

## **APPENDIX C**

### **Visual Impact Report**



# Kilarc-Cow Creek Hydroelectric Power Project License Surrender Draft EIR

## Visual Resources Report

State Clearinghouse # 2013032029





## Document Information

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# VISUAL RESOURCES

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## 1.1 Introduction

The Kilarc-Cow Creek Hydroelectric Project (Hydro Project) is licensed by the Federal Energy Regulatory Commission (FERC), and is designated FERC Project No. 606. The existing license expired on March 27, 2007, and the Hydro Project continues to operate under an annual license. On March 13, 2009, PG&E filed a License Surrender Application (LSA) to surrender its license for the Hydro Project. In compliance with the National Environmental Policy Act (NEPA), FERC prepared an Environmental Impact Statement (EIS). On July 6, 2012, PG&E applied to the State Water Board for a Clean Water Act (CWA) Section 401 water quality certification for the Kilarc-Cow Creek Hydroelectric Project License Surrender. The State Water Board must comply with CEQA prior to issuing any certification for the Proposed Project.

The California Environmental Quality Act (CEQA) establishes that it is the policy of the state to take all action necessary to provide the people of the state "with...enjoyment of aesthetic, natural, scenic and historic environmental qualities" (CA Public Resources Code Section 21001[b]). This report analyzes and discloses potential project affects consistent with the California Environmental Quality Act (CEQA) definitions and guidelines. The visual impact assessment was prepared using a process developed by the Federal Highway Administration (FHWA) in conjunction with the American Society of Landscape Architects. This process for assessing visual impacts satisfies the requirements of the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA). This report has been prepared on behalf of the State Water Resources Control Board in support of the CEQA analysis for Kilarc-Cow Creek Hydroelectric Project License Surrender EIR (Proposed Project).

## 1.2 Project Proposal

The Hydro Project consists of two developments constructed between 1904 and 1907: the Kilarc Development on Old Cow Creek and the Cow Creek Development on South Cow Creek. The following provides an outline for decommissioning activities for each feature in each development.

### **Kilarc Development Features and Their Proposed Disposition**

#### ***North Canyon Creek Diversion Dam***

- Remove wooden stream bank supports and bottom boards.
- Leave small wooden structure in place to minimize site disturbance caused by difficult access.

#### ***North Canyon Creek Canal***

- Several options are available for decommissioning the earthen canal from abandon in-place, to filling the canal by excavating one-half of the height of the canal berm and using the excavated materials as fill, (the canal is constructed of native material and has no lining). If abandoned in-place the canal would be strategically breached to address storm runoff to avoid potential erosion/sediment issues. If filled, the surface would be graded to drain rainwater and appropriate erosion controls would be implemented.
- Appropriate erosion control measures would be implemented.

#### ***South Canyon Creek Diversion***

- Remove diversion walls, gate, operating mechanism, and all segments.

#### ***South Canyon Creek Flume***

- Remove wooden and corrugated metal pipe structures.

### ***South Canyon Creek Canal***

- Several options are available for decommissioning the earthen canal from abandon in-place, to filling the canal by excavating one-half of the height of the canal berm and using the excavated materials as fill, (the canal is constructed of native material and has no lining). If abandoned in-place the canal would be strategically breached to address storm runoff to avoid potential erosion/sediment issues. If filled, the surface would be graded to drain rainwater and appropriate erosion controls would be implemented. For the concrete spillway and concrete gate slots, they would be removed and backfilled with excavated berm material.

### ***South Canyon Creek Canyon Creek Siphon***

- Remove trash bars and concrete wing walls, collapsing a rubble wall, and burying it with excavated berm material.
- Remove all above-grade pipe and installing a cast-in-place concrete block at the vertical intake. Buried portions of the siphon would be abandoned in place.

### ***Kilarc Main Canal Diversion Dam***

- Remove the structures, guide walls, the diversion gate and frame, the gate operator, and debris from the site.
- A temporary cofferdam or diversion may be required.
- The concrete portion that was added to construct the diversion would be removed.

### ***Kilarc Main Canal***

- For the concrete sections of canal and shotcrete-lined canal, the concrete walls and bottom would be broken-up and pushed into canal bottom. The canal with then be filled with excavated berm material, graded, and erosion control measures implemented.
- For the earthen canal sections, several options are available for decommissioning from abandon in-place, to filling the canal by excavating one half of the height of the canal berm and using the excavated materials as fill, (the canal is constructed of native material and has no lining). If abandoned in-place the canal would be strategically breached to address storm runoff to avoid potential erosion/sediment issues. If filled the surface would be graded to drain rainwater and appropriate erosion controls would be implemented. The flumes would be removed to their foundations, anchor bolts would be saw cut, or ground flush, and foundation piers would be left in place.
- Remove mechanical equipment, a shed, concrete sections, grading, and if required installing rip-rap.
- Broken concrete would be used for rip rap if required where removal of structure damages the slope.
- Remove gates, frames, gate operators, support structures, catwalk, and guidewalls.
- Demolish the overflow spillway, filling and grading the spillway, and implementing appropriate erosion control measures.
- Remove thermal electric generator and building.

### ***Kilarc Forebay***

- Remove the intake trash rake, telemetry, and electrical equipment; demolish and remove fencing and structures, and backfill the culvert when the canal is backfilled.
- Fill the forebay with excavated bank material, seed and grade for drainage, and implement appropriate erosion control measures.

- Demolish the overflow spillway, fill and grade the spillway (as part of reservoir fill work), and implement appropriate erosion control measures.
- Disassemble and remove the bridge and platform, remove control equipment, and cut the shaft off at the bottom of the reservoir.
- Remove picnic tables and site furnishings. Demolish and remove the restroom buildings. The toilet vaults would be pumped, backfilled and abandoned in-place.

