Campground near Lakeshore
		7	7a	View of Sugarloaf Cove near Lakeshore from north shore looking south
		7	7b	View of Sugarloaf Cove from north shore looking northwest
		8	8	View of Sugarloaf Marina from the end of Daisy Lane
		9	9a	View looking south from Sugarloaf Resort Marina access
		9	9b	View toward the Salt Creek inlet from Sugarloaf Resort Marina access
		9	9c	View of Sugarloaf Marina from Sugarloaf Resort
		10	10a	View looking south toward Sugarloaf Marina from the Sugarloaf Boat Ramp
		10	10b	View looking southeast at the Sacramento Arm from the Sugarloaf Boat Ramp
		10	10c	View looking northeast at the Sacramento Arm from the Sugarloaf Boat Ramp entrance
		11	11a	View looking east from the Tsasdi Resort Marina
		11	11b	View looking south from the Tsasdi Resort Marina
		12	12a	View looking east toward I-5 from the Lakeshore Resort Campground
		12	12b	View looking southeast from the Lakeshore Resort Campground
		13	13	View of the Salt Creek Inlet looking south from the Oak Grove Day Use Area
		14	14a	View looking northeast from Lower Salt Creek Road at the Salt Creek Resort
		14	14b	View looking northwest from Lower Salt Creek Road at the Salt Creek Resort
		15	15a	View of the Salt Creek Inlet from Lower Salt Creek Road
		15	15b	View of the Salt Creek Inlet from Lower Salt Creek Road

Table 19-2. Key Observation Points (contd.)

VAU	Figure	KOP #	Photo #	Description of Key Observation Point
Sacramento Arm (contd.)	19-8d (contd.)	16	16	View of Antlers Bridge/I-5 looking southwest from Antlers Public Boat Ramp
		17	17a	View of Antlers Public Boat Ramp/Picnic Area parking lot from picnic area looking north
		17	17b	View of Sacramento Arm from Antlers Public Boat Ramp/Picnic Area from picnic area looking south
		18	18a	View from typical campsite at Antlers Resort looking north
		18	18b	View from typical campsite at Antlers Resort looking east
		18	18c	View from typical campsite at Antlers Resort looking southwest
McCloud Arm	19-8e	1	1	View of the McCloud Arm, Turntable Bay, and vicinity from a residence located off of Northwoods Road, west of I-5
		2	2	View of Turntable Bay from the McCloud Arm of Shasta Lake
		3	3	View of the Bailey Cove Boat Ramp from the Bailey Cove parking lot
		4	4	View of Holiday Harbor from the Bailey Cove Day Use Area
		5	5	View of Holiday Harbor from the Holiday Harbor Campground entrance
		6	6	View looking south toward the McCloud Arm from the Shasta Caverns parking lot
		7	7	View from the former Lakeview Resort caretaker residence
		8	8a	View of the McCloud Arm looking south from the former Lakeview Resort boat ramp
		8	8b	View of the McCloud Arm looking northeast from the former Lakeview Resort boat ramp
		8	8c	View of the Lakeview Resort Marina from the former Lakeview Resort boat ramp
		9	9	View of the former Lakeview Resort from the McCloud Arm of Shasta Lake
		10	10	View of Shasta Caverns dock on east side of lake from the McCloud Arm of Shasta Lake
		11	11a	View of the McCloud Arm downstream from the Hirz Bay Boat Ramp
		11	11b	View of the McCloud Arm upstream from the Hirz Bay Boat Ramp

Table 19-2. Key Observation Points (contd.)

VAU	Figure	KOP #	Photo #	Description of Key Observation Point
McCloud Arm (contd.)	19-8e (contd.)	12	12	View of Hirz Bay from the McCloud Arm of Shasta Lake
		13	13a	View of Campbell Creek inlet looking southeast from the McCloud Arm of Shasta Lake
		13	13b	View of Campbell Creek inlet looking east from the McCloud Arm of Shasta Lake
		14	14a	View of the McCloud Arm downstream, from the Dekkas Rock Campground
		14	14b	View of the McCloud Arm upstream, from the Dekkas Rock Campground
		15	15a	View of the McCloud River upstream, from the McCloud River Bridge
		15	15b	View of the McCloud River downstream, from the McCloud River Bridge
		16	16	View of the McCloud River Bridge, from the eastern approach
		17	17	View of the McCloud Arm from Space 10, McCloud Bridge Campground
		18	18a	View of the McCloud Arm from open area west of Space 1, McCloud Bridge Campground
		18	18b	View of the McCloud Arm from open area west of Space 1, McCloud Bridge Campground
		18	18c	View looking west from the open area west of Space 1, McCloud Bridge Campground
Pit Arm	19-8f	1	1a	View of the Pit Arm from the Jones Valley parking area, looking northwest
		1	1b	View of the Pit Arm from the Jones Valley parking area, looking northeast
		2	2	View of the Pit Arm from the Jones Valley parking area (west end), looking west
		3	3	View of the Pit Arm from the entrance to the Jones Valley Campground
		4	4	View of the Pit Arm looking north from the Jones Valley Resort Boat Ramp
		5	5	View of the Pit Arm from Juniper Drive, Silverthorn Resort

Table 19-2. Key Observation Points (contd.)

VAU	Figure	KOP #	Photo #	Description of Key Observation Point
Pit Arm (contd.)	19-8f (contd.)	6	6a	View of the Silverthorn Marina from the top of the boat ramp looking east
		6	6b	View of the Silverthorn Marina from the top of the boat ramp looking northeast
		6	6c	View of the Silverthorn Marina from the top of the boat ramp looking north
		7	7	View of the Silverthorn Marina looking south from the Pit Arm of Shasta Lake
		8	8	View of the west side of Ski Island looking east from Shasta Lake
Squaw Arm	19-8g	1	1	View of Bully Hill looking north from the Squaw Arm of Shasta Lake
		2	2	View of Monday Flat looking north from the Squaw Arm of Shasta Lake
I-5 Corridor	19-8h	1	1a	View of the Pit Arm (right) and the McCloud Arm (left) from the Pit River Bridge, as seen from I-5 northbound
		1	1b	View of Bridge Bay Resort from the Pit River Bridge, as seen from I-5 southbound
		2	2	View of the Pit River Bridge looking west from the Pit Arm of Shasta Lake
		3	3a	View of the Sacramento Arm looking toward the Antlers Campground from the Antlers Bridge, as seen from I-5 northbound
		3	3b	View of the Antlers Public Boat Ramp from the Antlers Bridge, as seen from I-5 northbound
		4	4	View of the Sacramento Arm west of the Antlers Bridge, as seen from I-5 southbound
		5	5	View of the McCloud Arm and vicinity at Turntable Bay, as seen from I-5 northbound

Key:
I-5 = Interstate 5
KOP = key observation point
OHV = off-highway vehicle
SR = State Route
VAU = visual assessment unit

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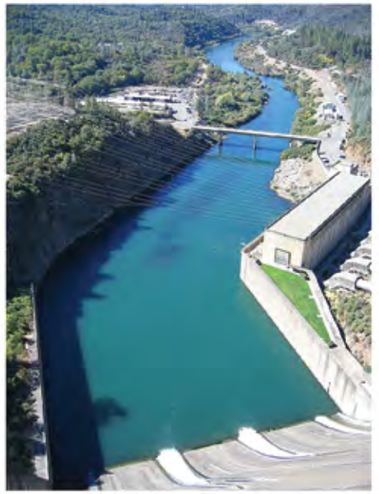
Figure 19-8a. Visual Assessment Unit and Key Observation Points

Shasta Dam VAU, KOP 1, Photo 1a
View of the Three Shastas (Shasta Dam, Shasta Lake, and Mount Shasta) from the SR 151 overlook above the Shasta Dam Visitor Center and downstream of Shasta Dam.

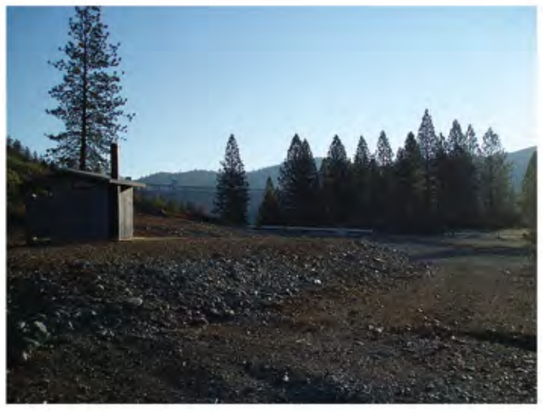
Shasta Dam VAU, KOP 1, Photo 1b
View of the upper Sacramento River below Shasta Dam from the SR 151 overlook above the Shasta Dam Visitor Center and downstream of Shasta Dam.

Shasta Dam VAU, KOP 2, Photo 2a
View of the main body of Shasta Lake from Shasta Dam.

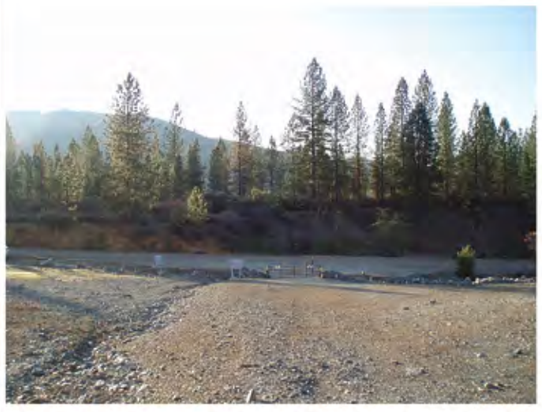


Shasta Dam VAU, KOP 2, Photo 2b
View of the Shasta Dam spillway and the upper Sacramento River from Shasta Dam.

Shasta Dam VAU, KOP 2, Photo 2c
View of the Centimudi Boat Launch from Shasta Dam.



Shasta Dam VAU, KOP 3, Photo 3a
View from the Chappie - Shasta Off-Highway Vehicle (OHV) Area staging area looking northeast.



Shasta Dam VAU, KOP 3, Photo 3b
View from the Chappie - Shasta OHV Area staging area looking south.

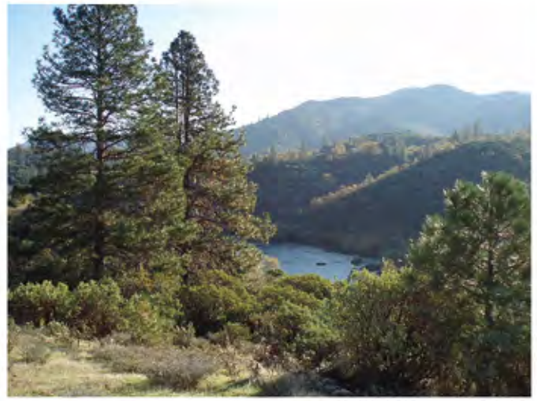
Shasta Dam VAU, KOP 4, Photo 4a
View from the Chappie - Shasta OHV Area campground looking northeast.

Photographs for Figure 19-8a, Plate 1

Shasta Dam VAU, KOP 4, Photo 4b
View from the Chappie - Shasta OHV Area campground looking southwest.

Shasta Dam VAU, KOP 5, Photo 5a
View from the Coram Ranch River House looking northeast.

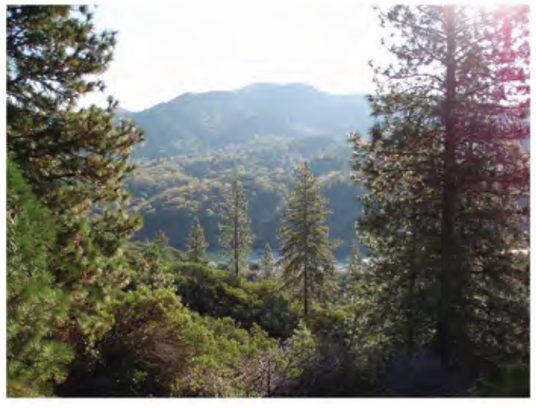
Shasta Dam VAU, KOP 5, Photo 5b
View from the Coram Ranch River House looking southeast.



Shasta Dam VAU, KOP 6, Photo 6a
View from the Coram Ranch Dogwood House looking northeast.

Shasta Dam VAU, KOP 6, Photo 6b
View from the Coram Ranch Dogwood House looking southeast.

Shasta Dam VAU, KOP 7, Photo 7a
View from the Coram Ranch Residence looking northeast.



Shasta Dam VAU, KOP 7, Photo 7b
View from the Coram Ranch Residence looking east.

Shasta Dam VAU, KOP 7, Photo 7c
View from the Coram Ranch Residence looking southeast.

Photographs for Figure 19-8a, Plate 2

Shasta Dam VAU, KOP 8, Photo 8
View from the Coram Ranch Guest Quarters looking northeast.

Shasta Dam VAU, KOP 9, Photo 9a
View from the road above the Chappie - Shasta OHV Area staging area looking northeast.

Shasta Dam VAU, KOP 9, Photo 9b
View from the road above the Chappie - Shasta OHV Area staging area looking southwest.

Shasta Dam VAU, KOP 10, Photo 10a
View of Shasta Dam from pullout east of the dam on Lake Boulevard looking northwest.

Shasta Dam VAU, KOP 10, Photo 10b
View of Shasta Lake from pullout east of the dam on Lake Boulevard looking northeast.

Shasta Dam VAU, KOP 11, Photo 11
View of Shasta Dam from the main body of Shasta Lake.

Photographs for Figure 19-8a, Plate 3

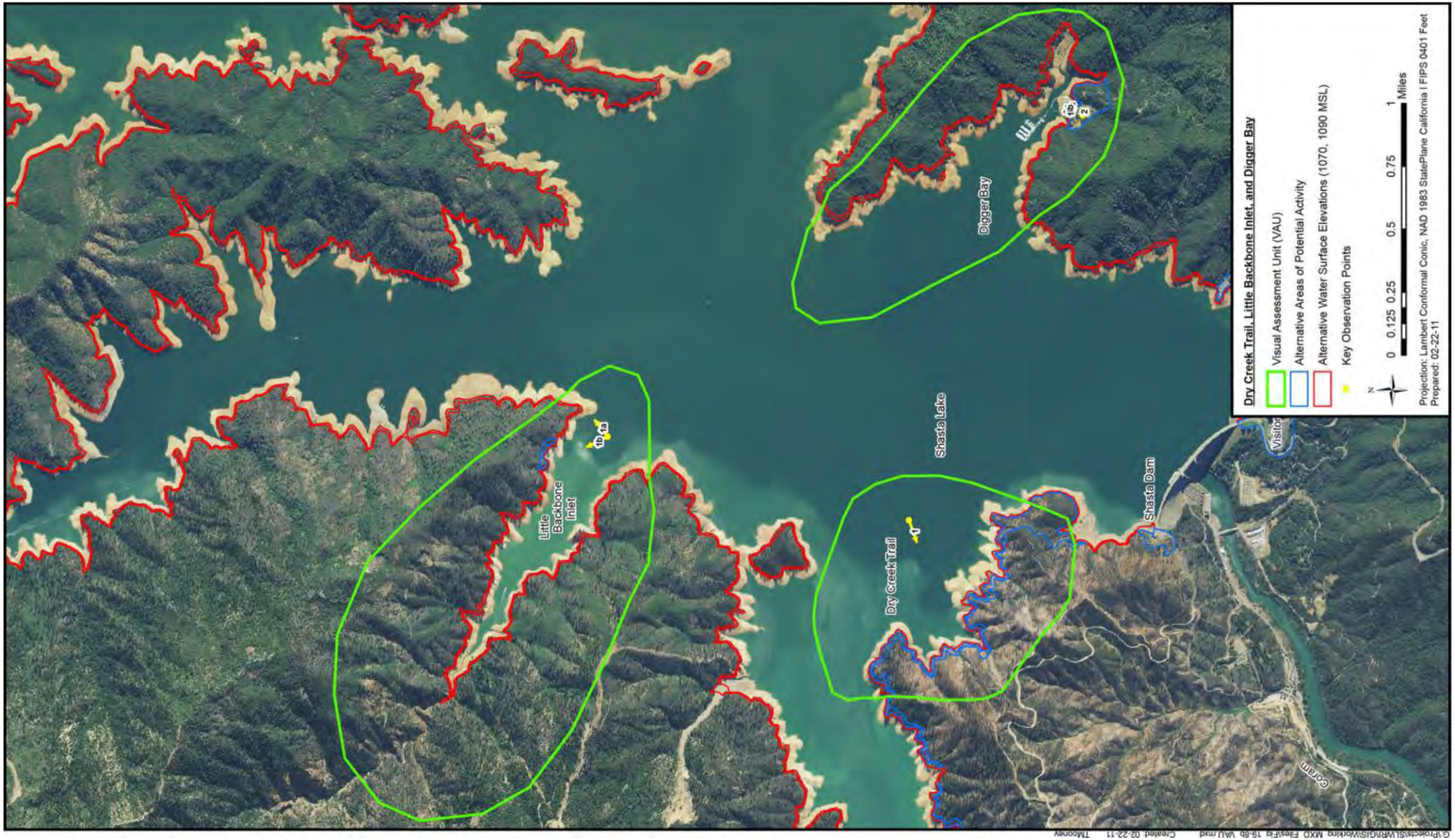


Figure 19-8b. Visual Assessment Unit and Key Observation Points

Dry Creek Trail VAU, KOP1, Photo 1
View of Dry Creek Trail northwest of Shasta Dam looking west from the main body of Shasta Lake.

Little Backbone Inlet VAU, KOP 1, Photo 1a
View of the mouth of Little Backbone inlet looking northeast from the main body of Shasta Lake.

Little Backbone Inlet VAU, KOP 1, Photo 1b
View of the mouth of Little Backbone inlet looking northwest from the main body of Shasta Lake.

Digger Bay VAU, KOP 1, Photo 1
View of the main body of Shasta Lake from the upper parking area west of the Digger Bay Boat Ramp.

Digger Bay VAU, KOP 2, Photo 2
View of the upper parking area at Digger Bay Marina looking east.

Digger Bay VAU, KOP 3, Photo 3a
View of Digger Bay Marina looking northwest from boat ramp.

Digger Bay VAU, KOP 3, Photo 3b
View of Digger Bay Marina shoreline looking west from boat ramp.

Digger Bay VAU, KOP 3, Photo 3c
View of Digger Bay Boat Ramp and parking area looking south from marina.

Photographs for Figure 19-8b, Plate 1

Figure 19-8c. Visual Assessment Unit and Key Observation Points

Packers Bay VAU, KOP 1, Photo 1
View of Packers Bay from the Packers Bay Boat Ramp.

Bridge Bay VAU, KOP 1, Photo 1a
View of Bridge Bay looking north from the Bridge Bay store.

Bridge Bay VAU, KOP 1, Photo 1b
View of Bridge Bay looking northwest from the parking lot of the Bridge Bay store.

Bridge Bay VAU, KOP 2, Photo 2
View of the I-5/Pit River Bridge from Bridge Bay.

Bridge Bay VAU, KOP 3, Photo 3a
View of the Union Pacific Railroad train tunnel looking south from the Bridge Bay Resort maintenance area.

Bridge Bay VAU, KOP 3, Photo 3b
View of the Union Pacific Railroad train tunnel looking north from the Bridge Bay Resort maintenance area.

Bridge Bay VAU, KOP 3, Photo 3c
View of Bridge Bay Marina 4 from the Bridge Bay Resort maintenance parking area.

Bridge Bay VAU, KOP 4, Photo 4a
View of the south shoreline from Bridge Bay Marina 4 stairway.

Photographs for Figure 19-8c, Plate 1

Bridge Bay VAU, KOP 4, Photo 4b
View looking northwest from Bridge Bay Marina 4 stairway.