#### ***Kilarc Penstock***

- Plug the upper and lower ends of the penstock with concrete and grading to cover the exposed section at the surge tower.
- Cutting-off and removing the surge tower. The opening would be covered with a welded steel plate.

#### ***Kilarc Powerhouse***

- Remove turbines and generators and all associated electrical and mechanical equipment associated with the powerhouse and abandon the structure in place.
- Turbine pits would be filled with mass concrete or other suitable fill material and capped with concrete.
- All openings would be sealed and the tailrace backfilled to the confluence using local earth materials.
- The building would remain in place; the long-term disposition of the structure needs to be determined.
- The switchyard would be left in place, as it is an integral part of the PG&E interconnected transmission system.

### **Cow Creek Development Features and Their Proposed Disposition**

#### ***Mill Creek Diversion Dam***

- Demolition and removal of materials from the site.
- Demolition may require construction of a temporary channel diversion.
- A temporary cofferdam may be required.

#### ***Mill Creek-South Cow Creek Canal***

- Several options are available for decommissioning the earthen canal from abandon in-place, to filling the canal by excavating one-half of the height of the canal berm and using the excavated materials as fill. If abandoned in-place the canal would be strategically breached to address storm runoff to avoid potential erosion/sediment issues. If filled, the surface would be graded to drain rainwater and appropriate erosion controls would be implemented.

#### ***South Cow Creek Diversion Dam***

- Dam removal would include removing the concrete top, removing fill, and removing the bin walls.
- A temporary cofferdam/diversion may be required.
- Some structures connecting to the steep slope would be left in place to minimize disturbance to the slope due to decommissioning activities.
- Remove all equipment (e.g., mechanical devices, gates, screens, and rakes).
- Remove concrete walls and baffles.
- Sediment from behind the dam maybe used for backfill.

- Backfilled areas would be capped with an impermeable layer.

### ***South Cow Creek Main Canal***

- For the shotcrete-lined canal sections, the concrete walls and bottom lining would be broken-up and pushed into the canal bottom. The canal would then be filled with excavated berm material, graded, and erosion control measures implemented.
- For the earthen canal sections, several options are available for decommissioning from abandon in-place, to filling the canal by excavating one half of the height of the canal berm and using the excavated materials as fill, (the canal is constructed of native material and has no lining). If abandoned in place the canal would be strategically breached to address storm runoff to avoid potential erosion/sediment issues. If filled the surface would be graded to drain rainwater and appropriate erosion controls would be implemented.
- Tunnel work includes plugging the upstream and downstream ends of the tunnel with concrete and abandoning the tunnel in place.

### ***Cow Creek Forebay and Dam***

- Dewater the forebay.
- Remove the forebay by backfilling with the adjacent berm material, grading, and reseeding.
- Removal of the outlet structure would consist of removing structural steel elements, cutting-off corrugated metal pipe flush with the bottom, breaking-up concrete, and backfilling.
- Broken concrete would be placed in the forebay and covered with earth.
- Remove the mechanical trash rake and the demolition and removal of concrete walls.
- Below-grade structures would be left in place and graded over.
- The spillway would be abandoned in place to minimize disturbance to the slope that would be caused by removal.

### ***Cow Creek Penstock***

- Upstream and downstream ends of the penstock would be plugged with an engineered concrete block.
- The remaining penstock is mostly buried and would be abandoned in place.

### ***Cow Creek Powerhouse***

- Remove turbines and generators, and all associated electrical and mechanical equipment and abandon the structure in place.
- Existing concrete would be left in place.
- Turbine pits would be filled with mass concrete or other suitable fill and capped with concrete.
- The building would remain in place. Long-term disposition of the structure needs to be determined.
- Switchyard work includes removing equipment and structures.
- Decommissioning would end water delivery to the Wild Oak Hydro Powerhouse and the Abbott Diversion for irrigation. PG&E would work with the affected parties to address these issues.

### ***Project Roads***

- Project decommissioning may require improvement of existing roads and/or new access for equipment required for decommissioning the Project facilities. Following completion of Project decommissioning,

the roads maybe left in-place or removed. How the roads are left would depend on landownership, desires of the landowner, and environmental considerations.

- Leave existing Project roads in place per landowner request.
- Scarify and seed the surfaces of any roads to be rehabilitated.
- Implement erosion controls and Best Management Practices (BMPs) as appropriate.
- Erect barriers/obstacles as required to limit future access.

## **1.3 ENVIRONMENTAL SETTING**

### **1.3.1 Regional Setting**

The Proposed Project is located approximately 30 miles east of Redding in the foothills of the Cascade Mountain Range, approximately 6 miles from the community of Whitmore. The facilities associated with the Kilarc and Cow Creek Developments are at elevations ranging from approximately 850 feet above mean sea level (MSL) at the Cow Creek powerhouse to approximately 3,950 feet above MSL at the North Canyon Creek diversion dam. The landform of the region varies from gently rolling hills near the Cow Creek Powerhouse to steeper narrow canyons at the upper elevations near the Old Cow Creek drainage. The vegetation throughout the project area is diverse and includes river banks and canyons densely vegetated with conifer forest, and oak savannah and pine grassland at the lower elevations. Because of the dramatic topography, natural vegetative patterns and abundance of visible water bodies, the region is known for its many high quality vistas and scenery.

Land use in the project area outside of community centers is predominantly national forest, timber production, agriculture, recreation, and conservation. Several of these designations are intended for lands that are mostly unimproved and are intended to remain as open space in visual character.

State Highways 44 and 299 are the primary state transportation corridors that serve the region. Several county roadways provide secondary access throughout the area. Fern Road East is the closest public roadway to the project, where it passes immediately adjacent to the Kilarc powerhouse, switchyard and penstock. No other project features are visible from public roads in the area.

The project is located on land owned in fee by PG&E or occupied under the appropriate real property agreements. Much of the land surrounding the project is privately held, and access to many of the project facilities is restricted or only allowed by way of easements. The Kilarc facilities are adjacent to property owned by Sierra Pacific Industries, and land surrounding the Cow Creek Development has several privately held large ranches.

### **1.3.2 Project Setting**

#### **Kilarc Development Setting**

Kilarc Forebay is located on a ridge approximately 1,200 feet above the Kilarc power house to the southeast. The Kilarc forebay facility includes the approximately 4.5 acre forebay pond, the forebay dam, a diversion canal (Kilarc main canal), and a day-use area with picnic tables and restrooms. The Kilarc forebay facility is accessed by approximately four miles of unpaved road, including Miller Mountain Road as well as an access road over private land easements. The project cannot be seen from Miller Mountain Road. Views from the access road to the Kilarc forebay area are substantially reduced by topography and vegetation except for a short section where it terminates at the day use area. Views within and through the forebay and day use facilities are somewhat filtered by the existing trees and other vegetation growing in and around the various recreational use areas.



**Figure 1. View of the Kilarc forebay**

The Kilarc forebay dam is an earth-filled structure with established grasses and forbes covering its slopes. The dam is located along the forebay's western edge, and the day use area is located east and northeast of the forebay. As a result the dam-face is not easily visible from the day use area and is only partially visible from the path around the forebay pond perimeter. A metal access bridge and platform are visible in the forebay pond, along with associated fencing, electrical equipment, power poles and overhead lines. A small metal pedestrian bridge can be seen at the canal inlet to the pond. The vegetative character of the Kilarc forebay vicinity is predominantly white fir, Jeffrey pine, and lodgepole pine forest (refer to Figure 1). Because of the forebay's location on the ridge top, distant views are available from the few spots where they're not obscured by intervening vegetation surrounding the facility. Where openings in the vegetation allow, distant views of the peaks in the Shasta National Forest can be seen to the northwest, and Lassen Peak is visible to the southeast (refer to Figure 2).



**Figure 2. Distant view of Lassen Peak to the southeast from Kilarc forebay**

Kilarc powerhouse is located at an elevation of approximately 2,580 feet above MSL on the western slope of Miller Mountain. The Kilarc powerhouse building is constructed of locally-quarried stone walls, with a steep-pitched gable roof clad in metal sheathing. The building includes arched windows with glass or wooden louvers and painted wooden doors. Concrete arch-top vent openings are seen on the gable-end walls. The switchyard, immediately east of the power house along Fern Road East, is characterized by its equipment, poles, wires, conductors and other elements, and is surrounded by galvanized chain-link fence. For the most part, the Kilarc powerhouse and switchyard are surrounded by densely forested hillsides. Ranches can also be seen occasionally in the area along Fern Road East. Because of the curvilinear roadway and dense vegetation, views



from the roadway to the Kilarc powerhouse, switchyard and penstock are limited to an approximately 800-foot section of Fern Road East.



**Figure 3. View of the Kilarc powerhouse and switchyard**

Where visible, the power house and switchyard are highly noticeable due to their close viewing proximity and unique visual character (refer to Figure 3). The powerhouse is also accessible to the public along the northern side away from the road. The Kilarc penstock is mostly underground and is recognizable by the approximately 50-foot wide cleared area following its alignment up the hillside toward the Kilarc forebay.



**Figure 4. View of the Kilarc day use area near the forebay**

The Kilarc day use area is modestly developed, and the visual character includes scattered wooden picnic tables, small metal pedestal barbecues, parking bollards, trash cans, and signage (refer to Figure 4). The day use area is unpaved, and the concrete block and wood restroom building is the largest, most noticeable built element.

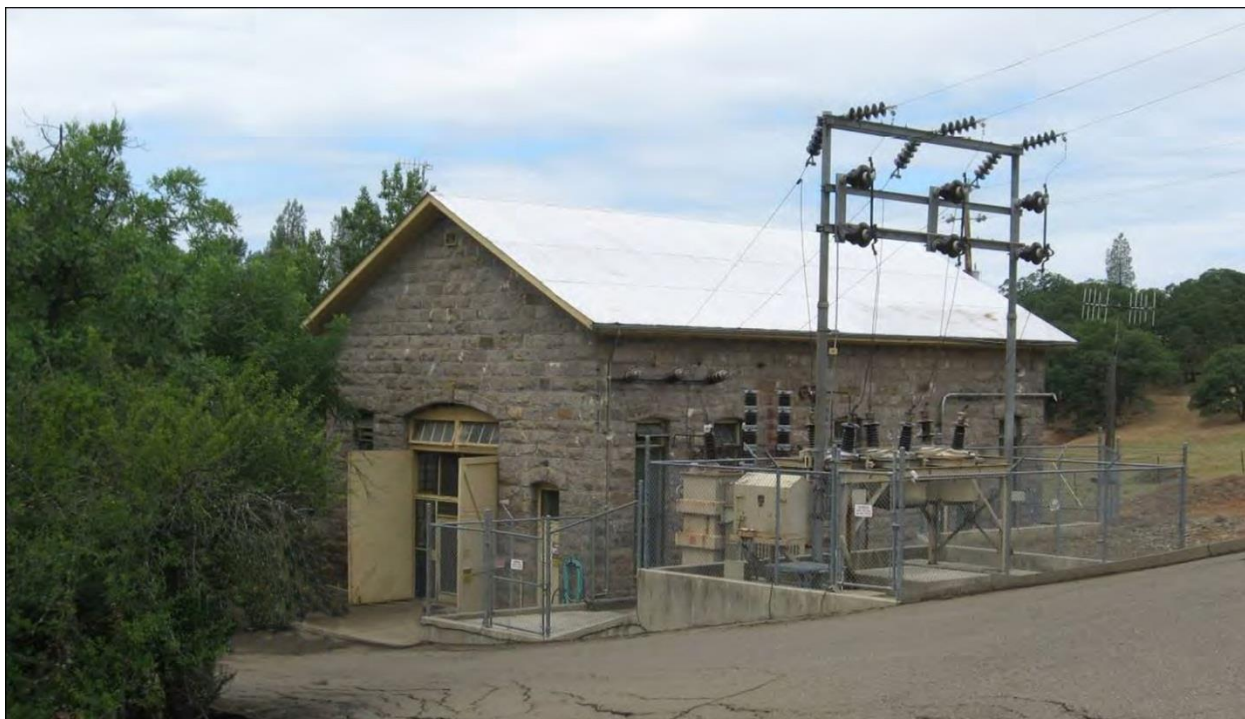
A mechanized trash rake is located on the Kilarc main canal just east of the day use area and is readily seen from the terminus of the access road. The trash rake is surrounded by chain-link fencing with razor wire and