Photographs for Figure 19-8c, Plate 2

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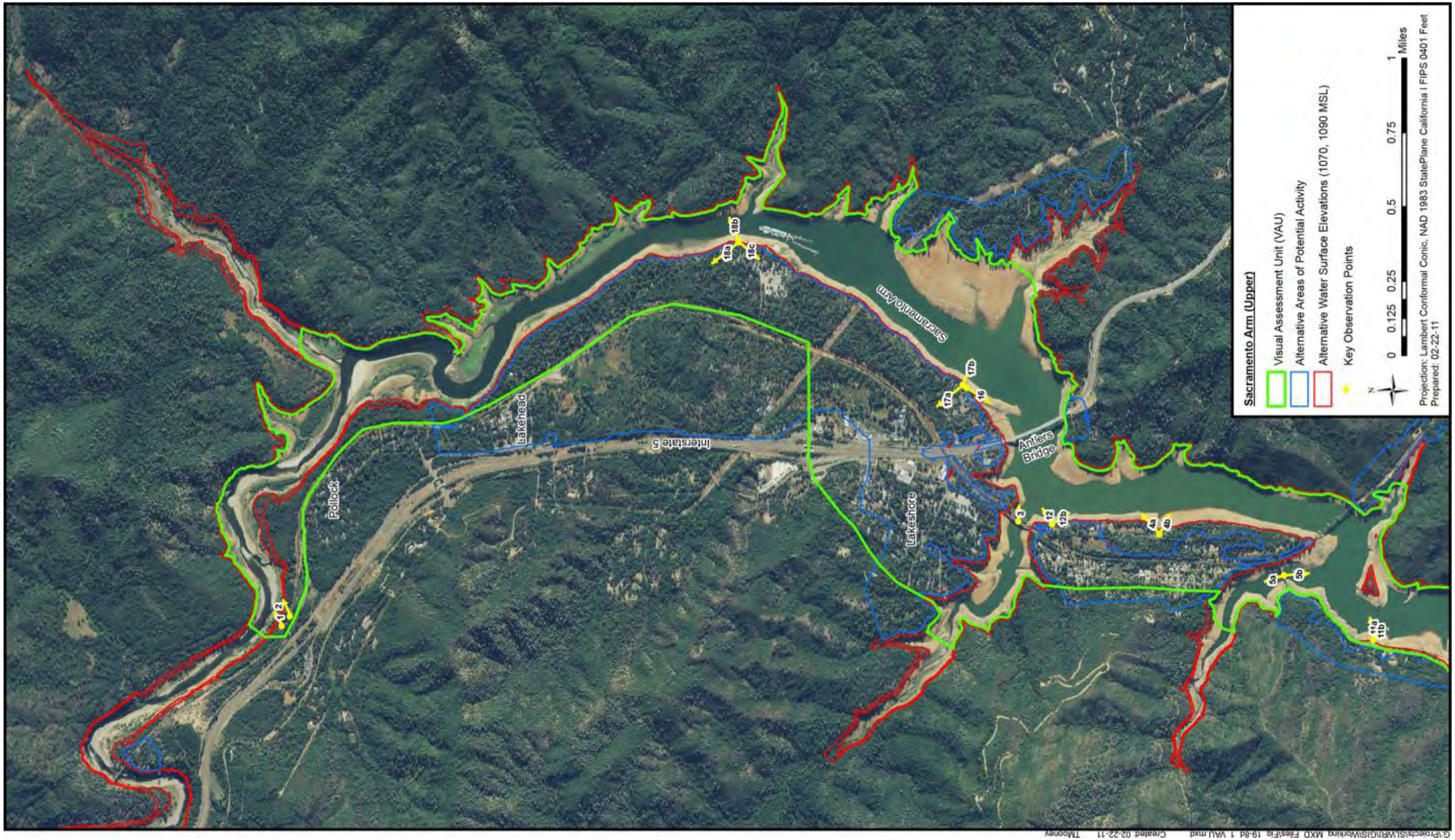


Figure 19-8d. Part 1 – Visual Assessment Unit and Key Observation Points

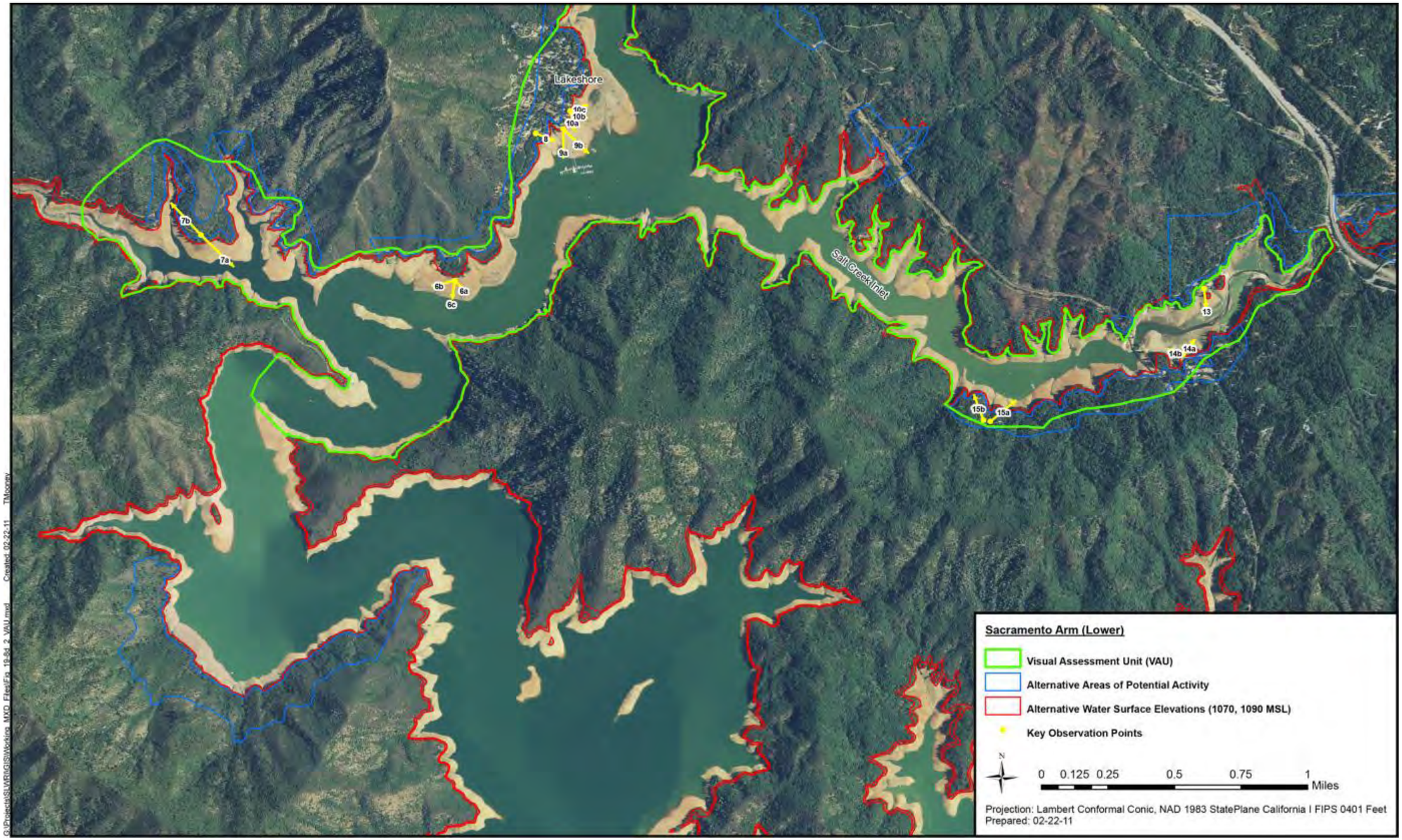


Figure 19-8d. Part 2 – Visual Assessment Unit and Key Observation Points

Sacramento Arm VAU, KOP 1, Photo 1
View of the Sacramento Arm from Riverview Drive southbound near the community of Pollock.

Sacramento Arm VAU, KOP 2, Photo 2
View of the Sacramento Arm from Riverview Drive southbound near the community of Pollock.

Sacramento Arm VAU, KOP 3, Photo 3
View of the Sacramento Arm looking east from the Donley Creek Bridge on Lakeshore Drive near the community of Lakehead.

Sacramento Arm VAU, KOP 4, Photo 4a
View of the Sacramento Arm from Lakeshore East Campground near the community of Lakeshore.

Sacramento Arm VAU, KOP 4, Photo 4b
View of the Sacramento Arm looking southeast from the Lakeshore East Campground.

Sacramento Arm VAU, KOP 5, Photo 5a
View of the inlet looking northwest from Charley Creek Bridge on Lakeshore Drive.

Sacramento Arm VAU, KOP 5, Photo 5b
View of the Sacramento Arm looking south from Charley Creek Bridge on Lakeshore Drive.

Sacramento Arm VAU, KOP 6, Photo 6a
View of the Sacramento Arm from the Beehive Campground access road near Lakeshore.

Photographs for Figure 19-8d, Plate 1

Sacramento Arm VAU, KOP 6, Photo 6b
View of Sugarloaf Creek inlet/Sacramento Arm from Beehive Campground near Lakeshore.

Sacramento Arm VAU, KOP 6, Photo 6c
View of Sugarloaf Creek/Sacramento Arm from Beehive Campground near Lakeshore.

Sacramento Arm VAU, KOP 7, Photo 7a
View of Sugarloaf Cove near Lakeshore from north shore looking south.

Sacramento Arm VAU, KOP 7, Photo 7b
View of Sugarloaf Cove from north shore looking northwest.

Sacramento Arm VAU, KOP 8, Photo 8
View of Sugarloaf Marina from the end of Daisy Lane.

Sacramento Arm VAU, KOP 9, Photo 9a
View looking south from Sugarloaf Resort Marina access.

Sacramento Arm VAU, KOP 9, Photo 9b
View toward the Salt Creek Inlet from Sugarloaf Resort Marina access.

Sacramento Arm VAU, KOP 9, Photo 9c
View of Sugarloaf Marina from Sugarloaf Resort.

Photographs for Figure 19-8d, Plate 2

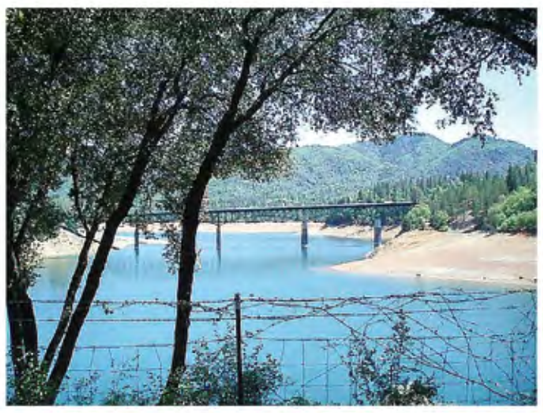
Sacramento Arm VAU, KOP 10, Photo 10a
View looking south toward Sugarloaf Marina from the Sugarloaf Boat Ramp.

Sacramento Arm VAU, KOP 10, Photo 10b
View looking southeast at the Sacramento Arm from the Sugarloaf Boat Ramp.

Sacramento Arm VAU, KOP 10, Photo 10c
View looking northeast at the Sacramento Arm from the Sugarloaf Boat Ramp entrance.

Sacramento Arm VAU, KOP 11, Photo 11a
View looking east from the Tsasdi Resort Marina.

Sacramento Arm VAU, KOP 11, Photo 11b
View looking south from the Tsasdi Resort Marina.



Sacramento Arm VAU, KOP 12, Photo 12a
View looking east toward I-5 from the Lakeshore Resort Campground.

Sacramento Arm VAU, KOP 12, Photo 12b
View looking southeast from the Lakeshore Resort Campground.

Sacramento Arm VAU, KOP 13, Photo 13
View of the Salt Creek Inlet looking south from the Oak Grove Day Use Area.

Photographs for Figure 19-8d, Plate 3

Sacramento Arm VAU, KOP 14, Photo 14a
View looking northeast from Lower Salt Creek Road at the Salt Creek Resort.

Sacramento Arm VAU, KOP 14, Photo 14b
View looking northwest from Lower Salt Creek Road at the Salt Creek Resort.

Sacramento Arm VAU, KOP 15, Photo 15a
View of the Salt Creek Inlet from Lower Salt Creek Road.

Sacramento Arm VAU, KOP 15, Photo 15b
View of the Salt Creek Inlet from Lower Salt Creek Road.

Sacramento Arm VAU, KOP 16, Photo 16
View of Antlers Bridge/I-5 looking southwest from Antlers Public Boat Ramp.

Sacramento Arm VAU, KOP 17, Photo 17a
View of Antlers Public Boat Ramp/Picnic Area parking lot from picnic area looking north.

Sacramento Arm VAU, KOP 17, Photo 17b
View of Sacramento Arm from Antlers Public Boat Ramp/Picnic Area from picnic area looking south.

Sacramento Arm VAU, KOP 18, Photo 18a
View from typical campsite at Antlers Resort looking north.

Photographs for Figure 19-8d, Plate 4

 **Sacramento Arm VAU, KOP 18, Photo 18b** View from typical campsite at Antlers Resort looking east.	 **Sacramento Arm VAU, KOP 18, Photo 18c** View from typical campsite at Antlers Resort looking southwest.		

Photographs for Figure 19-8d, Plate 5

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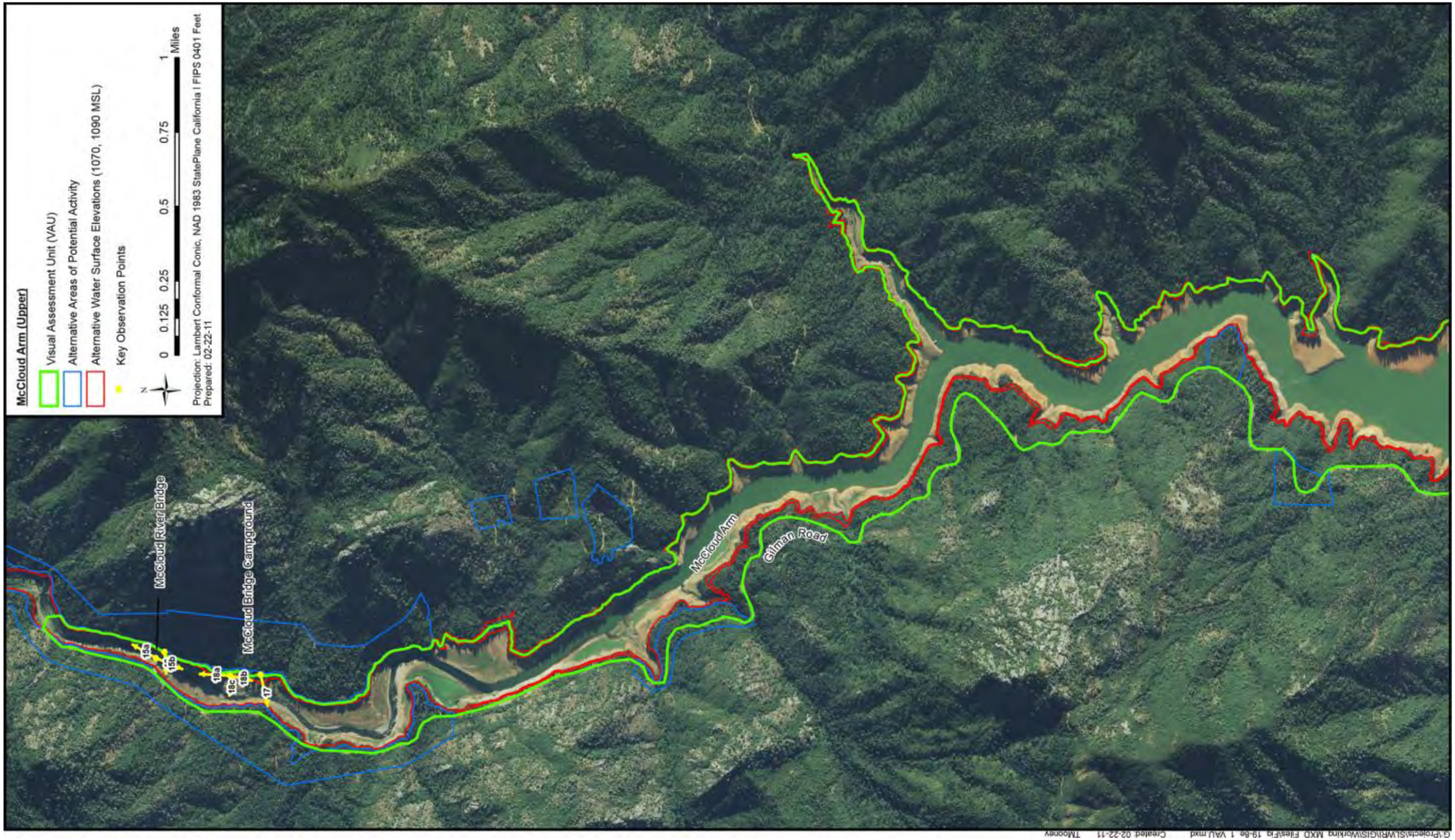

Figure 19-8e. Part 1 – Visual Assessment Unit and Key Observation Points

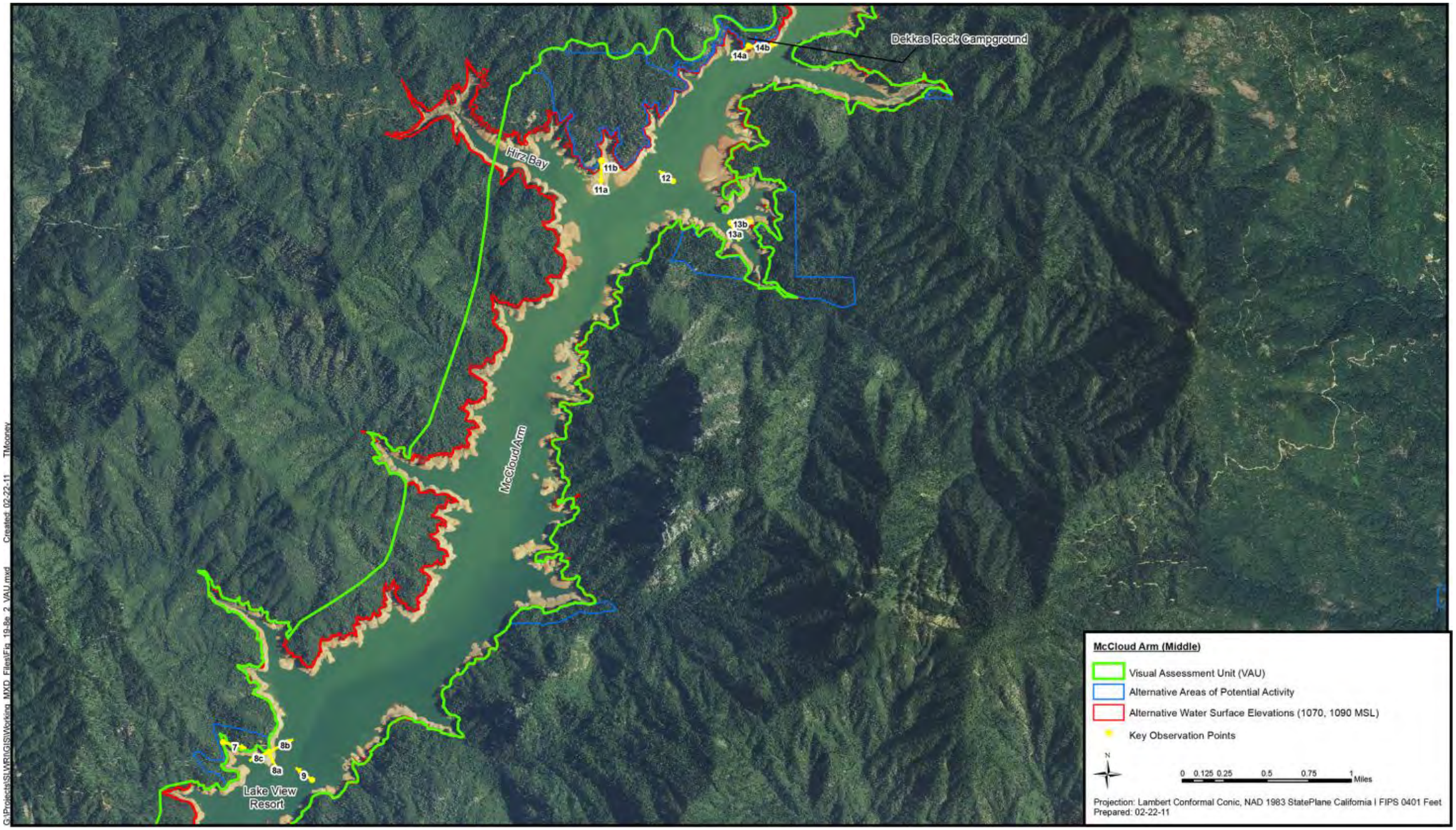

Figure 19-8e. Part 2 – Visual Assessment Unit and Key Observation Points

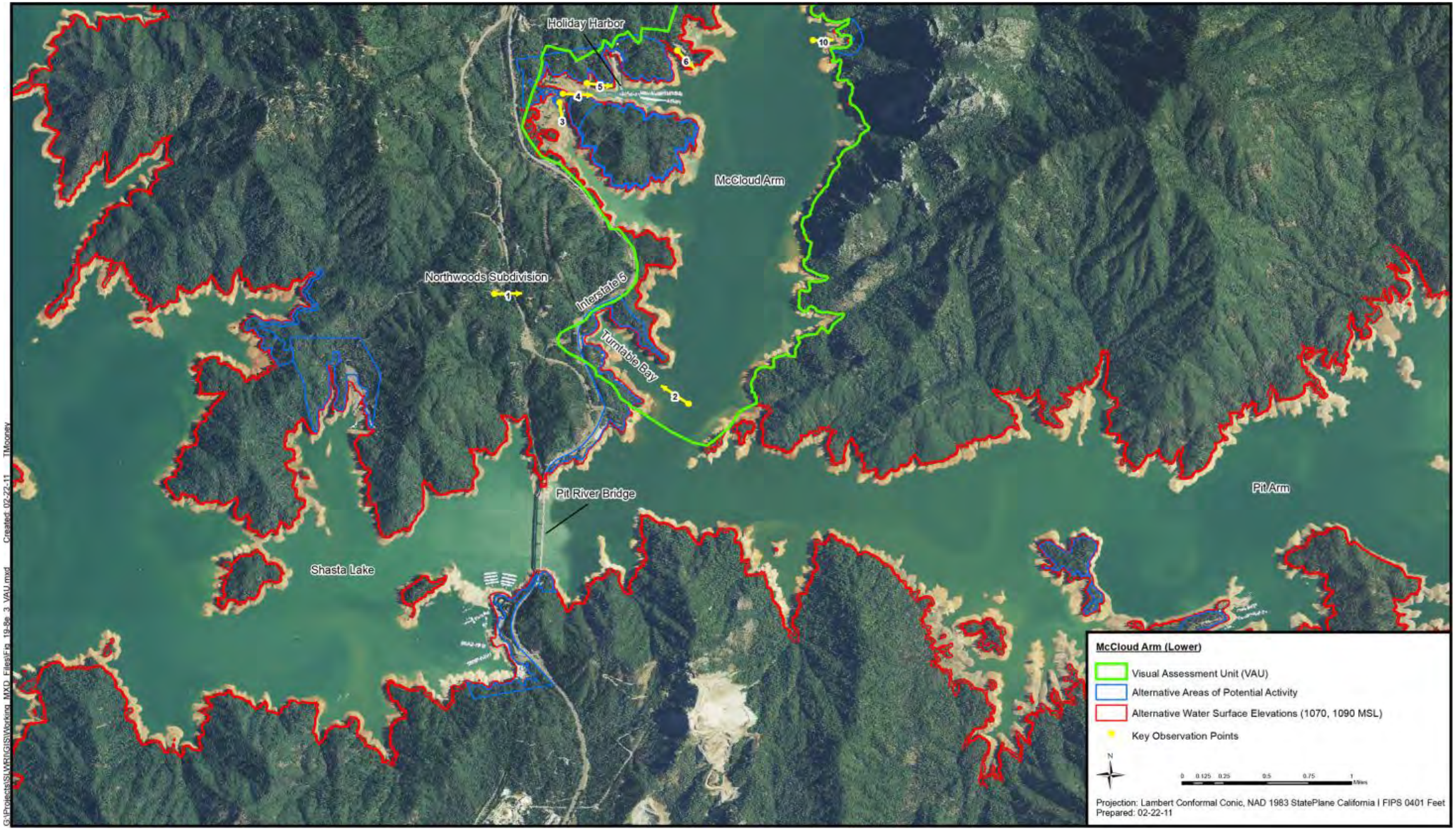

Figure 19-8e. Part 3 – Visual Assessment Unit and Key Observation Points

McCloud Arm VAU, KOP 1, Photo 1
View of the McCloud Arm, Turntable Bay and vicinity from a home located off of Northwoods Road, west of I-5.

McCloud Arm VAU, KOP 2, Photo 2
View of Turntable Bay from the McCloud Arm of Shasta Lake.

McCloud Arm VAU, KOP 3, Photo 3
View of the Bailey Cove Boat Ramp from the Bailey Cove parking lot.

McCloud Arm VAU, KOP 4, Photo 4
View of Holiday Harbor from the Bailey Cove Day Use Area.

McCloud Arm VAU, KOP 5, Photo 5
View of Holiday Harbor from the Holiday Harbor Campground entrance.

McCloud Arm VAU, KOP 6, Photo 6
View looking south toward the McCloud Arm from the Shasta Caverns parking lot.

McCloud Arm VAU, KOP 7, Photo 7
View from the Lake View Resort caretaker residence.

McCloud Arm VAU, KOP 8, Photo 8a
View of the McCloud Arm looking south from the Lake View Resort Boat Ramp.

Photographs for Figure 19-8e, Plate 1

McCloud Arm VAU, KOP 8, Photo 8b
View of the McCloud Arm looking northeast from the Lake View Resort Boat Ramp.

McCloud Arm VAU, KOP 8, Photo 8c
View of the Lake View Resort Marina from the Lake View Resort Boat Ramp.

McCloud Arm VAU, KOP 9, Photo 9
View of Lake View Resort from the McCloud Arm of Shasta Lake.

McCloud Arm VAU, KOP 10, Photo 10
View of Shasta Caverns dock on east side of lake from the McCloud Arm of Shasta Lake.

McCloud Arm VAU, KOP 11, Photo 11a
View of the McCloud Arm downstream from the Hirz Bay Boat Ramp.

McCloud Arm VAU, KOP 11, Photo 11b
View of the McCloud River Arm upstream, from the Hirz Bay Boat Ramp.

McCloud Arm VAU, KOP 12, Photo 12
View of Hirz Bay from the McCloud Arm of Shasta Lake.

McCloud Arm VAU, KOP 13, Photo 13a
View of Campbell Creek inlet looking southeast from the McCloud Arm of Shasta Lake

Photographs for Figure 19-8e, Plate 2

McCloud Arm VAU, KOP 13, Photo 13b
View of Campbell Creek inlet looking east from the McCloud Arm of Shasta Lake

McCloud Arm VAU, KOP 14, Photo 14a
View of the McCloud Arm downstream, from the Dekkas Rock Campground.

McCloud Arm VAU, KOP 14, Photo 14b
View of the McCloud Arm upstream, from the Dekkas Rock Campground.

McCloud Arm VAU, KOP 15, Photo 15a
View of the McCloud River upstream, from the McCloud River Bridge.

McCloud Arm VAU, KOP 15, Photo 15b
View of the McCloud River downstream, from the McCloud River Bridge.

McCloud Arm VAU, KOP 16, Photo 16
View of the McCloud River Bridge, from the eastern approach.

McCloud Arm VAU, KOP 17, Photo 17
View of the McCloud Arm from the McCloud Bridge Campground - Space 10.

McCloud Arm VAU, KOP 18, Photo 18a
View of the McCloud Arm from open area west of Space 1, McCloud Bridge Campground.

Photographs for Figure 19-8e, Plate 3

McCloud Arm VAU, KOP 18, Photo 18b
View of the McCloud Arm from open area west of Space1, McCloud Bridge Campground.

McCloud Arm VAU, KOP 18, Photo 18c
View looking west from the open area west of Space 1, McCloud Bridge Campground.

Photographs for Figure 19-8e, Plate 4

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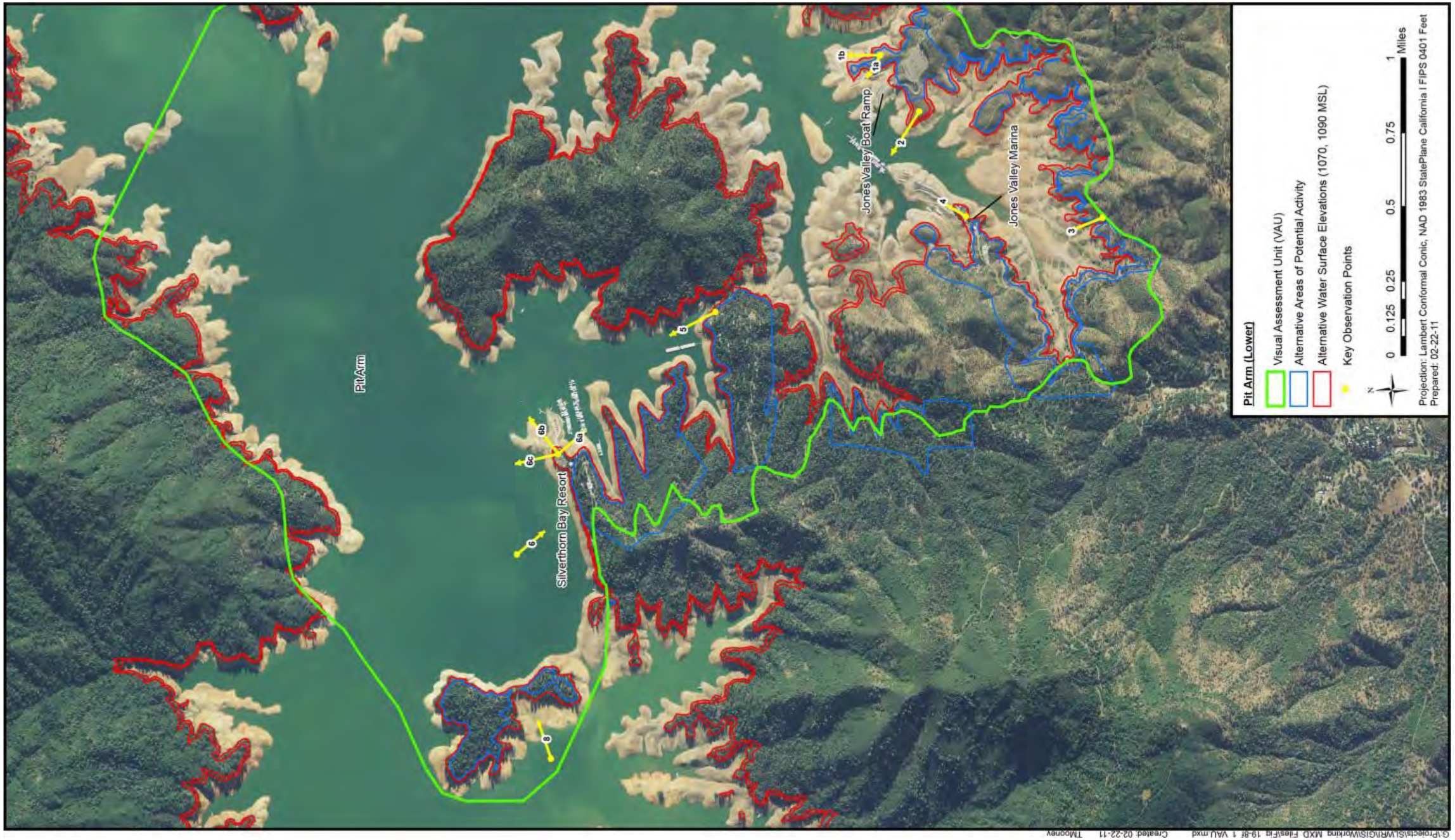

Figure 19-8f. Part 1 – Visual Assessment Unit and Key Observation Points

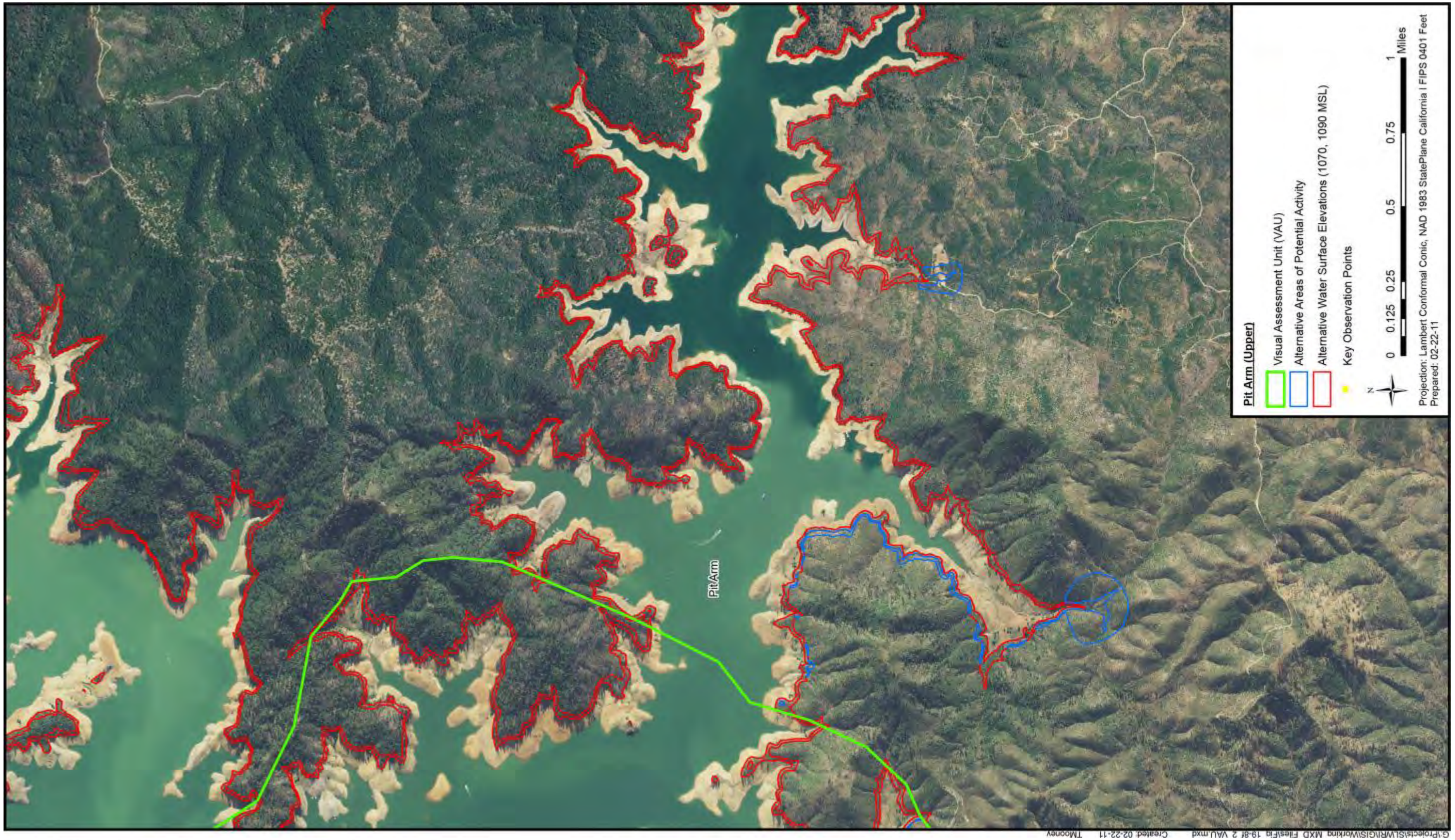

Figure 19-8f. Part 2 – Visual Assessment Unit and Key Observation Points

Pit Arm VAU, KOP 1, Photo 1a
View of the Pit Arm from the Jones Valley parking area, looking northwest.

Pit Arm VAU, KOP 1, Photo 1b
View of the Pit Arm from the Jones Valley parking area, looking northeast.

Pit Arm VAU, KOP 2, Photo 2
View of the Pit Arm from the Jones Valley parking area (west end), looking west.

Pit Arm VAU, KOP 3, Photo 3
View of the Pit Arm from the entrance to the Jones Valley Campground.

Pit Arm VAU, KOP 4, Photo 4
View of the Pit Arm looking north from the Jones Valley Resort Boat Ramp.

Pit Arm VAU, KOP 5, Photo 5
View of the Pit Arm from Juniper Drive, Silverthorn Resort.

Pit Arm VAU, KOP 6, Photo 6a
View of the Silverthorn Marina from the top of the boat ramp looking east.

Pit Arm VAU, KOP 6, Photo 6b
View of the Silverthorn Marina from the top of the boat ramp looking northeast.

Photographs for Figure 19-8f, Plate 1

 **Pit Arm VAU, KOP 6, Photo 6c** View of the Silverthorn Marina from the top of the boat ramp looking north.	 **Pit Arm VAU, KOP 7, Photo 7** View of Silverthorn Marina looking south from the Pit Arm of Shasta Lake.	 **Pit Arm VAU, KOP 8, Photo 8** View of the west side of Ski Island looking east from Shasta Lake.	

Photographs for Figure 19-8f, Plate 2

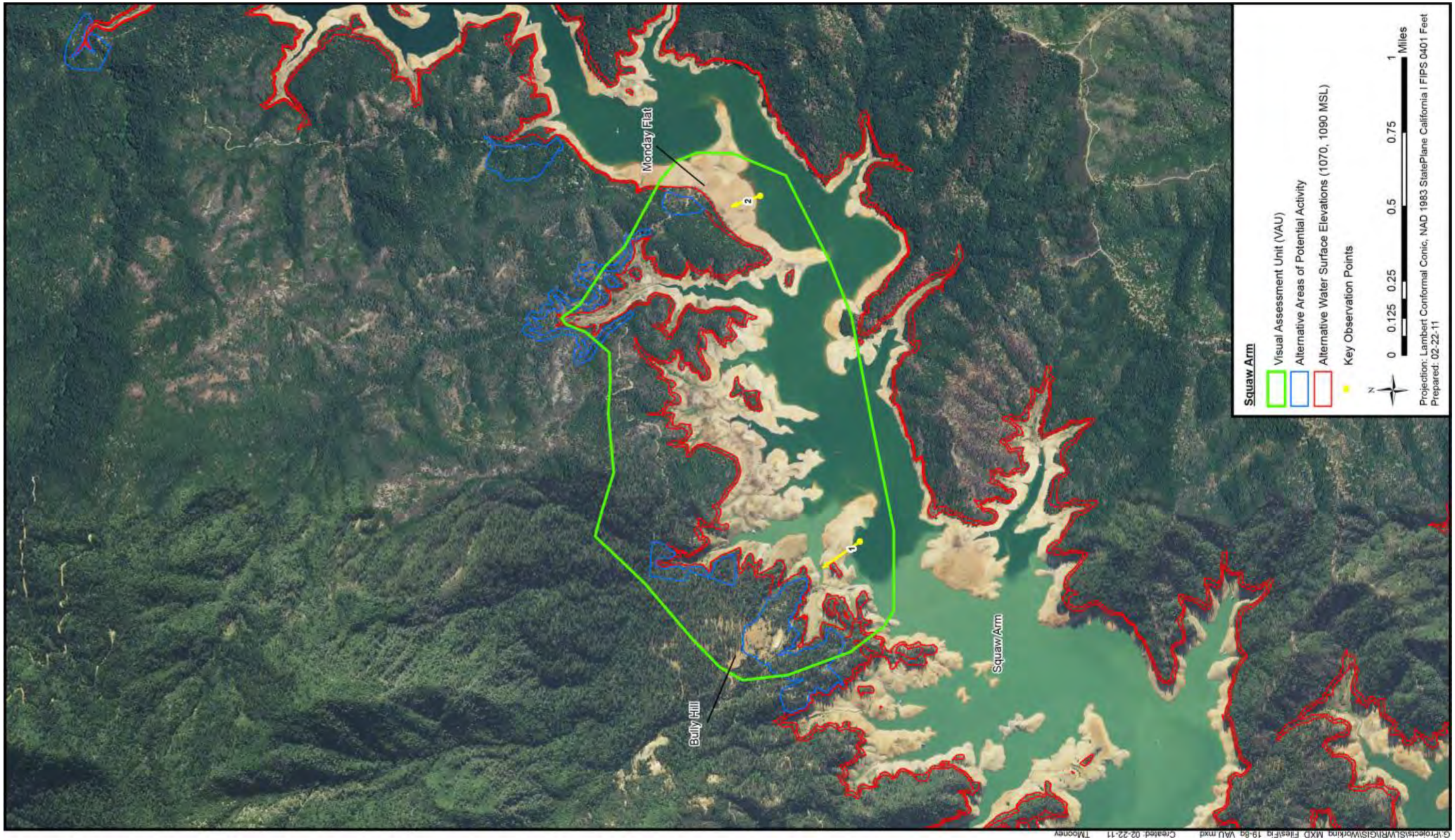

Figure 19-8g. Visual Assessment Unit and Key Observation Points

 **Squaw Arm VAU, KOP 1, Photo 1** View of Bully Hill looking north from the Squaw Arm of Shasta Lake.	 **Squaw Arm VAU, KOP 2, Photo 2** View of Monday Flat looking north from the Squaw Arm of Shasta Lake.		