includes telecommunications equipment and signage. The Kilarc main canal continues east from the trash rake and has limited to no visibility from the access road and day use area.

### **Cow Creek Development Setting**

The Cow Creek development is approximately 8 miles southwest of the Kilarc development. The Cow Creek powerhouse is a steel truss building located at an elevation approximately 855 above mean sea level (MSL). The landform of the Cow Creek area is generally characterized by undulating foothills bisected by shallow drainages and steeper creekways. The vegetative cover surrounding the Cow Creek powerhouse is mostly interior live oak woodland, blue oak-foothill pine woodland, and non-native annual grassland. The area immediately surrounding the powerhouse is primarily non-native grassland with scattered sycamore, pine and oak trees (refer to Figure 5).



**Figure 5. View of the Cow Creek powerhouse and switchyard**

The Cow Creek powerhouse is located along South Cow Creek Road, however public access is not allowed because of locked gates approximately 1 mile southwest and 1.5 miles northeast of the powerhouse. As a result, no public views of the Cow Creek powerhouse are available. The Cow Creek powerhouse can be seen from private viewing areas, although because of the curvilinear roadway and intervening vegetation, visibility is substantially limited.

The Cow Creek forebay is located northeast of the powerhouse at an approximate elevation of approximately 1,550 feet above MSL. The forebay pond has a surface area of approximately 1 acre and is retained by a 16-foot tall earth-filled dam. Public access to the Cow Creek forebay facility is prohibited. Due to the approximately 700 foot elevation differential and the mature vegetation, the Cow Creek forebay cannot be seen from South Cow Creek Road. In addition the Cow Creek penstock and main canals are not visible from the publicly accessible portions of South Cow Creek Road. Because of this, no public views of the Cow Creek development are available.

## **1.4 REGULATORY SETTING**

Public opinion and policy concerning the established visual character of the regional landscape are important factors in assessing the baseline values ascribed to the setting. Community-based goals serve as an essential



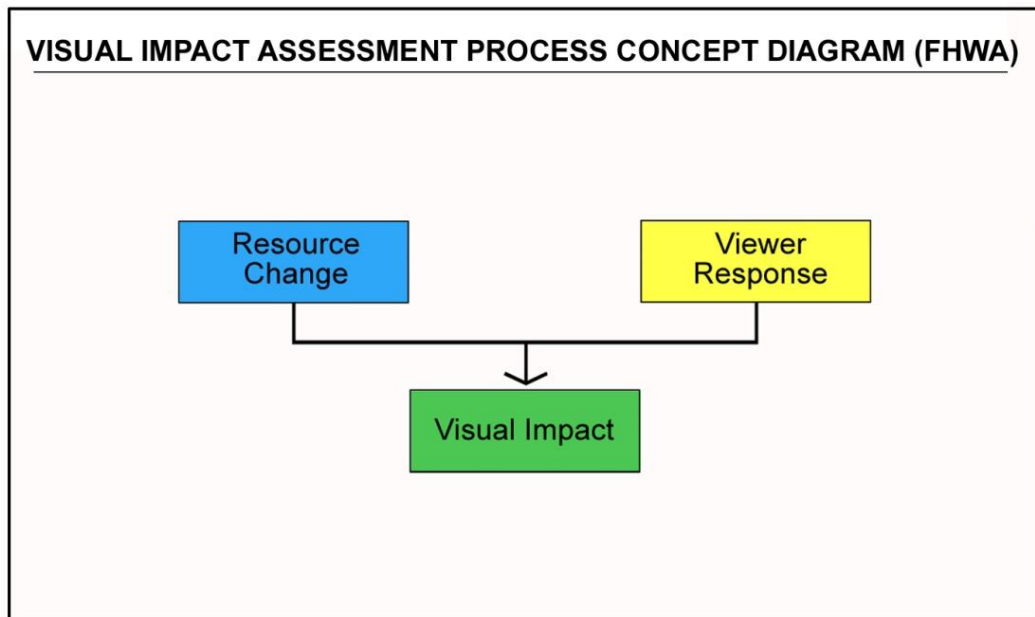
tool for predicting the likely reaction that changes resulting from the proposed project would evoke from the viewing public.