Photographs for Figure 19-8g, Plate 1

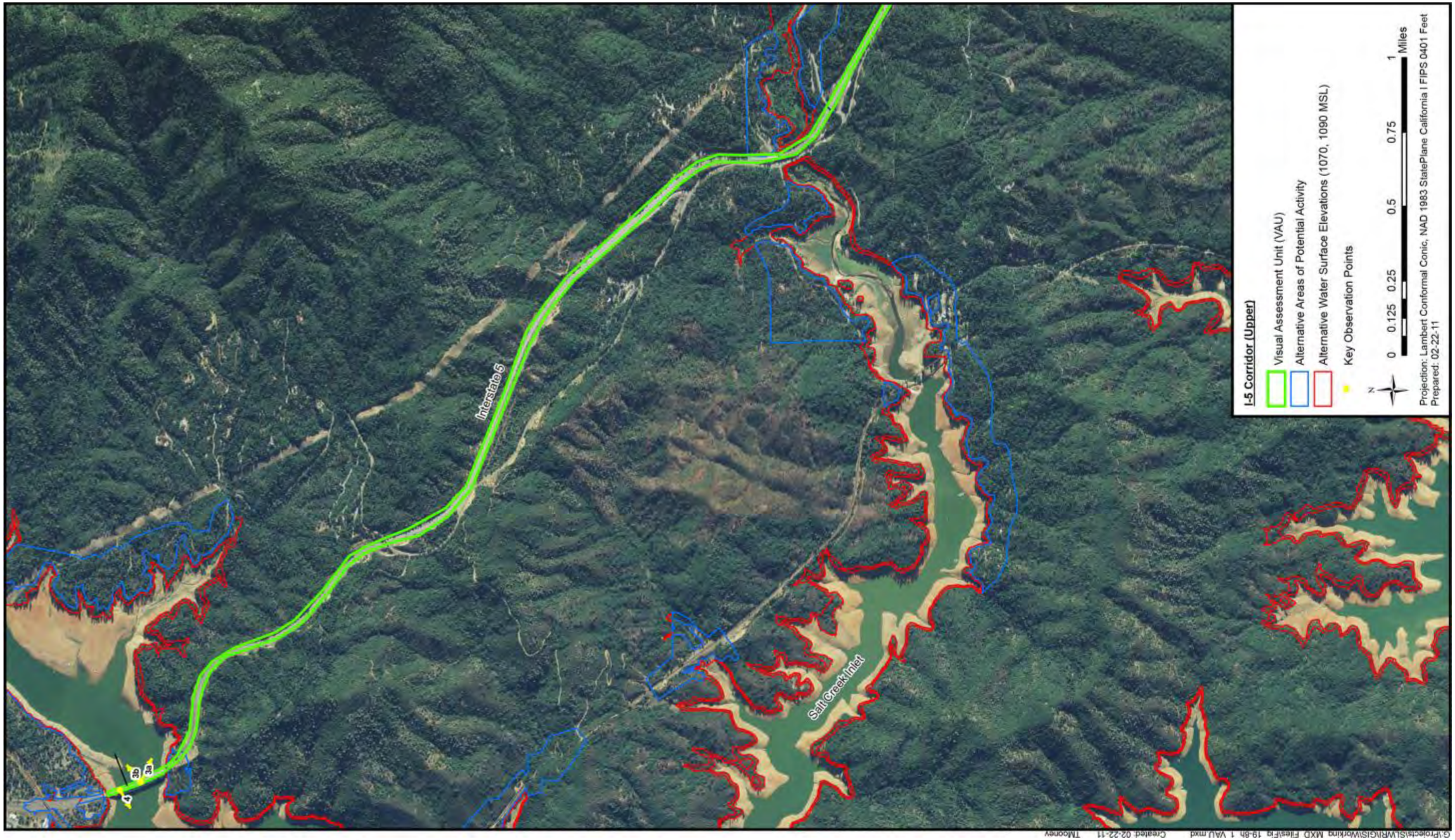

Figure 19-8h. Part 1 – Visual Assessment Unit and Key Observation Points

Figure 19-8h. Part 2 – Visual Assessment Unit and Key Observation Points

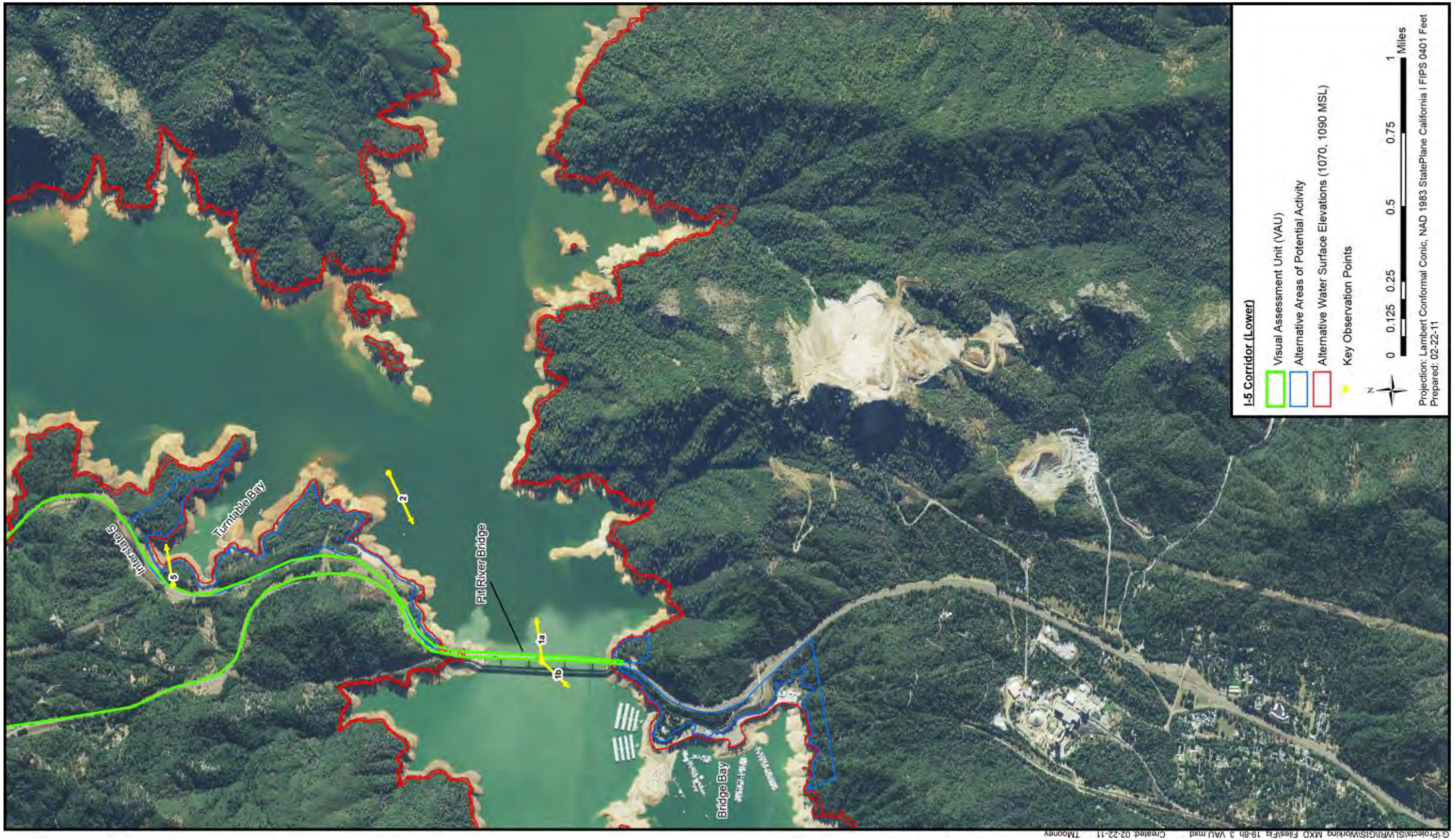

Figure 19-8h. Part 3 – Visual Assessment Unit and Key Observation Points

I-5 Corridor VAU, KOP 1, Photo 1a
View of the Pit Arm (right) and the McCloud Arm (left) from the Pit River Bridge, as seen from I-5 northbound.

I-5 Corridor VAU, KOP 1, Photo 1b
View of Bridge Bay Resort from the Pit River Bridge, as seen from I-5 southbound.

I-5 Corridor VAU, KOP 2, Photo 2
View of the Pit River Bridge looking west from the Pit Arm of Shasta Lake.

I-5 Corridor VAU, KOP 3, Photo 3a
View of the Sacramento Arm looking toward the Antlers Campground from the Antlers Bridge, as seen from I-5 northbound.

I-5 Corridor VAU, KOP 3, Photo 3b
View of the Antlers Public Boat Launch from the Antlers Bridge, as seen from I-5 northbound.

I-5 Corridor VAU, KOP 4, Photo 4
View of the Sacramento Arm west of the Antlers Bridge, as seen from I-5 southbound.

I-5 Corridor VAU, KOP 5, Photo 5
View of the McCloud Arm and vicinity at Turntable Bay, as seen from I-5 northbound.

Photographs for Figure 19-8h, Plate 1

The locations of VAUs were determined using the following steps:

- **Identification of Visually Sensitive Areas** – A determination of sensitivity was made by considering the level of use that a particular view receives by the public. Driving routes, recreational areas, and designated scenic corridors subject to heavy to moderate use represented the numerous sites in the primary study area that could be considered visually sensitive. Examples of visually sensitive areas include the I-5 corridor over the Pit River Bridge, the Shasta Dam Visitor Center, and Bridge Bay Resort.

- **Definition of the Landscape Character** – The landscape character is shaped by the physical, biological, and cultural attributes that combine to make a landscape identifiable or unique. The diverse terrain of the region coupled with the unique attributes of Shasta Lake and the Sacramento River are examples of the landscape character of the primary study area.

- **Identification of Visually Sensitive Observation Points** – This step was used to identify visually sensitive observation points throughout the primary study area that could be adversely affected by changes to the visual environment resulting from project implementation. Important examples of visually sensitive observation points include the vista point located on SR 151 and residences overlooking portions of Shasta Lake. Views from such points would be affected by changes in water levels, as well as the changes to infrastructure associated with raising Shasta Dam and enlarging Shasta Lake.

- **Identification of Visually Affected KOPs** – KOPs are determined by the extent of observable visual impacts from a specific location, and would depend on the location and distance of the affected area relative to the visually sensitive observation point. The analysis of impacts at such sites considered whether or not project activities would be in the direct line of sight or would occur in the foreground (0 to 0.5 mile) or middle ground (0.5 to 4 miles) view. The distinctiveness of features begins to diminish beyond 3 miles. KOPs represent observation points in the primary study area having a direct line of sight to, or a view of, the foreground or middle ground of affected areas. The KOPs selected for the analysis of project impacts are identified in Table 19-2 and are further described in the following section.

- **Classification of Scenic Attractiveness** – Scenic attractiveness refers to a classification system used to distinguish unique or remarkable views from those that are more mundane. As described previously, the classification system consists of the following categories: Class A, “distinctive”; Class B, “typical”; and Class C “indistinctive.”

Following is a discussion of the VAUs and associated KOPs that were identified for the primary study area. Because the primary study area is so large and much of it is remote, VAUs were established at locations subject to relatively high levels of use where changes to the visual environment would be most apparent.

Shasta Dam VAU The Shasta Dam VAU was established to illustrate the views of Shasta Dam from the SR 151 overlook, the Shasta Dam Visitor Center, and the Main Body of Shasta Lake. All of these locations draw numerous visitors annually and receive widespread publicity in regional tour guides. Shasta Dam and the adjacent visitor center provide a unique setting from which the public's visual impression of the overall impact of the project (i.e., raising of water levels, increased dam elevation) would be made. A popular attraction in the Shasta Dam VAU is to walk across the dam. Unregulated vehicle traffic is restricted because of homeland security concerns. However, since 2010, visitors have been allowed to drive across the dam between 6 a.m. and 10 p.m. after producing a valid driver's license and vehicle registration and subjecting their vehicle and any trailer to inspection. In addition, boaters and other water-based recreationists have expansive views of the waterside face of the dam.

Shasta Dam VAU – KOP 1 Views from the Shasta Dam overlook on SR 151 capture the essence of the region by offering unobstructed views of the Three Shastas (Shasta Dam in the foreground, Shasta Lake in the middle ground, and Mount Shasta in the background). Situated on the mountainside above the southeast side of the dam, the overlook offers viewers the opportunity to observe not only the Three Shastas, but also the upper Sacramento River as it flows from the dam spillway and miles of mountainous, forested terrain in most directions. The unique and outstanding scenic quality of this view makes it a Class A visual resource that also contains components of the more typical Class B views (e.g., forest, ridgelines).

KOP 1, Photo 1a, illustrates the Class A panoramic views from the SR 151 overlook to the north/northeast. The dam, the southern end of the Main Body of the lake, and the forested landscape are prominent; Mount Shasta, about 50 miles away, is dominant in the background. Also clearly visible, but less remarkable than the dam, is the dam's infrastructure, including the powerhouse and maintenance roads. The uniqueness of the dam and its infrastructure set against a dramatic landscape of forest and mountains makes this view a Class A visual resource.

KOP 1, Photo 1b, illustrates the limited Class B views of the upper Sacramento River channel downstream from the spillway from the SR 151 overlook. The Sacramento River, regulated by Keswick Reservoir, flows through a steep canyon and is obscured from view by topography and vegetation. The Chappie-Shasta Off-Highway Vehicle (OHV) Area, managed by the U.S. Department of the Interior, Bureau of Land Management (BLM), along with sections of County Road 5G011 (which is accessed via the dam) and an abandoned railroad

line, are visible on the north side of the river, but the river channel itself is not visible from this KOP.

Shasta Dam VAU – KOP 2 KOP 2, Photo 2a, illustrates the Class A and B views of the southern end of the lake as seen from the center of the roadway crossing over Shasta Dam. A panoramic view of the southern end of the lake, which occupies the foreground and the middle ground with Mount Shasta on the horizon, is seen from this area. The Centimudi Boat Ramp is clearly visible in the middle ground to the east (KOP 2, Photo 2c).

Turning to the west (KOP 2, Photo 2b), the Shasta Dam compound and the Sacramento River below the dam form the primary focal point from this viewpoint. The river meanders out of sight about 1 mile downstream from the dam. This spectacular view of the spillway is a Class A visual resource.

Shasta Dam VAU – KOP 3 Downstream from the dam, on the right (north) side of the Sacramento River, BLM maintains the Chappie-Shasta OHV Area. KOP 3 was established to illustrate the limited views of the downstream face of Shasta Dam from the OHV main staging area. As shown in Photo 3a, the middle ground of the view is dominated by a Class B view of the upper part of Shasta Dam. Vegetation and topography limit the extent of views of the dam from this location and, as illustrated by Photo 3b, also effectively block views of the river channel south toward the river from the staging area.

Shasta Dam VAU – KOP 4 A public campground at the OHV staging area provides views for OHV recreationists. Although Shasta Dam is not visible from the campground, the Sacramento River dominates the middle ground view to the north, east, and south. KOP 4, Photos 4a and 4b, respectively, show the Class B views of the river upstream and downstream.

Shasta Dam VAU – KOPs 5, 6, 7, and 8 Approximately 0.25 mile downstream from the OHV staging area, south of the boundary of the Shasta Unit of the NRA, are the historic mining community of Coram and the Coram Ranch, a privately owned recreation resort. KOPs 5, 6, 7, and 8 were established to illustrate the varying degrees of river views (and at one location (KOP 7, Photo 7a), a view of Shasta Dam) from the Coram Ranch cabins. Views from the River House (KOP 5, Photos 5a and 5b), the Dogwood House (KOP 6, Photos 6a and 6b), and the modular cabins (KOP 8, Photo 8) are considered Class B, offering views of the Sacramento River approximately 1 mile downstream from the dam. The most remarkable view of the primary study area from the ranch is the view of Shasta Dam from the ranch's main house (KOP 7, Photo 7a). Although distance places the dam in the middle ground, as seen from the main house, the view of the dam is nonetheless impressive. Foreground vegetation serves to frame the dam and draw the viewer's focus to the feature. KOP 7, Photos 7b and 7c, illustrate the views of the Sacramento River from the main ranch house. The views from KOP 7 of Shasta Dam and the Sacramento River are considered to be Class A.

Shasta Dam VAU – KOP 9 KOP 9 was established to demonstrate the view of Shasta Dam and the Sacramento River from Coram Road, upslope of the OHV staging area. The Class A view of the river and dam from KOP 9 (Photo 9a) shows the foreground, middle ground, and background landscape. Although most of the dam is visible, its base and a portion of the right abutment (north end) are obscured by topography. The narrowing of the river channel toward the background draws the viewer's eye toward the dam and the mountains in the background. The Class B view looking downstream (Photo 9b) offers partial views of the river, limited by vegetation and topography.

Shasta Dam VAU – KOP 10 KOP 10 was established to illustrate the view afforded motorists traveling on Lake Boulevard. Coming into the NRA from the south, approximately 0.5 mile of the extreme northern end of Lake Boulevard follows the shoreline of Shasta Lake before ending at the Shasta Lake Visitor Center. Similar to views from SR 151 (KOP 1), the elevation of the roadway above the lake allows for expansive vistas from pullouts along the route. Photo 10a shows the Class A vista point view of the lakeside face of Shasta Dam, the Main Body of Shasta Lake in the middle ground, and the forested mountain terrain that dominates the background. Vegetation and topography in the foreground frame the view but also restrict it. The full extent of the view from KOP 10 cannot be fully appreciated by viewers unless they stop at a roadside pullout; otherwise, they will quickly pass it by when traveling on Lake Boulevard.

Views of Shasta Lake, the surrounding mountains, and Mount Shasta (in the distant background) looking north from KOP 10 (Photo 10b) are impressive but more typical of views around Shasta Lake. The Class B view of the lake and its vicinity from this location would be most noticed by motorists traveling east on Lake Boulevard, but the view would be of short duration because the road turns abruptly south away from the lake a short distance beyond this point.

Shasta Dam VAU – KOP 11 KOP 11, Photo 11, illustrates the panoramic view that boaters and other water-based recreationists in the Main Body of the lake have of Shasta Dam. The attractiveness of a distinctive built feature, such as the dam, in contrast to the natural character of its surroundings (e.g., water and mountains) is subjective; nonetheless, it is an impressive sight. The uniqueness of the dam set against a dramatic landscape of water and mountains makes this view a Class A visual resource.

Dry Creek Trail VAU The proximity of the Dry Creek Trail area to Shasta Dam makes it a prominent part of the landscape when viewed from the Main Body of Shasta Lake. Most of the Dry Creek Trail shoreline is not visible from the dam, the Chappie-Shasta OHV Area staging area and campground, or other areas frequented by the public because it is obstructed by topography and has limited public access. Although the Dry Creek Access Road meanders through the uplands adjacent to the shoreline, the road is primitive and used only by OHV recreationists, mountain bikers, and the occasional hiker.

Dry Creek Trail VAU – KOP 1 Most views of the shoreline from the road are obstructed by vegetation and distance. KOP 1 (Photo 1) shows the lakeside view, which is the most common vantage point from which visitors to Shasta Lake would see the Dry Creek Trail shoreline. This Class B view is common throughout the Shasta Lake portion of the primary study area.

Little Backbone Inlet VAU The Little Backbone Inlet VAU was established to illustrate the more typical views that boaters and other water-based recreationists would have of the western side of Shasta Lake. Much of this area has been previously disturbed by mining, wildfire, and OHV activities. Because most of the western shoreline is remote and undeveloped, few people visit the area.

Little Backbone Inlet VAU – KOP 1 As with much of the western shoreline, the distance from the more populated parts of the primary study area makes it difficult to discern specific details of the landscape. KOP 1, Photos 1a and 1b, illustrate the Class B views in this part of the lake.

Digger Bay VAU The Digger Bay Marina is one of the most difficult marinas on Shasta Lake to access by car. Although it is only 3 miles from the City of Shasta Lake, the road is narrow and extremely winding and the surrounding terrain is very steep. Nonetheless, this USFS-permitted marina offers a variety of amenities that make it a popular destination, including the only source of gas on the western part of the lake, a small store, and boat rentals.

Digger Bay VAU – KOPs 1, 2, and 3 Views of Shasta Lake from the upper parking area are limited by vegetation and topography (KOP 1, Photo 1, and KOP 2, Photo 2). Similarly, views of Shasta Lake (KOP 3, Photo 3a) and the uplands adjacent to the marina (KOP 3, Photos 3b and 3c) are also extremely limited by vegetation and topography. These views are a Class C, indistinctive visual resource.

Packers Bay VAU

Packers Bay VAU – KOP 1 Although smaller than nearby Bridge Bay Resort, Packers Bay is a popular destination for water-based recreationists. In addition to a boat ramp managed by USFS, the Packers Bay Marina (permitted by USFS) features amenities such as gas, houseboat rentals, and a small store that is open on a seasonal basis in a less congested environment than at other recreational facilities around the lake. Scenery in and around the Packers Bay Marina is not terribly dramatic, but rather is typical of the region. KOP 1, Photo 1, shows the Class B view from the Packers Bay Boat Ramp.

Bridge Bay VAU The Bridge Bay Resort and Marina, permitted by USFS, is the largest and one of the most popular marinas on the lake. Its close proximity to I-5 and amenities such as a restaurant, lodging, a store, and a full-service boat marina with houseboat rentals draw a large number of visitors annually. Tourists and motorists, particularly those traveling along the I-5 corridor, are

attracted to Bridge Bay by its accessibility. It is from Bridge Bay that most visitors to the region are likely to derive their initial visual perception of Shasta Lake and the surrounding area.

Bridge Bay VAU – KOP 1 KOP 1, Photos 1a and 1b, illustrate the view of Shasta Lake from the main parking area adjacent to the Bridge Bay store. During full pool or nearly full pool periods, this parking area is used heavily by visitors, boat owners, and other recreationists accessing the lake from Bridge Bay. As the water recedes, marina users and other recreationists tend to follow it downslope, thus lessening the level of use received by this parking area and subsequently altering the viewing perspective. Photo 1a illustrates the Class B view of the Bridge Bay Marina as seen from KOP 1. Landscape features in this photo as well as Photo 1b, taken from the same KOP but from a slightly different perspective, are generally typical for the area – that is, positive yet common.

Bridge Bay VAU – KOP 2 KOP 2, Photo 2, illustrates the striking view of the I-5 Pit River Bridge and the UPRR trestle that is located on the lower deck of the bi-level bridge structure, as seen from the northern part of the Bridge Bay Marina. This view is available not only from the parking lot and northern marina, but from the resort's restaurant and hotel as well. As a result of its strong positive attributes (e.g., uniqueness, pattern, balance, mystery), the bridge, which is a Class A visual resource, dominates the middle ground of the scene.

Bridge Bay VAU – KOP 3 South of Bridge Bay's Marina 4, which is located in the extreme southeast corner of the main body of the lake adjacent to the UPRR tracks, is the Bridge Bay Marina maintenance area. From this location there is a view of the train tunnels adjacent to the east side of the maintenance area. KOP 3, Photo 3a, shows the northern end of the southernmost tunnel, and Photo 3b (taken from the same location) shows the southern end of the northernmost tunnel. Both perspectives would be apparent only to people working in the maintenance area or those who purposely access the area to view the trains. The track and its features are set back against the hillside; therefore, distance, shadow, and topography would obscure most views of this location from the lake, and viewers passing through the primary study area on the train would not have much opportunity to view the lake. Photo 3c, taken from the same location as the previous two photos, demonstrates the distance of the tracks from the Main Body of the lake and illustrates the site's Class B view.

Bridge Bay VAU – KOP 4 KOP 4 was established to document the initial impression that visitors accessing Bridge Bay's Marina 4 would experience from the stairway. Similar to the photos showing views from KOP 1, KOP 4, Photos 4a and 4b, show the Class B views of the lake from this location.

Sacramento Arm VAU The Sacramento Arm is the busiest and most developed arm of Shasta Lake. For purposes of this assessment, the Sacramento Arm VAU consists of the northern portion of the Sacramento Arm from the Sugarloaf Creek inlet north.

Sacramento Arm VAU – KOPs 1 and 2 In the Pollock area, the Sacramento Arm begins to display characteristics of a river channel more than a lake. Banks on either side of the channel become increasingly narrow as one travels upstream. KOPs 1 and 2 were established to illustrate the limited views from Riverview Drive, a local road running parallel to the east side of I-5 that is primarily used by residents and recreationists to access Shasta Lake. Photos 1 and 2 illustrate views available to motorists traveling along Riverview Drive. Despite being less than 350 feet from the lake, the elevation of Riverview Drive and adjacent vegetation obscure most views that motorists would have from this roadway. The indistinctive views from both of these KOPs are best characterized as Class C, having low scenic quality.

Sacramento Arm VAU – KOP 3 The community of Lakeshore, which stretches along the west (right) side of the Sacramento Arm, is composed primarily of permanent and vacation homes and a few commercial resorts. Proceeding south on Lakeshore Drive, along the western (right) shoreline, the first inlet that is crossed (Doney Creek) allows for extended views upstream and a complex view of the Sacramento Arm downstream (Photo 3). The complexity of the latter view stems from the presence of a UPRR trestle, which parallels the roadway in the foreground, and the Antlers Bridge in the middle ground. Although these structures contribute to an interesting view, neither is unique; therefore, both aspects from this KOP are best characterized as having a Class B scenic quality. Assuming a speed of 45 miles per hour (mph), motorists passing over the Doney Creek inlet would be exposed to the views on either side of the roadway for approximately 9 seconds.

Sacramento Arm VAU – KOP 4 Continuing south on Lakeshore Drive, USFS's Lakeshore East Campground offers views of the Sacramento Arm. Although these views are somewhat obscured by trees, views both upstream and downstream from the campground's main entrance are fairly broad (KOP 4, Photos 4a and 4b, respectively). Photo 4a illustrates the distance upstream that can be seen from this KOP. The features in this view, such as the Antlers Bridge in the background, are not unique or remarkable. Similarly, the downstream view (Photo 4b) is typical for the area. Thus, views of the lake from the campground entrance are best characterized as having a Class B scenic quality.

Sacramento Arm VAU – KOP 5 Lakeshore Drive crosses the lake for the second time to the south of I-5 at the Charlie Creek inlet. Similar to the views described for KOP 3 and KOP 4 views from the Charlie Creek Bridge, both to the northwest (KOP 5, Photo 5a) and to the southeast (Photo 5b), are expansive, but common to the area (Class B scenic quality): the lake in the foreground, vegetation in the middle ground, and mountains in the background. Assuming a

speed of 45 mph, motorists passing over the Charlie Creek inlet would be exposed to the views on either side of the roadway for approximately 8 seconds.

Sacramento Arm VAU – KOP 6 The Beehive Campground, managed by USFS as a dispersed campground, typifies the nature of the views afforded visitors to the parts of the lake west of I-5. As shown by KOP 6, Photos 6a, 6b, and 6c, views are expansive but generally unremarkable. There are no features unique to the area to distinguish it from other nearby Class B vantage points.

Sacramento Arm VAU – KOP 7 Sugarloaf Cove is located in one of the most remote parts of the Sacramento Arm. Aside from a narrow road in the uplands that leads into the rugged Backbone Ridge region, there are no recreational improvements in the cove. Photos 7a and 7b illustrate the narrowness of the cove, where a broad bathtub ring of soils is exposed during periods of drawdown. Views in the Sugarloaf Cove area are indistinctive and are best characterized as Class C, having low scenic quality.

Sacramento Arm VAU – KOPs 8, 9, and 10 Sugarloaf Resort Marina is situated adjacent to a residential and commercial area. KOPs 8, 9, and 10 were established to show the view of the marina and its features from several aspects including homes (KOP 8, Photo 8), the marina access road (KOP 9, Photos 9a–9c), and the public boat ramp (KOP 10, Photo 10). The broad expanse of views from the Sugarloaf shoreline, coupled with the attributes of the marina's structure (e.g., pattern, balance, intactness), is somewhat unusual in the area but typical for Shasta Lake (thus, a Class B distinction).

Sacramento Arm VAU – KOP 11 The Tsasdi Resort, a privately owned recreation facility located on Lakeshore Drive, offers guests a variety of outdoor activities, including hiking, fishing, and boating. Cabins and other resort buildings are situated on the hillside overlooking the lake. The resort maintains its own boat dock, which is accessed from a small parking area immediately adjacent to Lakeshore Drive. The view shown in Photo 11a, looking east from this parking area, is somewhat distinctive but not unique. A railroad trestle crossing the lake in the middle ground creates diversity of pattern in the view, but because the feature is not unique, it is best characterized as having a Class B scenic quality. Similarly, the view to the south from the same KOP is fairly typical for the area and is also best described as having a Class B scenic quality.

Sacramento Arm VAU – KOP 12 Located on the uplands above the east (right) side of the lake is the Lakeshore Resort Campground. This privately owned resort is near the community of Lakeshore (less than 0.25 mile) and I-5 (approximately 0.5 mile), which makes it a popular recreation destination. Although scenic, neither the upstream view (to the east) (Photo 12a) nor the downstream view (to the southeast) (Photo 12b) is unique for the area (thus, Class B). The Antlers Bridge in the middle ground of the upstream view is prominent and creates a sense of balance between the foreground and background, but the view is not distinct (i.e., unusual, unique, or outstanding) in

the context of the project area and is best characterized as having a Class B scenic quality.

Sacramento Arm VAU – KOP 13 One of the most significant inlets branching off of the Sacramento Arm is the Salt Creek Inlet. USFS campgrounds (Nelson Point and Oak Grove) and a day use area (Oak Grove) on the north (right) side of this inlet are inaccessible by boat because the water in the inlet is shallow. As shown in Photo 13, taken from the Oak Grove Day Use Area, land-based recreation facilities are a fair distance from water (this photo was taken in May 2008). Steep topography below the ordinary high-water line significantly restricts the view from this KOP. The lake's bathtub ring dominates the Class C, indistinctive view. The quality of the view during periods in which the lake is full or nearly full would be more typical of the project area and would thus be better characterized as having a Class B scenic quality.

Sacramento Arm VAU – KOP 14 The south (left) shore of the Salt Creek Inlet supports a variety of residences, including privately owned cabins on NFS lands. Access via Salt Creek Lodge Road parallels much of the inlet's shoreline. KOP 14, established at the intersection of Salt Creek Lodge Road and Lower Salt Creek Road, illustrates the Class A views available to motorists, residents, and recreationists passing through the area. Features that set views from this KOP apart from the more typical views previously described for many of the KOPs in the primary study area are the presence of Mount Shasta in the background (although the mountain is difficult to distinguish because of haze present at the time Photo 14a was taken) and the distinctiveness of the UPRR trestle in the middle ground of Photo 14b. As viewed from KOP 14, the trestle imparts a sense of mystery; its northern end draws the viewer's eye to the background, where the trestle seemingly disappears into the mountainside.

Sacramento Arm VAU – KOP 15 KOP 15 illustrates a typical view from the residential development along Lower Salt Creek Road. The area is relatively steep and densely forested. The dominance of vegetation in the foreground of Photos 15a and 15b is indicative of the nature of views from residences, which have scenic quality (Class B) that is common for the region.

Sacramento Arm VAU – KOP 16 The Antlers Public Boat Ramp is located immediately east of I-5 and directly faces the Antlers Bridge, which spans the Sacramento Arm. As seen from the boat ramp, vegetation frames the bridge in the middle ground of the view (Photo 16). Built features (the boat ramp, Antlers Bridge, I-5) dominate the view, whereas unique landscape features, such as the river that meanders through the foreground and middle ground and the rugged mountains in the background, add to the uniqueness, pattern, and mystery of the view. The scenic quality of this view make it a Class A visual resource that also includes components of the more typical Class B views (e.g., forest, ridgelines).

Sacramento Arm VAU – KOP 17 KOP 17 was established to illustrate views from the Antlers Picnic Area located at the top of the Antlers Public Boat Ramp. Several picnic tables and benches allow the public the opportunity to sit and view both the upland parking area (Photo 17a) and the lake (Photo 17b). As shown by Photo 17a, the view of the public parking area is indistinctive, and thus, a Class C view. The view of the lake from the picnic area (Photo 17b) is somewhat more distinctive than the view toward the parking lot, but it is fairly typical of views from the Shasta Lake shoreline. Vegetation and topography often limit views of the water. This view would be a Class B, typical visual resource.

Sacramento Arm VAU – KOP 18 KOP 18 (Photos 18a–18c) was established to illustrate the views that campers staying at one of the public resorts or campgrounds around Shasta Lake would typically see (in this case, the Antlers Resort). Visual resources associated with the uplands (Photo 18a), lake (Photo 18b), and campground facilities (Photo 18c) are a combination of Class C indistinctive and Class B typical.

McCloud Arm VAU The McCloud Arm of Shasta Lake is notable for the towering gray limestone mountains that line the eastern shore of the arm. Large, naturally formed caverns in the limestone are popular tourist and spelunking destinations. Lake Shasta Caverns, a commercial operation, operates out of Bailey Cove and ferries visitors across the lake. In fact, boats provide the only access to the right bank of most of the McCloud Arm. Although parts of the lower reach of the McCloud Arm are visible from I-5, topography, including a gradual narrowing of the arm toward its upstream end and heavily forested uplands, limits most views to areas immediately surrounding the scattered residences, campgrounds, boat ramps, and small resorts along the arm.

McCloud Arm VAU – KOP 1 Located near the confluence of the McCloud and Pit arms, Turntable Bay currently houses administrative facilities, including USFS boat docks. As demonstrated by KOP 1 (Photo 1), Turntable Bay and vicinity can be seen by ridgeline homes overlooking the lake. Transitory views from the area in and around Turntable Bay (such as those available to motorists and boaters) are dependent on water levels, which in turn would determine the quality of the view (i.e., Class B or, subjectively, Class C).

McCloud Arm VAU – KOP 2 KOP 2 (Photo 2) was established near one of the most heavily used and visible areas on Shasta Lake: the confluence of the McCloud and Pit arms, on the east side of the I-5 Pit River Bridge. Boaters accessing the various arms of the lake east of Bridge Bay will pass through this area. As seen from the lake, views of the shoreline are panoramic; however, the quality of the view varies widely depending on the middle ground and background features (e.g., the presence of a distinctive built feature such as the Pit River Bridge or a snow-covered Mount Shasta). Photo 2 showing Turntable Bay is an example of the Class B typical view that is predominant around

Shasta Lake. This photo also illustrates the conspicuous bathtub ring that is seen along the entire perimeter of the lake as water levels draw down.

McCloud Arm VAU – KOPs 3 and 4 Bailey Cove is a USFS recreational facility that includes a public picnic area, campground, and boat ramp easily accessible from I-5. KOP 3, Photo 3, shows the narrow inlet in which the boat ramp is located. From the south-facing perspective of the boat ramp and its adjoining parking lot, little of the main body of the McCloud Arm can be seen. Class B views are typical for the area. North of the boat ramp, Bailey Cove, including a portion of Holiday Harbor, can be seen from the Bailey Cove Day Use/Picnic Area. Although Bailey Cove proper is separated from the inlet into which the boat ramp extends by the peninsular shape of the area, the quality of the views is similar. KOP 4, Photo 4, shows the limited Class B view to the east from the picnic area.

McCloud Arm VAU – KOP 5 Farther upstream is the Holiday Harbor Resort and Marina. This facility includes a campground, a marina, and a small store. KOP 5 (Photo 5) shows the distinctive, Class A view of the Holiday Harbor Marina as viewed from the Holiday Harbor Campground. Although the marina is nested in a small inlet, the view from this location draws the viewer's eye to the main body of the McCloud Arm framed by the limestone outcrops and the mountains in the background.

McCloud Arm VAU – KOP 6 Lake Shasta Caverns is a popular regional tourist destination located approximately 1.5 miles east of I-5. The west (right) shore public reception area includes a parking area, a store, restrooms, a play area, and a boat dock, which houses the privately owned ferry used to transport visitors across the lake to the caverns. With the exception of the boat dock, all public areas are located in uplands, and, as shown by KOP 6, Photo 6, the lake and eastern limestone outcrops are not readily apparent from the caverns parking lot. The aesthetic value of the lake and surrounding scenery is an important component of the experience offered by the Lake Shasta Caverns tour, which exposes visitors to a variety of Class A and B views during its various tours. The proprietor has expanded the sightseeing tour options to include dinner cruises during the summer that depart from the Lake Shasta Caverns reception center.

McCloud Arm VAU – KOPs 7 and 8 KOP 7, Photo 7, was established to show the view of the lake and the former Lakeview Marina from the former Lakeview Resort's caretaker residence. This destination is one of the most remote marinas and boat ramps on the McCloud Arm, located about 3 miles east of I-5. The dramatic background of mountains and limestone outcrops rising out of the lake makes the view from KOP 7 a Class A view, although the view available to the general public from this location is somewhat blocked by the caretaker's house and surrounding vegetation. Better opportunities for public views of the lake and vicinity from the former Lakeview Resort property are available farther up the shoreline at the boat ramp. As viewed from KOP 8, the

boat ramp extends south into the main body of the McCloud Arm, where people are exposed to expansive views looking south toward the Pit Arm (Photo 8a). The contrast and landscape features of the foreground, middle ground, and background create Class A views of the lake from this location. Turning to the north (Photo 8b), the Class A views continue. Views from the boat ramp looking west toward the former Lakeview Marina and caretaker's residence (Photo 8c) are somewhat more common (i.e., Class B) for Shasta Lake.

McCloud Arm VAU – KOPs 9 and 10 KOPs 9 and 10 were established to illustrate shoreline views midway along the McCloud Arm. The north/south alignment of the arm results in noticeable changes in vegetation and terrain. Although the southerly parts of the arm tend to support a more shrub-dominated habitat, views begin to become more scenic moving north up the arm as conifers and significant rocky outcrops become more evident. The conspicuous bathtub ring that is visible along the entire perimeter of the lake as water levels draw down is just as evident in this part of the lake as it is elsewhere, and the forested mountains in the uplands in the middle ground and background settings (KOP 9, Photo 9) are relatively common Class B visual resources. However, vivid rock outcrops, such as those around Shasta Caverns (KOP 10, Photo 10), add a level of mystery to the upper part of the McCloud Arm. KOP 10, Photo 10, shows an example of the distinctive Class A visual resources found along the McCloud Arm.

McCloud Arm VAU – KOP 11 The McCloud Arm's trend toward the north/northeast routes it away from the I-5 corridor and into largely undeveloped, publicly managed and privately owned lands. Visually, a majority of the views of the upper reach of the McCloud Arm are limited primarily to boaters on the lake, a few homes scattered throughout the uplands adjacent to Gilman Road, and an assortment of USFS campgrounds and day use areas that extend along the increasingly narrow channel.

Hirz Bay is a boat launch and group camping facility managed by USFS on the McCloud Arm. Although Hirz Bay is approximately 10 miles from I-5, it is a popular destination for campers, boaters, and hikers. The Hirz Bay Trail, a gently sloping walking trail that extends from Hirz Bay to Dekkas Rock, is mentioned in regional travel guides as offering views of the lake and spectacular limestone outcrops (Soares 1992; Trails.com 2007).

Although views of the lake from the campground and surrounding lakeshore are limited by topography and vegetation, the boat ramp, closer to the shoreline, affords a wider expanse of views of the water. Progressive narrowing of the channel is apparent when looking from downstream to upstream (KOP 11, Photos 11a and 11b, respectively). The expansiveness of the views from Hirz Bay, although somewhat typical for the region, could be characterized as Class A bordering on Class B.

McCloud Arm VAU – KOP 12 KOP 12 was established to illustrate views of the Hirz Bay and vicinity shoreline from Shasta Lake. As shown by Photo 12, the view looking west from the lake evokes a sense of wilderness beyond the shoreline and does not hint at the level of development that lies between the middle ground and background (i.e., I-5). Although this view is somewhat typical for the northern part of the McCloud Arm, it could be considered a Class A visual resource because of the sense of intactness it conveys.

McCloud Arm VAU – KOP 13 Campbell Creek, located on the east shore of the McCloud Arm directly across from Hirz Bay, is a residential recreation tract consisting of 28 privately owned cabins on NFS lands. The only practicable access to the area is by boat. Overland access is via a primitive (at best) jeep trail. Therefore, visitors to the area would form their initial impression of the visual resources afforded by the Campbell Creek inlet from the lake. Photo 13a looks toward the south bank of the inlet, where most of the cabins are located beyond the tree line. In many cases, the cabins are difficult to see from the lake because of their colors, which are meant to blend with the natural environment, and the dense forest that surrounds them. Similarly, a few cabins are also located on the eastern shore, but these cabins also have been designed to be unobtrusive to the natural environment (Photo 13b). The expansiveness of the views from the Campbell Creek inlet, although somewhat typical for the region, could be characterized as Class A bordering on Class B.

McCloud Arm VAU – KOP 14 Similar to views of the lake from Hirz Bay, Class B views from Dekkas Rock Campground widen downstream and narrow upstream (KOP 14, Photos 14a and 14b, respectively). Unlike the Hirz Bay camping facilities, which are located some distance from the actual shoreline, the Dekkas Rock Campground offers sites overlooking the lake and near the ordinary high-water line. KOP 14 was established to illustrate views of the progressively narrowing channel from Dekkas Rock Campground (Photos 14a and 14b, respectively). Similar to views from Hirz Bay (KOP 11), views from KOP 14 could also be characterized as Class A bordering on Class B.

McCloud Arm VAU – KOP 15 The McCloud River Bridge is located at the extreme north end of the McCloud Arm approximately 19 miles east of I-5. Despite its relative remoteness, the bridge has frequent traffic, primarily created by recreationists fishing the river, staying in the nearby campground, or exploring the back roads. KOP 15 shows that unobstructed views of the McCloud Arm are available both upstream and downstream from the bridge (Photos 15a and 15b, respectively). Although topography eventually interrupts these Class A views, a relatively long stretch of the entire channel width is visible from either direction.

McCloud Arm VAU – KOP 16 Views of the McCloud River Bridge from the west approach are partially obscured by seasonal roadside vegetation, and the alignment of the eastern approach (KOP 16, Photo 16) prevents any views of the reservoir or the bridge until the road turns onto the bridge. Thus, the

indistinctive or low scenic quality of the view from this KOP is characteristic of a Class C designation.

McCloud Arm VAU – KOPs 17 and 18 Immediately south of the McCloud River Bridge on the east side of the McCloud Arm is the USFS McCloud River Campground. Scenic views from the campground are, in general, remarkable as a result of the surrounding topography and landscape features, such as the bridge, mountains, and the upper end of the McCloud Arm. KOP 17, which is located in Campsite 10, is typical of the Class A views available from campsites in the campground. As demonstrated by KOP 18 (Photos 18a–18c), views from areas around the campsites broaden as the viewer moves closer to the river channel.

Pit Arm VAU

Pit Arm VAU – KOPs 1, 2, 3, and 4 KOPs 1–4 were established to illustrate the gentle shoreline topography of the Pit Arm in the vicinity of Jones Valley, upstream from Silverthorn Resort. Beyond the Jones Valley inlet, there is only one developed campsite accessible by boat. The increasing narrowness of the arm and the potential hazard to boats posed by the remnants of standing dead trees (snags) below the lake's ordinary high-water line make the Jones Valley area a popular destination for people who want to fish or who seek a quieter, more secluded recreational experience than activities such as waterskiing offer.

Expansive views of the lake and surrounding mountains (as viewed from KOP 1, Photos 1a and 1b; KOP 2, Photo 2; KOP 3, Photo 3; and KOP 4, Photo 4) are somewhat typical and common to the area and thus would be characterized as having a Class B scenic quality. Although it is not apparent because of weather conditions at the time the photo was taken (October 26, 2007) (Photo 1b), on a clear day Mount Shasta is visible in the background. This factor would enhance the quality of the view from the Jones Valley Public Boat Ramp parking lot looking north, making it a Class A scenic designation.

Pit Arm VAU – KOP 5 KOP 5 illustrates a typical view from the houses and cabins in the residential development adjacent to the Silverthorn Resort. The dominance of vegetation in the foreground of Photo 5 is indicative of the nature of views from area homes and cabins. The neighborhood is built on a densely vegetated and steep peninsula with residences on the north side of the ridge facing the Silverthorn Marina and Resort; however, topography and dense vegetation obscure most views of the marina and resort facilities (Photo 5). Views from KOP 5 are typical Class B. Houses and cabins on the south side of the ridge face toward undeveloped areas around Jones Valley.

Pit Arm VAU – KOP 6 KOP 6, Photos 6a–6c, show views of the lake from the Silverthorn Resort boat ramp. Silverthorn Resort is a full-service commercial development offering cabin rentals, restaurants, houseboat rentals, a boat ramp, and a marina. Photo 6a illustrates the Class B view of the Silverthorn

Marina as seen from KOP 6. Landscape features in this photo and in Photos 6b and 6c, taken from the same KOP (but from a different aspect), are generally typical for the area—that is, positive yet common.

Pit Arm VAU – KOP 7 As seen from Shasta Lake, it is difficult to determine the level of development associated with the Silverthorn Resort and marina (KOP 7, Photo 7). A peninsula obscures most of the marina and boat ramp from view, as is apparent from KOP 7. Silverthorn Resort is an example of a built feature that may not be considered particularly attractive by viewers. The surrounding environment (i.e., vegetation, topography) is fairly typical for this part of the Pit Arm and would be considered a Class B, and possibly even a Class C, visual resource.

Pit Arm VAU – KOP 8 Ski Island is one of the most popular destinations in the Pit Arm. Close to Silverthorn Resort, Ski Island offers primitive campsites and easy access. KOP 8, Photo 8, was established to illustrate the view that boaters have as they approach the island from the west. The presence of mature conifers adds to the scenic attractiveness of Ski Island, making it a Class B visual resource.

Squaw Creek Arm VAU

Squaw Creek Arm VAU – KOPs 1 and 2 The Bully Hill (KOP 1, Photo 1) and Monday Flat (KOP 2, Photo 2) areas in the Squaw Creek Arm of Shasta Lake are among the flatter, more easily accessible areas of the lake for boaters looking for a place to land. The bathtub-ring effect is exacerbated by the relatively flatter topography of the area. As water levels drop, a greater expanse of unvegetated shoreline is exposed than appears in many other parts of the lake, and the distance to vegetated uplands is greater than in steeper areas. Although the middle ground and background of the views in this part of the lake include a variety of patterns (water, exposed bright soils, vertical vegetation), the view is typical for the Squaw Creek Arm, making it a Class B visual resource.

I-5 Corridor VAU The Pit River Bridge (also known as the Veterans of Foreign Wars Memorial Bridge) is a nearly 3,600-foot-long bi-level structure that conveys I-5 traffic over the Pit Arm of Shasta Lake, northeast of the Bridge Bay Resort. Vehicle traffic passes across the top level of the structure, and a UPRR track is located on the lower level. Views from the bridge are restricted to motorists or those traveling via train; pedestrians are not authorized to use the bridge for safety reasons.

I-5 Corridor VAU – KOP 1 Class A views experienced by motorists from the Pit River Bridge are of relatively long duration from either direction (up to a minute at normal highway speeds of 55 mph). From the I-5 northbound lanes, the lower ends of both the Pit and McCloud arms east of the bridge are clearly visible in the foreground to middle ground, with mountains in the background (KOP 1, Photo 1a). Views from the southbound lanes look west of the bridge

toward the Sacramento Arm. Some features of Bridge Bay Marina can be seen from I-5 southbound (Photo 1b). The elevation of the Pit River Bridge above the existing surface elevation of the lake (full pool and lower) makes it difficult for parts of the lake that are visible from the northbound lanes to be seen from the southbound lanes, and vice versa. Views from either lane may also be partially obstructed by the bridge railing (depending on the height of the vehicle).

I-5 Corridor VAU – KOP 2 KOP 2 was established near one of the most heavily used and visible areas on Shasta Lake: the confluence of the McCloud and Pit arms, on the east side of the I-5 Pit River Bridge. Boaters accessing the various arms of the lake east of Bridge Bay pass through this area. The panoramic view of the lake, bridge, and surrounding mountains is distinctive and unique to the area. The balance and harmony of the patterns (i.e., water in the foreground leads the viewer's eye to the bridge in the middle ground, and from there to the mountains in the background) make this a Class A visual resource.