The project is located within the jurisdictional boundaries of Shasta County. The Shasta County General Plan (as amended in September 2004), Sections 6.8 (*Scenic Highways*), Figure SH-1 indicates that the project is not within the viewshed of any planned or officially designated scenic highway. Furthermore, Section 6.9 (*Open Space Inventory*), states the project area is not included in Shasta County's Open Space Inventory.

## 1.5 ENVIRONMENTAL IMPACTS AND MITIGATION

### 1.5.1 ANALYSIS METHODOLOGY

This study employs an analysis model developed by the Federal Highway Administration (FHWA) in conjunction with the American Society of Landscape Architects. The major components of this process include establishing the visual environment of the project, assessing the visual resources of the project area, and identifying viewer response to those resources. Those components define the existing or baseline conditions. Resource change introduced by the project and the associated viewer response is then assessed, providing a basis for determination of potential visual impacts. Visual impact is a function of assessing the extent of physical change (resource change), and comparing that with the degree of viewer sensitivity (viewer response). A generalized visual impact assessment process is illustrated in the following diagram.



**Figure 6. Visual Impact Assessment Process Concept Diagram**

### 1.5.2 VISUAL RESOURCE CHANGE

The physical changes caused by the project manifest themselves mainly in terms of form, line, color and texture, as well as the associated relational aspects of scale, dominance, diversity and continuity. These inherent physical attributes are visually experienced as an integrated whole, defining the perceived visual character of the landscape. How these attributes relate to one another and their setting is assessed in part by analyzing what is defined in the FHWA methodology guidance as the view's *vividness*, *intactness* and *unity*. These three visual rating criteria are described as follows:

Vividness is the visual power or memorability of the landscape components as they combine in striking and distinctive visual patterns.

Intactness is the visual integrity of the landscape and its freedom from non-typical encroaching elements. If all of the various elements of a landscape seem to "belong" together, there will be a high level of intactness.

Unity is the visual harmony of the landscape considered as a whole. Unity represents the degree to which potentially diverse visual elements maintain a coherent visual pattern.

In order to assess the degree of resource change caused by the project, the FHWA method recommends a numerical rating process which compares the visual quality in terms of vividness, intactness and unity (described above), of both the existing and proposed conditions under consideration. Separate Resource Change (RC) evaluations were conducted from each of the four representative Observer Viewpoints. A numerical rating between 1 and 7 was assigned for the visual quality of existing conditions from each viewpoint, with 1 having the lowest value and 7 the highest. Photo simulations were then prepared illustrating the likely appearance of each view after project construction. After a combination of field reviews and photo simulation study, numerical ratings were then assigned to each of these “proposed” views. The numerical difference, if any, between the existing and proposed conditions quantifies the degree of resource change which may occur as a result of the proposed project. Table 1 below illustrates a range of visual resource change ratings and the corresponding narrative descriptions of the ratings:

**Table 1-1 Visual Resource Change Ratings (VC) and Corresponding Narrative Descriptions**

	Negative Visual Resource Change						Positive Visual Resource Change					
Visual Resource Change Rating (RC)	5.0	-4.0	-3.0	-2.0	-1.0	0	1.0	2.0	3.0	4.0	5.0	
Equivalent Narrative Rating	High	Moderately High	Moderate	Moderately Low	Low	No Change	Low	Moderately Low	Moderate	Moderately High	High	

The Resource Change (RC) evaluation determines which specific criteria contribute most to the existing quality of each view, and if change would occur to that criteria as a result of the project. If a numerical change in visual criteria was identified, this change was analyzed for its potential effect on the existing visual quality. Ultimately, the degree of resource change (as determined by the Resource Change evaluation) must be combined with the anticipated viewer response in order to understand and determine potential levels of visual impact

### 1.5.3 **VIEWER RESPONSE**

Viewer response assumptions include consideration of viewing proximity, number of viewers, duration of views, activity while viewing, and overall viewing context. Local values based on visual preferences, historical associations, and community values are also important indices of predicting viewer sensitivity and response to change.

Shasta County residents and visitors enjoy an overall high quality visual environment. As stated in the Shasta County General Plan Scenic Highways Element, *“Because Shasta County contains two major river valleys, the Sacramento and the Fall; and three major mountain ranges, the Coast, Klamath, and Cascade; its scenic resources are both varied and remarkable.”* This high quality visual baseline context creates a higher standard of viewer expectations regarding scenic quality. At the same time, the abundance of high quality views allows a greater ability for the landscape to visually “absorb” certain changes without affecting the overall viewing experience. For example, if a potential viewer has access to numerous comparable quality views, viewer sensitivity regarding alterations to just one of those views may be reduced.

This is important because the project proposes closing the Kilarc forebay facility and the associated day use area, thereby eliminating visual access to the site. The *Preliminary Proposed Decommissioning Plan (PG&E 2007)* identifies several facilities in the region which provide recreational opportunities similar Kilarc forebay. Of these other recreational areas, this study identified three locations for consideration regarding comparable visual enjoyment experience in terms of scenic quality, character, viewer exposure and access. Lake Grace, Lake Nora, and McCumber Reservoir are nearby public facilities which each have certain visual characteristics comparable to those of the Kilarc forebay area. The approximate distances shown are referenced from Whitmore, the nearest community to the project.