I-5 Corridor VAU – KOPs 3 and 4 Although not as readily visible, and of far less extent and shorter in duration than those seen from I-5 over the Pit River Bridge, additional views of Shasta Lake (specifically the Sacramento Arm) are available to motorists traveling on I-5 over the Antlers Bridge, located in the community of Lakehead at the north end of the lake. The lake is constricted by topography and is considerably narrower at this point (KOP 3, Photo 3a). Consequently, Class B views from I-5 are of fairly short duration (approximately 15 seconds assuming a speed of 65 mph). Northbound motorists will notice the Antlers Public Boat Ramp, which extends from the north shore downslope into the lake (KOP 3, Photo 3b). Southbound motorists have a limited view of the portion of the lake located on the west side of the bridge (KOP 4, Photo 4). Steep topography to the south of the Antlers Bridge makes it difficult to see much more than a small, open body of water and the adjacent forested shoreline.

I-5 Corridor VAU – KOP 5 Located near the confluence of the McCloud and Pit arms, Turntable Bay currently houses administrative facilities, including USFS boat docks. As demonstrated by KOP 5, Photo 5, transitory views of Turntable Bay and vicinity can be seen from I-5 by northbound motorists. The panoramic extent of the views, although of short duration as vehicles typically pass through this part of I-5 at high speeds, is typical for the Shasta Lake area but nonetheless impressive. As seen from KOP 5, the view would be a Class B or, subjectively, a Class A visual resource.

Visual Quality Objectives The Shasta and Trinity units of the NRA include lands classified as modification, partial retention, and retention. Areas designated as "modification" in the LRMP are typically developed areas, such as campgrounds, marinas, and boat launch ramps; management activities in the foreground and middle ground in these areas have a natural appearance. "Partial retention" refers to those areas in which management activities remain visually

subordinate on the landscape. “Retention” areas are those where management activities are not visually evident. The acres of lands categorized under each of these classifications are provided in Table 19-1.

The LRMP also includes a series of management prescriptions for various land allocations. The primary prescription for lands adjacent to Shasta Lake in the NRA is “Roaded Recreation.” The objective of this prescription is to provide for an area where there are moderate evidences of the sights and sounds of humans. Modifications are evident and may appear moderate to observers in the area, but will be unnoticed or visually subordinate from sensitive travel routes. This prescription emphasizes recreational opportunities associated with developed road systems and dispersed and developed camp sites (USFS 1995a).

Scenic Highways Many State highways are located in areas of outstanding natural beauty. California’s Scenic Highway Program was created by the Legislature in 1963 to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to highways. The State laws governing the Scenic Highway Program are found in the Streets and Highways Code Section 260 et seq. A highway may be designated as “scenic,” depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes on the traveler’s enjoyment of the view. The State Scenic Highway System consists of a list of highways that are either eligible for designation as scenic highways or have been so designated. Shasta County scenic highways are listed in the California Department of Transportation’s list of eligible and officially designated California Scenic Highways (Caltrans 1992).

In Shasta County, and more specifically in the primary study area, I-5 north of the City of Shasta Lake is recognized as a corridor in which the natural environment is dominant. In the primary study area, both I-5 and SR 151 are designated as State routes eligible for official scenic highway designation, although they contain contrasting elements of the natural and built environment (Shasta County 1994). I-5 between Redding (at the SR 299 East intersection) and Anderson is also designated as a corridor in which natural and human-made environments contrast; however, this section of roadway is not eligible for scenic highway designation (Shasta County 1994).

Wild and Scenic River Segments of the McCloud River have been determined eligible for listing under the Federal Wild and Scenic Rivers Act and are protected under the State Public Resources Code. The river has not been formally listed as wild and scenic under either the Federal Wild and Scenic Rivers Act or State Public Resources Code. Public views from area roads of the segments potentially eligible for listing are limited to the relatively short reach that can be seen looking upstream from the McCloud River Bridge on Fender’s Ferry Road. Flows in the lower McCloud River are highly regulated, and annual flows in the river below McCloud Dam do not follow a pattern typical of an

unimpaired mountain river in northern California. The effects of the dam and reservoir modifications proposed under the SLWRI on the wild and scenic river values of the lower McCloud River are discussed in Chapter 25, "Wild and Scenic River Considerations for McCloud River," of this EIS.

Lower Sacramento River and Delta and CVP/SWP Service Areas

The extended study area offers a wide and diverse array of landscapes and features that constitute visual resources. None of these landscapes and features would be affected by activities associated with the project.

19.2 Regulatory Framework

19.2.1 Federal

Aesthetic values and scenic resources in the NRA are managed for the conservation of scenic values that contribute to public enjoyment of the NRA. The USFS Manual (Sections 2380.11 through 2380.19) addresses the management of landscape aesthetics and scenery in the NFS, as well as the NRA (36 Code of Federal Regulations, part 292, subpart B). Included in this directive are standards for the protection of the natural scenic qualities of public travel routes and shoreline protections.

Aesthetic values and visual resources are also generally addressed in the environmental review of Federal projects through NEPA. Some Federal agencies, such as USFS, provide guidelines for the management of visual resources in larger management areas. In response to increasing environmental concerns, USFS developed the Visual Management System to inventory, classify, analyze, and manage its visual resources. The primary objective of the system is to maintain and enhance the natural appearance of the characteristic landscape while actively managing various resources such as timber, grazing, wildlife, and recreation. The Visual Management System measures and evaluates two main elements: the natural and built features of the land and the public's concern for scenic quality. It is important to note that the STNF LRMP will need to be amended to include VQOs specific to Turntable Bay, should an action be implemented that includes development at Turntable Bay. Amendments to the LRMP may also be required for other areas that may be inconsistent with these VQOs if the project is authorized. At this point in the planning process, it is premature to identify these areas specifically.

The following describes the regulatory setting for lands managed by USFS.

Shasta-Trinity National Forest Land and Resource Management Plan

The STNF LRMP contains goals, standards, and guidelines designed to guide the management of the STNF. The following goals, standards, and guidelines related to aesthetic issues associated with the primary study area were excerpted from the LRMP (USFS 1995a).

Visual Quality
Goals (LRMP, p. 4-5):

- Develop or expand opportunities for scenic drives and vista points.

- Maintain a diversity of scenic quality throughout the forest, particularly along major travel corridors, in popular dispersed recreation areas, and in highly developed areas.

Standards and Guidelines (LRMP, pp. 4-27 through 4-28):

- Manage activities and projects to meet adopted VQOs of (1) preservation, (2) retention, (3) partial retention, (4) modification, or (5) maximum modification. On rare occasions, the adopted VQO may not meet management's objectives (e.g., as a result of catastrophic events). Any proposed modification to an adopted VQO must go through the NEPA process and be approved by the Forest Supervisor.

  - Visual Quality Objectives for management activity affecting the shoreline of Lake Shasta are to meet the Retention VQO. Within shoreline areas managed for developed recreation sites, the VQO of Modification is to be met.

- In the following sensitive travel corridors, the foreground portions (areas located up to ¼ to ½ mile from the road viewer) will be managed primarily to meet the adopted VQO of Retention:

  - I-5

- In the following sensitive travel corridors, the middle ground portions (areas between 0.5 miles and 4 miles from the road viewer) will be managed primarily to meet the adopted VQO of Partial Retention:

  - I-5

- In the following sensitive travel corridors, the foreground portions (areas located from ¼ to ½ mile from the road viewer) will be managed primarily to meet the adopted VQO of Partial Retention:

  - Gilman Road (35N60/County 7HOI from I-5 East to McCloud River Bridge)

Management Guide for the Shasta and Trinity Units of the Whiskeytown-Shasta-Trinity National Recreation Area The management guide for the Whiskeytown-Shasta-Trinity NRA (USFS 2014) contains management guidance intended to achieve or maintain a desired condition. This guidance takes into account opportunities, management recommendations for specific projects, and mitigation measures needed to achieve specific goals. The

following guidance related to visual resources and aesthetics issues associated with the primary study area were excerpted from the management guide.

> All developments and long-term activities in the NRA will be designed with the intent of protecting scenic values. Currently, the Forest uses the Visual Management System to protect scenery and the Forest Plan adopted visual management objectives (VQO's)... [*New developments within the Shasta Unit of the NRA] will utilize concepts from the Built Environment Image Guide for the National Forests and Grasslands ([US]FS 2001). The term built environment, as used in this guide, refers to structures and signs installed or operated by the Forest Service, its cooperators and permittees. The built environment influences visitors' experience as much as the natural environments in the forests. The Built Environment Image Guide… advocates structures that will resonate in form, shape, scale, color, and materials with the natural environment.*

U.S. Bureau of Land Management Resource Management Plan BLM manages a number of parcels of public lands adjacent to the Sacramento River corridor downstream from Shasta Dam. BLM lands in the primary study area are managed by the Redding Field Office. BLM lands within the extended study area are managed by either the Ukiah or Mother Lode field office. The purpose of BLM's resource management plan is to provide overall direction for managing and allocating public resources in each planning area. All BLM management actions must conform to the objectives of the assigned Visual Resource Management (VRM) Class. Actions approved or authorized by BLM will meet these long-term objectives. VRM prescriptions, however, will be limited to only those areas assigned Class I or Class II. Prescriptions will not be assigned to areas where lower VRM classes have been determined. BLM is responsible for administering the following strategies related to visual resource issues common to the districts in the study area (BLM 1992, 2006b, 2008).

Goals

- Protect and enhance the scenic quality and visual integrity of the characteristic landscapes in the planning area.

- Manage public lands in a manner that would protect the quality of the visual resources while allowing management activities to occur.

Objectives (Sierra BLM Resource Management Plan, p. 21)

- Design surface-disturbing projects to meet VRM objectives. Mitigate or prohibit surface-disturbing actions that do not meet VRM objectives.

- Complete visual contrast ratings for new projects to ensure compliance with VRM objectives.

- Complete visual contrast ratings for existing roads and facilities, and identify opportunities to reduce visual impacts through modification or rehabilitation.

- Complete inventory of existing and potential key scenic vista points along road and trail corridors.

- Ensure developments do not detract from scenic integrity by working with counties, agencies, and other entities with management jurisdiction.

19.2.2 State

In 1963, the California Legislature created the Scenic Highway Program to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to the highways. The State regulations and guidelines governing the Scenic Highway Program are found in the Streets and Highways Code, Section 260 et seq. A highway may be designated as scenic depending on how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes on the travelers' enjoyment of the view.

Currently, only a short section of I-5 extending from its intersection with SR 97 in the city of Weed to its intersection with SR 89 near the city of Mount Shasta is a designated scenic highway (a part of the Volcanic Legacy Scenic Byway/All American Road). However, there has been interest in obtaining official scenic highway designation for the stretch of I-5 north of Shasta Lake to the Oregon border. Continuing efforts may be made to incorporate this segment of I-5 into the State's Master Plan for officially designated highways.

19.2.3 Regional and Local

The Scenic Highways Element of the *Shasta County General Plan* (Shasta County 1994) is intended to establish and protect highways (including both State and county roads) with scenic value. A "scenic highway" is any freeway, highway, road, street, boulevard, or other vehicular right-of-way that traverses an area of unusual scenic quality. An "official scenic highway" is a scenic highway that has been so designated by the State of California. The visible land area outside the actual right-of-way is generally described as the "viewshed" or the "scenic corridor." The corridor encompasses the land easily visible from the highway. Virtually every highway in Shasta County is a scenic highway; however, some scenic highways are more important than others, based on the visual quality of their scenic corridors, the degree to which the highways are used, and the vulnerability of the corridors to degradation of visual quality (Shasta County 1994).

19.3 Environmental Consequences and Mitigation Measures

This section identifies potential environmental effects on aesthetics and visual resources that could result from the project. Examples of proposed activities common to all project action alternatives that could have an impact on visual resources and aesthetic values include changes to inundation levels, raising Shasta Dam, dike construction, creation of borrow areas, abandonment and relocation of infrastructure, and vegetation clearing.

19.3.1 Methods and Assumptions

Analysis of potential impacts on aesthetic and visual resources is based on guidance provided by USFS and the significance criteria described in the State CEQA Guidelines. To comply with CEQA, significance thresholds are used to evaluate the project's potential impacts on the visual character of the study area, particularly the visual character of areas observable from KOPs. All assessments are qualitative, evaluating potential impacts of the project on the viewshed in relation to the local aesthetic context.

The fact that USFS manages a high proportion of the Federal lands above the current full pool elevation of Shasta Lake supports use of the USFS Visual Management System for this assessment. Under the USFS Visual Management System, the landscape is composed of a diversified variety of landforms, rock forms, and vegetative colors and textures. The widely diversified and unique landscape, and the setting of the study area within the NRA – designated as such in part because of its scenic quality of national importance – makes the overall scenic attractiveness a variety Class "A." (See the description of the classes of scenic attractiveness at the end of the bulleted list below.) To provide some continuity with other Reclamation visual resources assessments, certain aspects of the USFS Scenery Management System are also used in this analysis, as appropriate, namely the concepts of scenic attractiveness and primary distance zones.

A field assessment of the primary study area was conducted to identify areas of visual sensitivity and scenic resources, and to assess the character and quality of the aesthetic resources associated with the primary study area. Because no changes are anticipated to the aesthetic values and visual resources in the extended study area, a field assessment was performed only in the primary study area. This assessment emphasizes the potential relationship between the project and sensitive receptors associated with recreation areas, roadways, and commercial and residential development. VAUs were mapped based on the distinct visual character of the landscape. KOPs were identified in each VAU and photograph points were established. Despite the NRA's Class A overall scenic attractiveness, the assessment of visual quality presented in this EIS is based on the quality of the scenic resources and the visual sensitivity of the most likely viewer group at a particular KOP. Assessment methods were applied to the project alternatives using the following steps:

- **Identify visually sensitive areas** – Areas rated highest for sensitivity are those having views seen by people driving to or from recreational activities or along routes designated as scenic corridors. Stationary views from relatively moderate- to high-use recreation areas and commercial/residential areas are also considered to be sensitive.

- **Define the landscape character** – Landscape character refers to the visual and cultural image of a geographic area. It is composed of the combination of physical, biological, and cultural attributes that make each landscape identifiable or unique. Landscape character embodies distinct landscape attributes that exist throughout an area.

- **Identify visually sensitive observation points** – Analysis of the impacts on visual resources from the implementation of any project alternative should consider both construction and postconstruction views. This step identifies visually sensitive observation points in the primary study area. Identification of visually sensitive observation points allows a comparison of existing views and areas of potential visual impact resulting from one or more alternative.

- **Identify visually affected key observation points** – Based on the location and distance of potential visual impact areas from the visually sensitive observation points, only a portion of the observation points may be significantly affected. This analysis further evaluates observation points to determine whether visual impact areas would occur (1) in the direct line of sight (2) in the foreground (0 to 0.5 mile) and/or middle ground (0.5 to 4 miles) and/or (3) background (4 miles to horizon) views. Observation points with visual impact areas in the direct line of sight or in the foreground, middle ground, or background view are referred to as KOPs, which are described in Section 19.1, "Affected Environment."

- **Classify scenic attractiveness** – Scenic attractiveness classifications are used to categorize visual features as follows: Class A, "distinctive"; Class B, "typical"; and Class C, "indistinctive." These classifications are described in Section 19.1, "Affected Environment."

19.3.2 Criteria for Determining Significance of Effects

An environmental document prepared to comply with NEPA must consider the context and intensity of the environmental effects that would be caused by, or result from, the proposed action. Under NEPA, the significance of an effect is used solely to determine whether an EIS must be prepared. An environmental document prepared to comply with CEQA must identify the potentially significant environmental effects of a project. A "[s]ignificant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions in the area affected by the project (State CEQA Guidelines Section 15382). CEQA also requires that the environmental

document propose feasible measures to avoid or substantially reduce significant environmental effects (State CEQA Guidelines Section 15126.4(a)).

The criteria used to determine the significance of impacts for this analysis are based primarily on the State CEQA Guidelines and other associated criteria, including regulatory agency standards. Federal criteria and NEPA guidance were also considered. The following significance criteria were developed based on guidance established in the State CEQA Guidelines, and consider the context and intensity of the environmental effects as required under NEPA. Impacts of an alternative on aesthetics and visual resources would be significant if project implementation would do any of the following:

- Would not comply with VQOs as defined in the STNF LRMP
- Have a substantial adverse effect on a scenic vista
- Substantially damage scenic resources, including trees, rock outcroppings, and historic buildings adjacent to a State scenic highway
- Substantially degrade the existing visual character or quality of the project site and its surroundings
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the project area

19.3.3 Topics Eliminated from Further Consideration

No significant topics related to aesthetics and visual resources have been eliminated from discussion.

19.3.4 Direct and Indirect Effects

The McCloud River upstream from the McCloud River Bridge is eligible for listing as a Wild and Scenic River under the Federal Wild and Scenic Rivers Act. In lieu of recommending Wild and Scenic designation, USFS and other stakeholders entered into a *Coordinated Resource Management Plan* with the primary objective of managing the river to protect its pristine resources. The California Public Resources Code Section 5093.542, established through enactment of the Wild and Scenic Rivers Act, as amended (Sections 5093.50 through 5093.70), provides protection to the reach between the McCloud Reservoir and the McCloud River Bridge. A detailed discussion of the importance of the Federal Wild and Scenic Rivers Act and California Public Resources Code protections for the McCloud River north of the McCloud River Bridge is presented in Chapter 25, “Wild and Scenic River Considerations for McCloud River.”

No-Action Alternative

Shasta Lake and Vicinity and Upper Sacramento River (Shasta Dam to Red Bluff)

Impact Vis-1 (No-Action): Consistency with Guidelines for Visual Resources in the STNF LRMP Under the No-Action Alternative, there would be no inconsistencies with the guidelines for visual resources provided in the STNF LRMP because the project would not be constructed. The visual setting would remain the same as under existing conditions. No impact would occur. Mitigation is not required for the No-Action Alternative.

Impact Vis-2 (No-Action): Degradation and/or Obstruction of a Scenic View from Key Observation Points Under the No-Action Alternative, scenic views would not be degraded and/or obstructed because the project would not be constructed. The visual setting would remain the same as under existing conditions. No impact would occur. Mitigation is not required for the No-Action Alternative.

Impact Vis-3 (No-Action): Generation of Increased Daytime Glare and/or Nighttime Lighting Under the No-Action Alternative, daytime and/or nighttime glare from temporary construction and permanently relocated roads, structures and other facilities would not increase because the project would not be constructed. The visual setting would remain the same as under existing conditions. No impact would occur. Mitigation is not required for the No-Action Alternative.

Impact Vis-4 (No-Action): Consistency with Federal and State Scenic Highway Requirements Under the No-Action Alternative, there would be no inconsistencies with Federal and State Scenic Byway requirements because the project would not be constructed. The visual setting would remain the same as under existing conditions. No impact would occur. Mitigation is not required for the No-Action Alternative.

Lower Sacramento River and Delta, and CVP/SWP Service Areas None of the landscapes and features in the extended study area would be affected by the No-Action Alternative. No impact would occur. Mitigation for this impact is not needed, and thus not proposed.

CP1 – 6.5-Foot Dam Raise, Anadromous Fish Survival and Water Supply Reliability

Shasta Lake and Vicinity and Upper Sacramento River (Shasta Dam to Red Bluff)

Impact Vis-1 (CP1): Consistency with Guidelines for Visual Resources in the STNF LRMP The effects of the construction-related and operational elements of CP1 would be inconsistent with some of the VQOs established by the STNF LRMP. The LRMP calls for management activities that would be visible from the I-5 corridor and SR 151 to remain visually subordinate on the landscape and not be noticeable to the casual observer (a VQO of “retention”). Foreground

views from KOPs most often used by the public, such as campgrounds and boat launches, are also managed according to the VQO of retention, whereas middle ground views are managed according to the "partial retention" VQO (management activities in the middle ground having a natural appearance). The construction-related and operational elements of CP1 would be more visible from some viewpoints than others. The operation of construction equipment and its presence on the landscape would be a visual distraction when visible from KOPs. In addition, what might be considered short-term impacts on visual resources and aesthetics for some viewer groups, such as tourists, might be considered long-term impacts for other viewer groups, such as residents. The LRMP does not distinguish between short-term and long-term VQOs or between classes of viewers, although for the purposes of this assessment, viewer groups were considered in the evaluation of impacts. This impact would be significant.

USFS VQOs for the Shasta and Trinity units of the NRA allow for some active land management. The LRMP calls for a VQO of retention along the Shasta Lake shoreline and modification in developed recreation sites. Vegetation removal along the shoreline and in some developed recreation sites under CP1 would exceed the definitions of retention and modification, better fitting the VQO of "maximum modification" (management activities are dominant, but appear natural when seen as background). Although affected areas could, over time, regain the attributes of the retention or modification VQOs, noticeable changes to aesthetic values and visual resources along the shoreline and in affected developed recreation sites resulting from CP1 would be apparent during and for an undetermined period after construction.

The LRMP calls for the foregrounds and middle grounds of State- and county-designated scenic highways that pass through the Shasta and Trinity units of the NRA, including portions of the I-5 corridor and SR 151, to be managed for the retention VQO. However, the effects of CP1 (i.e., clearing of vegetation at specific locations) on aesthetic values and visual resources as seen from the highways would be visible in some areas during and after project construction. The appearance of areas that are visible from these highways could become similar to existing conditions when the project is completed.

In some areas, implementation of CP1 would result in impacts on visual resources that are inconsistent with LRMP VQOs. This impact would be significant. Mitigation for this impact is proposed in Section 19.3.5, "Mitigation Measures."