**Figure 7. View of Lake Grace (approximately 20 miles from Whitmore)**



**Figure 8. View of Lake Nora (approximately 22 miles from Whitmore)**





**Figure 9. View of McCumber Reservoir (approximately 27 miles From Whitmore)**

Consistent with FHWA analysis methodology, separate Viewer Response (VR) ratings were conducted for each of the four representative Observer Viewpoints. A numerical rating between 0 and 7 was assigned for the expected viewer sensitivity and response from each viewpoint, with 0 having the lowest value and 7 the highest. Table 2 below illustrates the range of viewer response ratings and the corresponding narrative descriptions of the ratings:

**Table 1-2 Viewer Response Ratings (VR) and Corresponding Narrative Descriptions**

Viewer Response Numerical Rating (VR)	0	1	2	3	4	5	6	7
Viewer Response Narrative Rating	Low	Low	Moderate Low	Moderate	Moderate	Moderate High	High	High

#### **1.5.4 OBSERVER VIEWPOINTS**

Representative viewing locations, called Observer Viewpoints (OV), were selected which best disclose the typical visual character of the project, show unique project components or affected resources, and which represent affected public viewer groups.

Field observations were conducted in November 2012 to ensure a thorough analysis of the project's potential visibility. Based on the project description provided in the *Preliminary Proposed Decommissioning Plan*, the existing facilities and areas of proposed actions were viewed from potential viewing locations on public roadways, recreation areas and access roads, and other locations in the surrounding area. Of those potential viewing areas, four Observer Viewpoints were selected to document the extent and type of visibility expected for the project (refer to Table 3). For the Kilarc portion of the project, a viewpoint was selected from the forebay perimeter path toward the Kilarc pond. A second Observer Viewpoint was identified along Fern Road East showing the powerhouse and switchyard. A third viewpoint was selected at the day use area, and the fourth viewpoint identified from the terminus of the Kilarc access road looking toward the Kilarc main canal and the trash rack. Field assessment of the other features of the Kilarc development determined that because of limited visibility, no Observer Viewpoints were appropriate for those locations.

For the Cow Creek development, no Observer Viewpoints were identified because no public viewing opportunities exist due to distance, topography, and intervening vegetation.

**Table 1-3 Observer Viewpoint (OV) Locations**

OV Number	Observer Viewpoint Location
1	From the Kilarc forebay perimeter path toward Kilarc pond
2	From Fern Road East Toward the Kilarc Powerhouse and switchyard
3	From the Kilarc day use area
4	From Kilarc access road looking toward the trash rake on the main canal

### **1.5.5 Photo-Simulations**

Photo-simulations are provided from each of the Observer Viewpoints. Photographs were taken with a 50mm focal lens to approximate the natural perception of the human eye. Adjacent photographs were combined to provide a wider visual context consistent with the actual viewing experience.

Photo-simulations illustrate the visual character from each of the Observer Viewpoints, and provide an overview of the visual setting of the project area. In each case, the "existing" image shows how the view looked at the time of this study, and the "proposed" simulation represents how that location might appear with the particular project option in place. For the purpose of this study, new vegetative growth in the photo-simulations shows plant growth at approximately ten years after project implementation.

### **1.5.6 Thresholds of Significance**

Shasta County planning documents do not contain specific criteria for determining thresholds of significance regarding aesthetic resources. However, in comparing the project to the following CEQA Guideline thresholds, consideration was given to the project's consistency with public policies concerning scenic vistas, scenic roadways, visual character, and night lighting. Specifically, the project would be considered to have a significant effect on the environment if the effects exceed the significance criteria described below.

### **1.5.7 California Environmental Quality Act Guidelines**

The significance of potential aesthetic resources impacts are based on thresholds identified within Appendix G of the CEQA Guidelines. According to the Guidelines, aesthetic impacts would be considered significant if the proposed project would:

***Have a substantial adverse effect on a scenic vista.***

A substantial adverse impact to a scenic vista would occur if the project would significantly degrade the scenic landscape as viewed from public roads, or in particular county or state-designated scenic roadways, or from other public areas. The degree of potential impact on scenic vistas varies with factors such as viewing distance, duration, viewer sensitivity, and the visual context of the surrounding area.

***Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.***

This CEQA threshold does not apply because the project is not within the view corridor of any Officially Designated State Scenic Highway.

***Substantially degrade the existing visual character or quality of the site and its surroundings.***

Project related actions would be considered to have a significant impact on the visual character of the site if they altered the area in a way that substantially changed, detracted from, or degraded the visual quality of the site and was inconsistent with community policies regarding visual character. The degree to which that change reflects documented community values and meets viewers' aesthetic expectations is the basis for determining levels of significance. Visual contrast may be used as a measure of the potential impact that the project may have on the visual quality of the site. If a strong contrast occurred where project features or activities attract

attention and dominate the landscape setting, this would be considered a potentially significant impact on visual character or quality of the site.

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

The project would result in a significant impact if it subjected viewers from public roads or adjacent residences to a substantial amount of point-source lighting visibility at night, or if the collective lumination of the project resulted in a noticeable spill-over effect into the nighttime sky, increasing the ambient light over the region.

## 1.6 VISUAL IMPACT ASSESSMENT

The following section contains the numerical ratings assigned to the existing and proposed views as seen from each Observer Viewpoint (OV), along with a brief explanation of the rating numbers. Photographs of the existing conditions along with photo-simulations of the project are included to provide a basis for understanding the visual changes proposed by the project.

Consistent with the process shown in Figure 6, the following section analyzes the project in terms of the numerical difference in physical change (Visual Quality Evaluation rating) combined with the expected sensitivities and responses of potential viewer groups (Viewer Response rating). The Visual Quality Evaluation rating is combined with the Viewer Response rating, with the results providing the basis for understanding and determining the type and extent of potential visual impacts.