Impact Vis-2 (CP1): Degradation and/or Obstruction of a Scenic View from Key Observation Points Under CP1, the "bathtub ring" that is apparent during less than full pool conditions would become larger. Existing scenic views of areas where utilities and infrastructure would be relocated could be obstructed or degraded. Views from some KOPs, including those of the renowned "Three Shastas," would be obstructed or degraded during construction, and to varying

degrees, for several years post-construction. Throughout the primary study area, vegetation retention or removal activities (proposed activities would vary by relocation area) would also degrade scenic views. Although project-related changes to the landscape could become less visible over time, these changes would be highly visible during construction. This impact would be significant.

Under CP1, changes to the scenic views of Shasta Lake and the surrounding landscape would be most apparent when the lake is not full. From KOPs with panoramic views of Shasta Lake, the appearance of the expanded bathtub ring would be only minimally changed, given the overall size of the affected area. As the pool fluctuates, changes to the bathtub ring may not be apparent to transitory viewers. For some groups such as residents, however, changes to the size of the bathtub ring would be more apparent and of longer duration. For all viewer groups, leaving vegetation in place below the inundation level or removing vegetation from the shoreline would be visible in all VAUs.

Scenic views of areas where utilities and infrastructure would be relocated would be at least temporarily degraded or obstructed during and after construction. Changes to these views could be highly visible from some KOPs.

Construction activities and materials associated with CP1 could also be highly visible. In particular, views from KOPs in the Shasta Dam VAU (e.g., the SR 151 scenic overlook, the Shasta Dam Visitor Center, the Coram Ranch House, and the lake) would be highly affected by construction activities and materials, including the movement of heavy equipment and the construction of scaffolding and framing. The use of materials not consistent with the color, texture, and form of the surrounding landscape or that could generate glare would have a permanent impact on views from KOPs.

Implementation of CP1 would temporarily, and could permanently, degrade and obstruct scenic views from KOPs. This impact would be significant. Mitigation for this impact is proposed in Section 19.3.5, “Mitigation Measures.”

Impact Vis-3 (CP1): Generation of Increased Daytime Glare and/or Nighttime Lighting The increased area of light-colored soils around the Shasta Lake shoreline that are exposed during periods of drawdown and, conversely, the increased area of water surface associated with CP1 would increase the potential for daytime glare. The relocation of roads and infrastructure could also create new sources of reflective daytime glare. In addition, construction equipment could be a temporary source of reflective daytime glare. Extensive construction activities at night requiring the use of vehicle and perimeter lighting, particularly in the vicinity of Shasta Dam, would be necessary for several years. New sources of permanent nighttime lighting would also be required for some locations, such as relocated roads and recreational facilities. This impact would be significant.

CP1 would increase the area of bare mineral soil exposed along the Shasta Lake shoreline during periods of drawdown. The light color of these soils is a significant source of unavoidable daytime glare. Water also serves as a source of substantial glare. The increased water surface area created by a 6.5-foot dam raise would increase the potential for unavoidable daytime glare being encountered by sensitive receptors around the lake. Changes in water surface elevations, particularly water level increases, would change the refractive angle of the water surface, thus potentially exposing sensitive receptors, such as campgrounds or residences, to a new source of significant glare. The intensity and duration of daytime glare would vary with changes in the angle of the sun and the elevation of the water surface.

Relocation of roads and infrastructure could create a source of both daytime and nighttime glare from temporary construction and permanently relocated roads, structures, and other facilities. Guardrails and other roadway fixtures, such as retaining walls, safety barriers, light standards, and other structures, have the potential to be reflective under natural and artificial light. In addition, nighttime lighting may be required at some locations, including roadways and recreation facilities, for safety purposes.

Construction activities associated with CP1 would generate daytime glare at various locations in the primary study area, most noticeably in areas where equipment would be operated, such as Shasta Dam. The potential for glare caused by light reflecting off construction equipment would vary with changes in the angle of the sun. This impact would be significant. Mitigation for this impact is proposed in Section 19.3.5, “Mitigation Measures.”

Impact Vis-4 (CP1): Consistency with Federal and State Scenic Highway Requirements The distance to proposed construction/relocation areas around Shasta Lake from SR 151, the only State-designated Scenic Highway in the primary study area, would make changes resulting from CP1 very difficult to differentiate. There are no federally designated scenic roadways in the area. This impact would be less than significant.

SR 151 is the only State-designated Scenic Highway in the primary study area. There are no federally designated scenic roadways in the primary study area. Under CP1, project construction activities around Shasta Dam would be visible from SR 151. The distance between the SR 151 vista point, high on the mountainside overlooking Shasta Dam, and the other proposed construction/relocation areas around the lake would make it very difficult for most viewers to differentiate changes resulting from CP1. This impact would be less than significant. Mitigation for this impact is not needed, and thus not proposed.

Lower Sacramento River and Delta and CVP/SWP Service Areas None of the landscapes and features in the extended study area would be affected by

activities associated with CP1. No impact would occur. Mitigation for this impact is not needed, and thus not proposed.

CP2 – 12.5-Foot Dam Raise, Anadromous Fish Survival and Water Supply Reliability

Shasta Lake and Vicinity and Upper Sacramento River (Shasta Dam to Red Bluff)

Impact Vis-1 (CP2): Consistency with Guidelines for Visual Resources in the STNF LRMP The effects of the construction-related and operational elements of CP2 would be inconsistent with some of the VQOs established by the STNF LRMP. The LRMP calls for management activities that would be visible from the I-5 corridor and SR 151 to remain visually subordinate on the landscape and not be noticeable to the casual observer (a VQO of "retention"). Foreground views from KOPs most often used by the public, such as campgrounds and boat launches, are also managed according to the VQO of retention, whereas middle ground views are managed according to the "partial retention" VQO (management activities in the middle ground having a natural appearance). The construction-related and operational elements of CP2 would be more visible from some viewpoints than others. The operation of construction equipment and its presence on the landscape would be a visual distraction when visible from KOPs. In addition, what might be considered short-term impacts on visual resources and aesthetics for some viewer groups, such as tourists, might be considered long-term impacts for other viewer groups, such as residents. The LRMP does not distinguish between short-term and long-term VQOs or between classes of viewers, although for the purposes of this assessment, viewer groups were considered in the evaluation of impacts. This impact would be significant.

This impact would be similar to Impact Vis-1 (CP1). Construction-related and operational elements of CP2 would be inconsistent with some of the VQOs established by the STNF LRMP. The larger inundation area proposed under CP2 would result in an increased opportunity for management activities to be visible from the I-5 corridor, SR 151, and other areas managed according to retention and modification VQOs. This impact would be significant. Mitigation for this impact is proposed in Section 19.3.5, "Mitigation Measures."

Impact Vis-2 (CP2): Degradation and/or Obstruction of a Scenic View from Key Observation Points Under CP2, the "bathtub ring" that is apparent during less than full pool conditions would become larger. Existing scenic views of areas where utilities and infrastructure would be relocated could be obstructed or degraded. Views from some KOPs, including those of the renowned "Three Shastas," would be obstructed or degraded during construction and for several years post-construction. Throughout the primary study area, vegetation retention or removal activities (proposed activities would vary by relocation area) would also degrade scenic views. Although project-related changes to the landscape could become less visible over time, these changes would be highly visible during construction. This impact would be significant.

This impact would be similar to Impact Vis-2 (CP1). Under CP2, the "bathtub ring" that is apparent during less than full pool conditions would become larger than what would be exposed under CP1. CP2 would also require the relocation of more utilities and infrastructure and more vegetation retention or removal than CP1. In addition, the time frame for construction and implementation of the project would increase, which would prolong the period that scenic views are degraded by the project. Although project-related changes to the landscape could become less visible over time, these changes would be highly visible during construction. This impact would be significant. Mitigation for this impact is proposed in Section 19.3.5, "Mitigation Measures."

Impact Vis-3 (CP2): Generation of Increased Daytime Glare and/or Nighttime Lighting The increased area of light-colored soils around the Shasta Lake shoreline that are exposed during periods of drawdown and, conversely, the increased area of water surface associated with CP2 would increase the potential for daytime glare. The relocation of roads and infrastructure could also create new sources of reflective daytime glare. In addition, construction equipment could be a temporary source of reflective daytime glare. Extensive construction activities at night requiring the use of vehicle and perimeter lighting, particularly in the vicinity of Shasta Dam, would be necessary for several years. New sources of permanent nighttime lighting would also be required for some locations, such as relocated roads and recreational facilities. This impact would be significant.

This impact would be similar to Impact Vis-3 (CP1). Under CP2, more light-colored soils would be exposed, which would expand the amount of daytime glare. Construction and implementation of the project would take place over a longer period of time, which would prolong the requirement for nighttime lighting during construction and daytime glare from construction equipment. More roads and other infrastructure would be relocated, which would increase the amount of related daytime glare and nighttime lighting. This impact would be significant. Mitigation for this impact is proposed in Section 19.3.5, "Mitigation Measures."

Impact Vis-4 (CP2): Consistency with Federal and State Scenic Highway Requirements The distance to proposed construction/relocation areas around Shasta Lake from SR 151, the only State-designated Scenic Highway in the primary study area, would make changes resulting from CP2 very difficult to differentiate. There are no Federally designated scenic roadways in the area. This impact would be less than significant.

This impact would be similar to Impact Vis-4 (CP1). Although the scale of vegetation removal and other activities associated with the construction at the proposed relocation sites would be larger under CP2 than under CP1, the distance of most construction activities from SR 151 – the only designated scenic highway in the primary study area – would prevent CP2 from being inconsistent with State Scenic Highway requirements. This impact would be

less than significant. Mitigation for this impact is not needed, and thus not proposed.

Lower Sacramento River and Delta and CVP/SWP Service Areas None of the landscapes and features in the extended study area would be affected by activities associated with CP2. No impact would occur. Mitigation for this impact is not needed, and thus not proposed.

CP3 – 18.5-Foot Dam Raise, Agricultural Water Supply Reliability and Anadromous Fish Survival

Shasta Lake and Vicinity and Upper Sacramento River (Shasta Dam to Red Bluff)

Impact Vis-1 (CP3): Consistency with Guidelines for Visual Resources in the STNF LRMP The effects of the construction-related and operational elements of CP3 would be inconsistent with some of the VQOs established by the STNF LRMP. The LRMP calls for management activities that would be visible from the I-5 corridor and SR 151 to remain visually subordinate on the landscape and not be noticeable to the casual observer (a VQO of "retention"). Foreground views from KOPs most often used by the public, such as campgrounds and boat launches, are also managed according to the VQO of retention, whereas middle ground views are managed according to the "partial retention" VQO (management activities in the middle ground having a natural appearance). The construction-related and operational elements of CP3 would be more visible from some viewpoints than others. The operation of construction equipment and its presence on the landscape would be a visual distraction when visible from KOPs. In addition, what might be considered short-term impacts on visual resources and aesthetics for some viewer groups, such as tourists, might be considered long-term impacts for other viewer groups, such as residents. The LRMP does not distinguish between short-term and long-term VQOs or between classes of viewers, although for the purposes of this assessment, viewer groups were considered in the evaluation of impacts. This impact would be significant.

This impact would be similar to Impact Vis-1 (CP1). Construction-related and operational elements of CP3 would be inconsistent with some of the VQOs established by the STNF LRMP. The larger inundation area proposed under CP3 would result in an increased opportunity for management activities to be visible from the I-5 corridor, SR 151, and other areas managed according to retention and modification VQOs. This impact would be significant. Mitigation for this impact is proposed in Section 19.3.5, "Mitigation Measures."

Impact Vis-2 (CP3): Degradation and/or Obstruction of a Scenic View from Key Observation Points Under CP3, the "bathtub ring" that is apparent during less than full pool conditions would become larger. Existing scenic views of areas where utilities and infrastructure would be relocated could be obstructed or degraded. Views from some KOPs, including those of the renowned "Three Shastas," would be obstructed or degraded during construction. Throughout the

primary study area, vegetation retention or removal activities (proposed activities would vary by relocation area) would also degrade scenic views. Although project-related changes to the landscape could become less visible over time, these changes would be highly visible during construction. This impact would be significant.

This impact would be similar to Impact Vis-2 (CP1). Under CP3, the "bathtub ring" that is apparent during less than full pool conditions would become larger than what would be exposed under CP1 or CP2. CP3 would also require the relocation of more utilities and infrastructure and more vegetation retention or removal than CP1 or CP2. In addition, the time frame for construction and implementation of the project would increase, which would prolong the period that scenic views are degraded by the project. Although project-related changes to the landscape could become less visible over time, these changes would be highly visible during construction. This impact would be significant. Mitigation for this impact is proposed in Section 19.3.5, "Mitigation Measures."

Impact Vis-3 (CP3): Generation of Increased Daytime Glare and/or Nighttime Lighting The increased area of light-colored soils around the Shasta Lake shoreline that are exposed during periods of drawdown and, conversely, the increased area of water surface associated with CP3 would increase the potential for daytime glare. The relocation of roads and infrastructure could also create new sources of reflective daytime glare. In addition, construction equipment could be a temporary source of reflective daytime glare. Extensive construction activities at night requiring the use of vehicle and perimeter lighting, particularly in the vicinity of Shasta Dam, would be necessary for several years. New sources of permanent nighttime lighting would also be required for some locations, such as relocated roads and recreational facilities. This impact would be significant.

This impact would be similar to Impact Vis-3 (CP1). Under CP3, more light-colored soils would be exposed, which would expand the amount of daytime glare. Construction and implementation of the project would take place over a longer period of time, which would prolong the requirement for nighttime lighting during construction and daytime glare from construction equipment. More roads and other infrastructure would be relocated, which would increase the amount of related daytime glare and nighttime lighting. This impact would be significant. Mitigation for this impact is proposed in Section 19.3.5, "Mitigation Measures."

Impact Vis-4 (CP3): Consistency with Federal and State Scenic Highway Requirements The distance to proposed construction/relocation areas around Shasta Lake from SR 151, the only State-designated Scenic Highway in the primary study area, would make changes resulting from CP3 very difficult to differentiate. There are no Federally designated scenic roadways in the area. This impact would be less than significant.

This impact would be similar to Impact Vis-4 (CP1). Although the scale of vegetation removal and other activities associated with the construction at the proposed relocation sites would be larger under CP3 than under CP1 or CP2, the distance of most construction activities from SR 151 – the only designated scenic highway in the primary study area – would prevent CP3 from being inconsistent with State Scenic Highway requirements. This impact would be less than significant. Mitigation for this impact is not needed, and thus not proposed.

Lower Sacramento River and Delta and CVP/SWP Service Areas None of the landscapes and features in the extended study area would be affected by activities associated with CP3. No impact would occur. Mitigation for this impact is not needed, and thus not proposed.

CP4 and CP4A – 18.5-Foot Dam Raise, Anadromous Fish Survival and Water Supply Reliability

Shasta Lake and Vicinity and Upper Sacramento River (Shasta Dam to Red Bluff)

Impact Vis-1 (CP4 and CP4A): Consistency with Guidelines for Visual Resources in the STNF LRMP The effects of the construction-related and operational elements of CP4 or CP4A would be inconsistent with some of the VQOs established by the STNF LRMP. The LRMP calls for management activities that would be visible from the I-5 corridor and SR 151 to remain visually subordinate on the landscape and not be noticeable to the casual observer (a VQO of "retention"). Foreground views from KOPs most often used by the public, such as campgrounds and boat launches, are also managed according to the VQO of retention, whereas middle ground views are managed according to the "partial retention" VQO (management activities in the middle ground having a natural appearance). The construction-related and operational elements of CP4 or CP4A would be more visible from some viewpoints than others. The operation of construction equipment and its presence on the landscape would be a visual distraction when visible from KOPs. In addition, what might be considered short-term impacts on visual resources and aesthetics for some viewer groups, such as tourists, might be considered long-term impacts for other viewer groups, such as residents. The LRMP does not distinguish between short-term and long-term VQOs or between classes of viewers, although for the purposes of this assessment, viewer groups were considered in the evaluation of impacts. This impact would be significant for CP4 or CP4A.

This impact would be similar to Impact Vis-1 (CP1) and Vis-1 (CP3). Construction-related and operational elements of CP4 would be inconsistent with some of the VQOs established by the STNF LRMP. This impact would be significant for CP4. Mitigation for this impact is proposed in Section 19.3.5, "Mitigation Measures."

This impact would be similar to Impact Vis-1 (CP1) and Vis-1 (CP3). Construction-related and operational elements of CP4A would be inconsistent with some of the VQOs established by the STNF LRMP. This impact would be significant for CP4A. Mitigation for this impact is proposed in Section 19.3.5, "Mitigation Measures."

Impact Vis-2 (CP4 and CP4A): Degradation and/or Obstruction of a Scenic View from Key Observation Points Under CP4 or CP4A, the "bathtub ring" that is apparent during less than full pool conditions would become larger. Existing scenic views of areas where utilities and infrastructure would be relocated could be obstructed or degraded. Views from some KOPs, including those of the renowned "Three Shastas," would be obstructed or degraded during construction and for several years post-construction. Throughout the primary study area, vegetation retention or removal activities (proposed activities would vary by relocation area) would also degrade scenic views. Although project-related changes to the landscape could become less visible over time, these changes would be highly visible during construction. This impact would be significant for CP4 or CP4A.

This impact would be similar to Impact Vis-2 (CP1) and Impact Vis-2 (CP3) with the addition of measures for increasing habitat for anadromous fish. These measures include the placement of spawning-sized gravel at multiple locations and riparian, floodplain, and side channel habitat restoration activities along the Sacramento River between Keswick Dam and the Red Bluff Pumping Plant. Although the direct placement of gravel into the river channel would initially be noticeable to viewers in the immediate vicinity of such actions, project-related changes to the landscape would become less visible over time as gravels are dispersed by natural means. Similarly, habitat restoration activities would affect the existing views in parts of the river, but these changes would become increasingly less noticeable over time as any removed vegetation becomes reestablished.

This impact would be significant for CP4. Mitigation for this impact is proposed in Section 19.3.5, "Mitigation Measures."

This impact would be significant for CP4A. Mitigation for this impact is proposed in Section 19.3.5, "Mitigation Measures."

Impact Vis-3 (CP4 and CP4A): Generation of Increased Daytime Glare and/or Nighttime Lighting The increased area of light-colored soils around the Shasta Lake shoreline that are exposed during periods of drawdown and, conversely, the increased area of water surface associated with CP4 or CP4A would increase the potential for daytime glare. The relocation of roads and infrastructure could also create new sources of reflective daytime glare. In addition, construction equipment could be a temporary source of reflective daytime glare. Extensive construction activities at night requiring the use of vehicle and perimeter lighting, particularly in the vicinity of Shasta Dam, would

be necessary for several years. New sources of permanent nighttime lighting would also be required for some locations, such as relocated roads and recreational facilities. This impact would be significant for CP4 or CP4A.

This impact would be similar to Impact Vis-3 (CP1) and Impact Vis-3 (CP3) with the exception of the proposed gravel augmentation and upper Sacramento River habitat restoration actions included in CP4 and CP4A. Gravel is typically light colored and reflective; therefore, gravel augmentation would create a temporary source of daytime glare. Over time, as the gravel disperses along the river channel, its potential to be a source of glare would diminish. The habitat restoration activities proposed under CP4 or CP4A could also create a source of temporary daytime glare by the removal of vegetation, exposure of soils, and expansion of water surface. However, the potential for vegetation removal and exposed soils to be a source of daytime glare would be temporary, fading as new vegetation becomes established.

The impact would be significant for CP4. Mitigation for this impact is proposed in Section 19.3.5, "Mitigation Measures."

The impact would be significant for CP4A. Mitigation for this impact is proposed in Section 19.3.5, "Mitigation Measures."

Impact Vis-4 (CP4 or CP4A): Consistency with Federal and State Scenic Highway Requirements The distance to proposed construction/relocation areas around Shasta Lake from SR 151, the only State-designated Scenic Highway in the primary study area, would make changes resulting from CP4 or CP4A very difficult to differentiate. There are no Federally designated scenic roadways in the area. This impact would be less than significant for CP4 or CP4A.

This impact would be similar to Impact Vis-4 (CP1) and Impact Vis-4 (CP3). This impact would be less than significant for CP4. Mitigation for this impact is not needed, and thus not proposed.

This impact would be similar to Impact Vis-4 (CP1) and Impact Vis-4 (CP3). This impact would be less than significant for CP4A. Mitigation for this impact is not needed, and thus not proposed.

Lower Sacramento River and Delta and CVP/SWP Service Areas None of the landscapes and features in the extended study area would be affected by activities associated with CP4 or CP4A. No impact would occur. Mitigation for this impact is not needed, and thus not proposed.

CP5 – 18.5-Foot Dam Raise Combination Plan, Anadromous Fish Survival and Water Supply Reliability

Shasta Lake and Vicinity and Upper Sacramento River (Shasta Dam to Red Bluff)

Impact Vis-1 (CP5): Consistency with Guidelines for Visual Resources in the STNF LRMP The effects of the construction-related and operational elements

of CP5 would be inconsistent with some of the VQOs established by the STNF LRMP. The LRMP calls for management activities that would be visible from the I-5 corridor and SR 151 to remain visually subordinate on the landscape and not be noticeable to the casual observer (a VQO of "retention"). Foreground views from KOPs most often used by the public, such as campgrounds and boat launches, are also managed according to the VQO of retention, whereas middle ground views are managed according to the "partial retention" VQO (management activities in the middle ground having a natural appearance). The construction-related and operational elements of CP5 would be more visible from some viewpoints than others. The operation of construction equipment and its presence on the landscape would be a visual distraction when visible from KOPs. In addition, what might be considered short-term impacts on visual resources and aesthetics for some viewer groups, such as tourists, might be considered long-term impacts for other viewer groups, such as residents. The LRMP does not distinguish between short-term and long-term VQOs or between classes of viewers, although for the purposes of this assessment, viewer groups were considered in the evaluation of impacts. This impact would be significant.

This impact would be similar to Impact Vis-1 (CP1) and Impact Vis-1 (CP3). Construction-related and operational elements of CP5 would be inconsistent with some of the VQOs established by the STNF LRMP. This impact would be significant. Mitigation for this impact is proposed in Section 19.3.5, "Mitigation Measures."

Impact Vis-2 (CP5): Degradation and/or Obstruction of a Scenic View from Key Observation Points Under CP5, the "bathtub ring" that is apparent during less than full pool conditions would become larger. Existing scenic views of areas where utilities and infrastructure would be relocated could be obstructed or degraded. Views from some KOPs, including those of the renowned "Three Shastas," would be obstructed or degraded during construction and for several years post-construction. Throughout the primary study area, vegetation retention or removal activities (proposed activities would vary by relocation area) would also degrade scenic views. Although project-related changes to the landscape could become less visible over time, these changes would be highly visible during construction. This impact would be significant.

This impact would be similar to Impact Vis-2 (CP1) and Impact Vis-2 (CP4 and CP4A). Additional enhancements to relocation areas associated with CP5 could result in a slightly greater level of degradation and/or obstruction of a view from a particular KOP than might occur under CP3, CP4, or CP4A. This impact would be significant. Mitigation for this impact is proposed in Section 19.3.5, "Mitigation Measures."

Impact Vis-3 (CP5): Generation of Increased Daytime Glare and/or Nighttime Lighting The increased area of light-colored soils around the Shasta Lake shoreline that are exposed during periods of drawdown and, conversely, the

increased area of water surface associated with CP5 would increase the potential for daytime glare. The relocation of roads and infrastructure could also create new sources of reflective daytime glare. In addition, construction equipment could be a temporary source of reflective daytime glare. Extensive construction activities at night requiring the use of vehicle and perimeter lighting, particularly in the vicinity of Shasta Dam, would be necessary for several years. New sources of permanent nighttime lighting would also be required for some locations, such as relocated roads and recreational facilities. This impact would be significant.

This impact would be similar to Impact Vis-3 (CP1) and Impact Vis-3 (CP4 or CP4A). Additional enhancements to relocation areas associated with CP5 could result in a slightly greater level of glare than might occur under CP3, CP4, or CP4A. The impact would be significant. Mitigation for this impact is proposed in Section 19.3.5, "Mitigation Measures."

Impact Vis-4 (CP5): Consistency with Federal and State Scenic Highway Requirements The distance to proposed construction/relocation areas around Shasta Lake from SR 151, the only State-designated Scenic Highway in the primary study area, would make changes resulting from CP5 very difficult to differentiate. There are no Federally designated scenic roadways in the area. This impact would be less than significant.

This impact would be similar to Impact Vis-4 (CP1) and Impact Vis-4 (CP3). This impact would be less than significant. Mitigation for this impact is not needed, and thus not proposed.

Lower Sacramento River and Delta and CVP/SWP Service Areas None of the landscapes and features in the extended study area would be affected by activities associated with CP5. No impact would occur. Mitigation for this impact is not needed, and thus not proposed.

19.3.5 Mitigation Measures

Table 19-3 presents a summary of mitigation measures for aesthetics and visual resources.

Table 19-3. Summary of Mitigation Measures for Aesthetics and Visual Resources

Impact		No-Action Alternative	CP1	CP2	CP3	CP4/ CP4A	CP5
Impact Vis-1: Consistency with Guidelines for Visual Resources in the STNF LRMP (Shasta Lake and Vicinity and Upper Sacramento River)	LOS before Mitigation	NI	S	S	S	S	S
	Mitigation Measure	None required.	Mitigation Measure Vis-1: Amend the STNF LRMP to Include Revised VQOs for developments at Turntable Bay area.				
	LOS after Mitigation	NI	SU	SU	SU	SU	SU
Impact Vis-2: Degradation and/or Obstruction of a Scenic View from Key Observation Points (Shasta Lake and Vicinity and Upper Sacramento River)	LOS before Mitigation	NI	S	S	S	S	S
	Mitigation Measure	None required.	Mitigation Measure Vis-2: Minimize Construction-Related Visual Impacts on Scenic Views From Key Observation Points.				
	LOS after Mitigation	NI	SU	SU	SU	SU	SU
Impact Vis-3: Generation of Increased Daytime Glare and/or Nighttime Lighting (Shasta Lake and Vicinity and Upper Sacramento River)	LOS before Mitigation	NI	S	S	S	S	S
	Mitigation Measure	None required.	Mitigation Measure Vis-3: Minimize or Avoid Visual Impacts of Daytime Glare and Nighttime Lighting.				
	LOS after Mitigation	NI	SU	SU	SU	SU	SU
Impact Vis-4: Consistency with Federal and State Scenic Highway Requirements (Shasta Lake and Vicinity and Upper Sacramento River)	LOS before Mitigation	NI	LTS	LTS	LTS	LTS	LTS
	Mitigation Measure	None required.	None needed; thus, none proposed.				
	LOS after Mitigation	NI	LTS	LTS	LTS	LTS	LTS

Key:
CP = Comprehensive Plan
LOS = level of significance
LRMP = Land and Resource Management Plan
LTS = less than significant
NI = no impact
S = significant
STNF = Shasta-Trinity National Forest
SU = significant and unavoidable
VQO = visual quality objective

No-Action Alternative

No mitigation measures are required for the No-Action Alternative.

CP1 – 6.5-Foot Dam Raise, Anadromous Fish Survival and Water Supply Reliability

No mitigation is required for Impact Vis-4 (CP1). Impacts Vis-1 (CP1), Vis-2 (CP1), and Vis -3 (CP1) would remain significant and unavoidable despite the use of mitigation. Mitigation is provided below for other impacts of CP1 on aesthetics and visual resources.

Mitigation Measure Vis-1 (CP1): Amend the STNF LRMP to Include Revised VQOs for Newly Constructed Recreation Developments at All New Sites STNF could prepare an amendment to the STNF LRMP that would modify the management prescription for the area in which newly constructed

developed recreation sites are located from Roaded Recreation to Roaded, High-Density Recreation. The new prescription would allow the newly constructed areas to be characterized as a substantially modified natural environment in support of various recreational activities. In those locations, this amendment would serve to modify the VQOs from Retention to Modification. Implementation of this mitigation measure would ensure that the SLWRI will be consistent with the STNF LRMP, as amended. Impacts on visual resources at areas outside of the newly constructed recreation developments may be significant and unavoidable, depending on the designated VQO. Impact Vis-1 (CP1) would be significant and unavoidable in some areas.

Mitigation Measure Vis-2 (CP1): Minimize Construction-related Visual Impacts on Scenic Views from KOPs Reclamation will do the following to minimize potential impacts on visual resources during project construction:

- When not in use (e.g., after hours or when not required for the day's construction activities), construction equipment will remain in the designated contractor staging area.

- When practicable, construction materials that will remain permanently onsite should be consistent in color, texture, and pattern with the surrounding environment.

Implementation of this mitigation measure would reduce the visual impacts of the project related to the temporary operation of construction equipment and the permanent presence of project features on the landscape, but would not necessarily reduce them to a less-than-significant level. Impact Vis-2 (CP1) would be significant and unavoidable.

Mitigation Measure Vis-3 (CP1): Minimize or Avoid Visual Impacts of Daytime Glare and Nighttime Lighting Reclamation will do the following to minimize or avoid potential impacts on visual resources and aesthetics from daytime glare and nighttime lighting:

- Avoid constant nighttime lighting and overly bright lighting to the extent possible. The location of lighting will respond to the anticipated use and should not exceed the amount of light actually required by users.

- Lights will be screened and directed away from residences to the highest degree possible, and the amount of nighttime light used will be minimized to the highest degree possible. Lighting will include shielding to minimize offsite light spill and glare. In addition, the following measures will apply:

  - The spacing of luminaire lamps (or comparable vandal-resistant lighting) should be the maximum allowable for traffic safety.

  - Luminaires (or comparable vandal-resistant lighting) should be cutoff-type fixtures that cast low-angle illumination to minimize incidental spillover of light onto adjacent private properties and undeveloped open space. Fixtures that project upward or horizontally will not be used.

  - Luminaire lamps (or comparable vandal-resistant lighting) will be directed toward the roadway or lighted feature (e.g., campground restrooms, sidewalks) and away from adjacent residences and open space areas.

  - Luminaire lamps (or comparable vandal-resistant lighting) will provide good color rendering and natural light qualities. Low-pressure and high-pressure sodium fixtures that are not color corrected will not be used.

  - Luminaire lamps (or comparable vandal-resistant lighting) intensity will be the minimum allowable for traffic safety.

  - Luminaire lamp (or comparable vandal-resistant lighting) mountings will be downcast and the height of the poles will be minimized to reduce potential for backscatter into the nighttime sky and incidental spillover of light into adjacent private properties and open space.

  - Luminaire lamp (or comparable vandal-resistant lighting) mountings will have nonglare finishes.

- Guardrails and other roadway fixtures, including retaining walls, safety barriers, light standards, and other structures, will be limited to the minimum length, height, and bulk necessary to adequately provide for the safety of the roadway user. Earth tone colors in dark shades and flat finishes will be used on all roadway fixtures. New and replacement guardrails will not have a shiny, reflective finish. (These features are typically galvanized steel, which weathers naturally to a nonglare finish, typically within a year or so.) Retaining walls and other erosion control devices or structures will be constructed of natural materials whenever possible and will, to the maximum extent possible, be designed and sited to avoid detracting from the scenic quality of the corridor. Such structures will incorporate heavy texture or articulated plane surfaces that create heavy shadow patterns.

Implementation of this mitigation measure would reduce the impacts of the project related to daytime glare and nighttime lighting, but would not reduce them to a less-than-significant level. ImpactVis-3 (CP1) would be significant and unavoidable.

CP2 – 12.5-Foot Dam Raise, Anadromous Fish Survival and Water Supply Reliability

No mitigation is required for Impact Vis-4 (CP2). Impacts Vis-1 (CP2), Vis-2 (CP2), and Vis -3 (CP2) would remain significant and unavoidable despite the use of mitigation. Mitigation is provided below to minimize impacts of CP2 on aesthetics and visual resources to the extent possible.

Mitigation Measure Vis-1 (CP2): Amend the STNF LRMP to Include Revised VQOs for Newly Constructed Recreation Developments at All New Sites This mitigation measure is identical to Mitigation Measure Vis-1 (CP1). Impacts on visual resources at areas outside of the newly constructed recreation developments may be significant and unavoidable, depending on the designated VQO. Impact Vis-1 (CP2) would be significant and unavoidable in some areas.

Mitigation Measure Vis-2 (CP2): Minimize Construction-related Visual Impacts on Scenic Views from KOPs This mitigation measure is identical to Mitigation Measure Vis-1 (CP1). Implementation of this mitigation measure would reduce the impacts of the project related to the temporary operation of construction equipment and the permanent presence of project features on the landscape, but would not necessarily reduce them to a less-than-significant level. Impact Vis-2 (CP2) would be significant and unavoidable.

Mitigation Measure Vis-3 (CP2): Minimize or Avoid Visual Impacts of Daytime Glare and Nighttime Lighting This mitigation measure is identical to Mitigation Measure Vis-3 (CP1). Implementation of this mitigation measure would reduce the impacts of the project related to daytime glare and nighttime lighting, but would not reduce them to a less-than-significant level. Impacts Vis-2 (CP2) and Vis-3 (CP2) would be significant and unavoidable.

CP3 – 18.5-Foot Dam Raise, Anadromous Fish Survival and Water Supply Reliability

No mitigation is required for Impact Vis-4 (CP3). Impacts Vis-1 (CP3), Vis-2 (CP3), and Vis -3 (CP3) would remain significant and unavoidable despite the use of mitigation. Mitigation is provided below to minimize impacts of CP3 on aesthetics and visual resources to the extent possible.

Mitigation Measure Vis-1 (CP3): Amend the STNF LRMP to Include Revised VQOs for Newly Constructed Recreation Developments at All New Sites This mitigation measure is identical to Mitigation Measure Vis-1 (CP1). Impacts on visual resources at areas outside of the newly constructed recreation developments may be significant and unavoidable, depending on the designated VQO. Impact Vis-1 (CP3) would be significant and unavoidable in some areas.

Mitigation Measure Vis-2 (CP3): Minimize Construction-related Visual Impacts on Scenic Views from KOPs This mitigation measure is identical to Mitigation Measure Vis-1 (CP1). Implementation of this mitigation measure would reduce the impacts of the project related to the temporary operation of

construction equipment and the permanent presence of project features on the landscape, but would not necessarily reduce them to a less-than-significant level. Impact Vis-2 (CP3) would be significant and unavoidable.

Mitigation Measure Vis-3 (CP3): Minimize or Avoid Visual Impacts of Daytime Glare and Nighttime Lighting This mitigation measure is identical to Mitigation Measure Vis-3 (CP1). Implementation of this mitigation measure would reduce the impacts of the project related to daytime glare and nighttime lighting, but would not reduce them to a less-than-significant level. Impacts Vis-2 (CP3) and Vis-3 (CP3) would be significant and unavoidable.

CP4 and CP4A – 18.5-Foot Dam Raise, Anadromous Fish Focus with Water Supply Reliability

No mitigation is required for Impact Vis-4 (CP4 and CP4A). Impacts Vis-1 (CP4 and CP4A), Vis-2 (CP4 and CP4A), and Vis -3 (CP4 and CP4A) would remain significant and unavoidable despite the use of mitigation. Mitigation is provided below to minimize impacts of CP4 or CP4A on aesthetics and visual resources to the extent possible.

Mitigation Measure Vis-1 (CP4 and CP4A): Amend the STNF LRMP to Include Revised VQOs for Newly Constructed Recreation Developments at All New Sites This mitigation measure is identical to Mitigation Measure Vis-1 (CP1). Impacts on visual resources at areas outside of the newly constructed recreation developments may be significant and unavoidable, depending on the designated VQO. Impact Vis-1 (CP4 and CP4A) would be significant and unavoidable in some areas.

Mitigation Measure Vis-2 (CP4 and CP4A): Minimize Construction-related Visual Impacts on Scenic Views from KOPs This mitigation measure is identical to Mitigation Measure Vis-1 (CP1). Implementation of this mitigation measure would reduce the impacts of the project related to the temporary operation of construction equipment and the permanent presence of project features on the landscape, but would not necessarily reduce them to a less-than-significant level. Impact Vis-2 (CP4 and CP4A) would be significant and unavoidable.

Mitigation Measure Vis-3 (CP4 or CP4A): Minimize or Avoid Visual Impacts of Daytime Glare and Nighttime Lighting This mitigation measure is identical to Mitigation Measure Vis-3 (CP1). Implementation of this mitigation measure would reduce the impacts of the project related to daytime glare and nighttime lighting, but would not reduce them to a less-than-significant level. Impacts Vis-2 (CP4 and CP4A) and Vis-3 (CP4 and CP4A) would be significant and unavoidable.

CP5 – 18.5-Foot Dam Raise, Combination Plan

No mitigation is required for Impact Vis-4 (CP5). Impacts Vis-1 (CP5), Vis-2 (CP5), and Vis -3 (CP5) would remain significant and unavoidable despite the

use of mitigation. Mitigation is provided below to minimize impacts of CP5 on aesthetics and visual resources to the extent possible.

Mitigation Measure Vis-1 (CP5): Amend the STNF LRMP to Include Revised VQOs for Newly Constructed Recreation Developments at All New Sites This mitigation measure is identical to Mitigation Measure Vis-1 (CP1). Impacts on visual resources at areas outside of the newly constructed recreation developments may be significant and unavoidable, depending on the designated VQO. Impact Vis-1 (CP5) would be significant and unavoidable in some areas.

Mitigation Measure Vis-2 (CP5): Minimize Construction-related Visual Impacts on Scenic Views from KOPs This mitigation measure is identical to Mitigation Measure Vis-1 (CP1). Implementation of this mitigation measure would reduce the impacts of the project related to the temporary operation of construction equipment and the permanent presence of project features on the landscape, but would not necessarily reduce them to a less-than-significant level. Impact Vis-2 (CP5) would be significant and unavoidable.

Mitigation Measure Vis-3 (CP5): Minimize or Avoid Visual Impacts of Daytime Glare and Nighttime Lighting This mitigation measure is identical to Mitigation Measure Vis-3 (CP1). Implementation of this mitigation measure would reduce the impacts of the project related to daytime glare and nighttime lighting, but would not reduce them to a less-than-significant level. Impact and Vis-3 (CP5) would be significant and unavoidable.

19.3.6 Cumulative Effects

Cumulative effects are the impacts on the environment that result from the incremental impacts of the project alternative when added to the impacts of other past, present, and reasonably foreseeable future actions (14 California Code of Regulations Section 15355(b), 40 Code of Federal Regulations Section 1508.7), regardless of what agency (Federal or non-Federal) or entity undertakes such other actions. These impacts can result from individually minor, but collectively significant, actions taking place over time.

The President's Council on Environmental Quality's NEPA regulations and the State CEQA Guidelines require that the cumulative impacts of a project be addressed in an environmental document when the cumulative impacts are expected to be significant (40 Code of Federal Regulations Section 1508.25(a)(2), 14 California Code of Regulations Section 15130(a)). When a lead agency assesses a project having an incremental effect that is not "cumulatively considerable," the lead agency need not consider that effect significant. However, the lead agency will briefly describe its basis for concluding that the incremental effect is not cumulatively considerable.

Methods and Assumptions

The analysis of cumulative impacts in this chapter addresses the cumulative impacts of the various project alternatives. The geographic scope of cumulative

impacts on aesthetics and visual resources includes the viewsheds that would be affected by implementation of the SWLRI alternatives, including views from public areas such as roadways, recreation areas, and scenic vistas. The temporal scope impacts would include construction, operation, and maintenance of the project. According to the State CEQA Guidelines, the cumulative impacts discussion "should be guided by the standards of practicality and reasonableness." The State CEQA Guidelines require that a cumulative impacts analysis identify related projects, summarize the expected environmental impacts of those related projects, and analyze the cumulative impacts of the proposed and related projects. Past, present, and reasonably foreseeable projects affecting the same viewsheds as those associated with the primary study area are described in Chapter 3, "Considerations for Describing the Affected Environment and Environmental Consequences." Because no construction activities associated with the project would occur outside of the primary study area, the geographic scope of the area examined for cumulative impacts is the primary study area identified for this project.

The Antlers Bridge Replacement is an example of the type of project that may contribute to cumulative impacts associated with aesthetics and visual resources in the primary study area, and thus is summarized below.

The California Department of Transportation, in cooperation with the Federal Transit Administration, is in the process of replacing the I-5 Antlers Bridge over Shasta Lake (in the primary study area), near the community of Lakehead. This project includes construction of a 1,942-foot, 5-lane segmental bridge with deep pile foundations that are 12 feet in diameter. In addition, it includes realignment of a 0.4-mile-long segment of I-5, requiring hillside excavation, construction of a 5-lane freeway section and demolition of the existing 1,500 feet of steel deck truss bridge. The new bridge is being constructed next to the existing bridge, which remains open to traffic until the new bridge is completed. Although not considered to have a significant impact on visual resources and aesthetics (Caltrans and DOT 2007), the project is highly visible from surrounding public areas (I-5 corridor, Antlers Public Boat Ramp, and Lakehead). Construction is expected to be completed in 2014.

Cumulative Effects

Chapter 3, "Considerations for Describing the Affected Environment and Environmental Consequences," discusses overall cumulative impacts methodology related to the action alternatives, including the relationship to the CALFED Bay-Delta Program Programmatic EIS/EIR cumulative impacts analysis, qualitative and quantitative assessment, past and future actions in the study area, and significance criteria. Table 3-1, "Present and Reasonably Foreseeable Future Actions Included in the Analysis of Cumulative Impacts, by Resource Area," in Chapter 3, lists the present and reasonably foreseeable future projects considered quantitatively and qualitatively within the cumulative impacts analysis. This cumulative impacts analysis accounts for potential project impacts combined with the impacts of existing facilities, conditions,

land uses, and reasonably foreseeable actions expected to occur in the study area on a qualitative and quantitative level. None of the projects listed in Table 3-1 under Quantitative Analysis would have effects on aesthetic and visual resources in the primary study area or have effects in extended study area that contribute to cumulative impacts of the action alternatives since no impacts have been identified in the extended study area. This analysis is based on the projects listed in Table 3-1 under Qualitative Analysis.

Past and present programs projects that have contributed to cumulative impacts on aesthetic and visual resources include dam construction, reservoir operation, flood management projects, land use alterations, and other construction projects.

The impact of the proposed SLWRI alternatives on aesthetics and visual resources in the project study area would be largely significant and unavoidable, and would be collectively significant when included with other actions taking place over time. Past, present, and reasonably foreseeable projects described in Chapter 3, Table 3-1, such as bridge reconstructions (e.g., Antlers Bridge Replacement) and highway modifications along the I-5 corridor, changes to marinas and resorts, vegetation management, land use changes (e.g., Mountain Gate at Shasta Mixed-Use Area Plan), new quarries (e.g., Moody Flats Quarry), and mine reclamation on the surrounding hillsides could all affect the impression that viewers have of the region.

Under all SLWRI alternatives impacts Vis-1, Vis-2, and Vis-3 would be significant and unavoidable. Implementation of the SLWRI alternatives would contribute to cumulative adverse conditions where construction activities and/or permanent changes to the landscape, such as a wider bathtub ring and new recreation facilities, occupy the same field of view as other facilities or impacted landscapes that are in the viewsheds of sensitive viewers in the project study area. Implementation of the proposed SLWRI alternatives would result in impacts on visual resources that would be inconsistent with LRMP VQOs in some parts of the project study area, and would degrade or obstruct scenic views from KOPs. Glare from construction equipment and exposed soils, and the operation of equipment in active construction areas are significant and unavoidable impacts. Mitigation measures Vis-1 through Vis-3 would be implemented to buffer these impacts to the extent possible (e.g., storage of construction equipment in designated areas), although impacts would not be reduced to a less-than-significant level. When assessed with other projects that could change the character and quality of the aesthetics and visual resources in Shasta Lake and vicinity and the upper Sacramento River, impacts resulting from implementation of the proposed SLWRI alternatives would be cumulatively significant.

None of the project alternatives would have a cumulatively considerable effect on aesthetics and visual resources in the extended study area.

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