### OBSERVER VIEWPOINT 1 - From the Kilarc forebay perimeter path toward Kilarc pond.



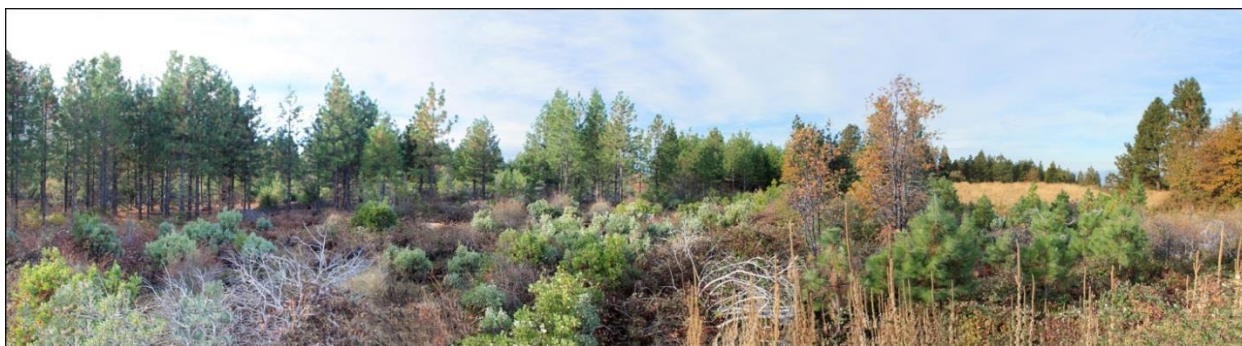
#### OV-1 Existing Condition

Because of existing trees and other vegetation in the area, views of the Kilarc forebay are generally limited to locations within relatively close proximity to the facility itself. The existing view of the Kilarc forebay is of moderately high visual quality. The vividness, or memorability of the view is increased by the site's somewhat unique location on the ridge top. Although mostly blocked by surrounding trees, views from the forebay perimeter path include long-distance vistas of the Shasta Range to the north and Mount Lassen to the east. The visual intactness of the Kilarc forebay view is moderate, largely because the built characteristics of the metal platform apparatus and bridge, and the engineered appearance of the dam are visually inconsistent with the surrounding natural landscape. Visual unity is also moderately high because in spite of the few built elements of the facility, the overall visual composition is fairly cohesive.

#### Viewer Response

The *Recreational Resources Report* (PG&E 2007) indicates that most users of the Kilarc forebay visit the site during the summer months, with as many as 25 visitors observed during Memorial Day weekend. The average number of visitors at one time was observed to be 5.4. In addition the *Recreational Resources Report* found that the predominant use is fishing, and that sightseeing is also one of the top activities listed by users. Fishing, which is often a passive activity, affords the user prolonged viewing opportunities of the surroundings. Sightseeing by definition indicates a high user appreciation for the scenic quality of the area. In addition, the

somewhat unique location of the Kilarc forebay on the ridge top creates a sense of anticipation for visitors travelling to the site, as well as increased expectations regarding the viewing experience. Although expansive panoramas are substantially limited by vegetation surrounding the forebay, the occasional glimpse of a distant mountain peak increases the sensitivity to view quality. However the total number of visitors is relatively low compared to many other recreational lakes in the region, and as a result the somewhat high viewer response rating at the Kilarc forebay is slightly reduced.



### OV-1 Proposed Condition

The project proposes to remove the Kilarc dam, intake, and other man-made elements and restore the site to a somewhat natural condition. In doing this, the memorability rating would be reduced since the uniqueness of the forebay would be gone and the site would in time be visually indistinguishable from the adjacent landscape. The restoration of the forebay would also result in an increase in the visual intactness and unity ratings of the area. Removal of the existing built elements would cause the site to visually blend with the surrounding forest setting.

Regardless of the visual quality of the deconstructed forebay, the project proposes to close the facility and prohibit access to the area. As a result, these views would no longer be available to the public. The public's ability to enjoy of the type of visual amenities found at the Kilarc forebay would be dependent on the availability of similar views at other recreational sites in the area. Field review indicates that a number of comparable recreational viewing experiences are found in the vicinity. Lake Nora (approximately 22 miles from Whitmore), Lake Grace (approximately 20 miles), and McCumber Reservoir (approximately 27 miles) each provide recreational uses and associated visual enjoyment opportunities similar to that of Kilarc.

Resource Change (RC) Evaluation				OV-1
	Vividness (V)	Intactness (I)	Unity (U)	(=V+I+U/3)
Existing	5.5	4.2	5.0	--4.9
Proposed	5.3	5.5	5.8	--5.5
Visual Quality Difference =				<b>+0.6</b>

Viewer Response (VR) Rating	OV-1
Viewer Response (VR)	<b>5.0</b>

Visual Impact Rating	OV-1
Resource Change (RC)	+0.6
Viewer Response (VR)	--5.0



## Visual Impact Rating

OV-1

Visual Impact (See Note Below)

**+2.8**

*=[(Absolute value of RC) + VR] / 2, with plus or minus sign applied to the resulting numeral depending on whether the resource change (RC) was positive or negative*

### OBSERVER VIEWPOINT 2 – From Fern Road East toward the Kilarc powerhouse and switchyard



### OV-2 Existing Condition

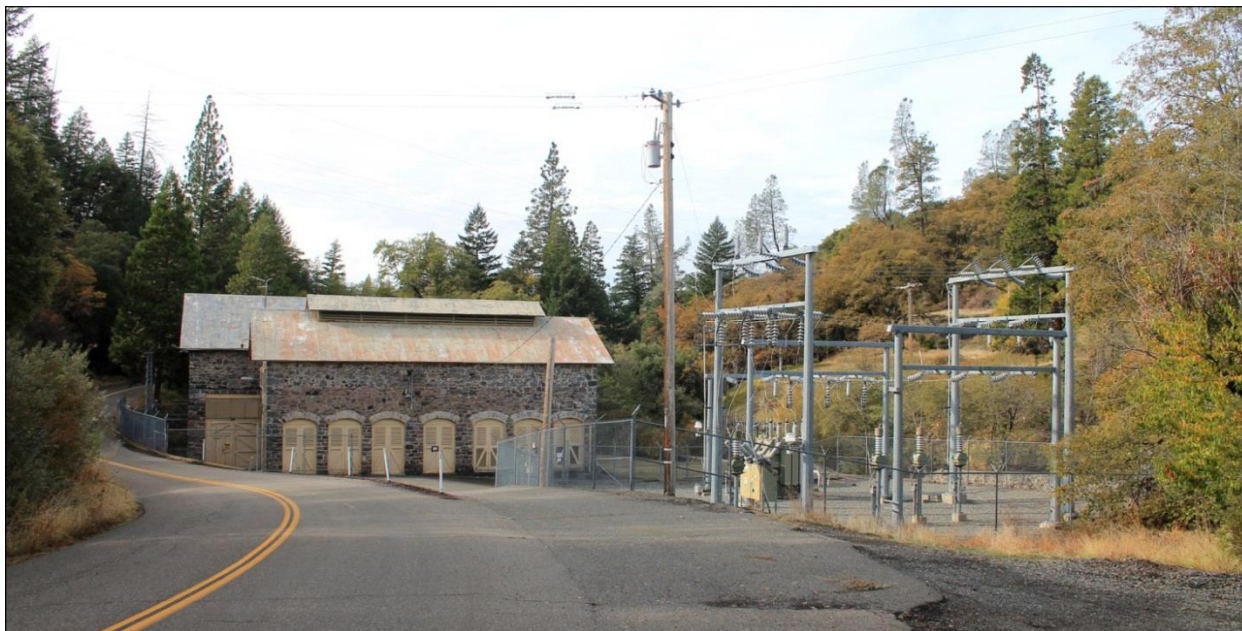
The existing visual quality of the Kilarc Powerhouse facility is moderately high. The memorability of the view is increased by the uniqueness of the old stone building and the picturesque architectural style. Although the adjacent switchyard adds to the noticeability of the site, the visual clutter and industrial appearance detract from the otherwise positive viewing experience. Approaching the site from the west, the switchyard is mostly blocked from view until past the powerhouse. Travelling in the westbound direction the switchyard is more prominent in the view. The penstock alignment and headwalls on the hillside can be seen but are not easily noticed while driving on Fern Road East. The visual intactness as seen from OV-2 is moderately high. The man-made elements of the site are not unexpected in this rural highway environment, and farms and ranches can be seen elsewhere along the roadway. As stated previously the switchyard is the moderating element of the intactness rating. The visual unity of the site is considered moderate because although many of the visual elements form a harmonious visual pattern, the switchyard contrasts with form, lines and colors of the scenic context.

### Viewer Response

The Kilarc powerhouse facility is visible along an approximately 800-foot section of Fern Road East. Approaching from either direction at a speed of 35 miles per hour, the powerhouse can be seen for a duration of approximately eight seconds. At the closest, roadway users pass within approximately 20 feet of the powerhouse. Many users of Fern Road East are local travelers, which because of their familiarity may have increased sensitivity to change in the visual environment. Although traffic counts are not available specifically at the powerhouse, average daily traffic (ADT) counts measured in 2009 on Fern Road East at Whitmore Road (340 ADT) and at Oak Run to Fern Road (230 ADT) indicate that a relatively low number of viewers pass by the powerhouse site each day. Fern Road East is not designated as a scenic roadway in county or state planning documents.



Viewer response at the Kilarc powerhouse facility (OV-2) is expected to be moderate. The close proximity of the view and the anticipated sensitivity regarding potential changes to the historic-looking powerhouse building are balanced by the short duration of the viewing time and the relatively low number of potential viewers.



### OV-2 Proposed Condition

The project proposes to leave the Kilarc powerhouse and switchyard in place. Most of the changes to the powerhouse would be conducted inside the powerhouse building and would not be visible from the East Fern Road East or the surrounding area. The project would secure the doors, windows and other openings in some manner to protect the building from vandalism and deterioration. As a result the most visible elements of the project at the Kilarc powerhouse would be the covering of windows and other openings. Windows would be covered with plywood cut to match the openings. The noticeability of these covered windows would depend mostly on the finish color and the type of construction used to affix the plywood. If the window coverings were not visually compatible with the natural stone architectural style, the intactness and unity ratings would be reduced a minor amount.

Resource Change (RC) Evaluation				OV-2
	Vividness (V)	Intactness (I)	Unity (U)	(=V+I+U/3)
Existing	5.8	4.1	4.1	4.7
Proposed	5.8	4.0	4.0	4.6
Visual Quality Difference =				<b>+0.1</b>

Viewer Response (VR) Rating	OV-2
Viewer Response (VR)	<b>4.0</b>

Visual Impact Rating	OV-2
Resource Change (RC)	-0.1
Viewer Response (VR)	--4.0

## Visual Impact Rating

OV-2

Visual Impact (See Note Below)

-2.0

$= [(Absolute\ value\ of\ RC) + VR] / 2$ , with plus or minus sign applied to the resulting numeral depending on whether the resource change (RC) was positive or negative

### OBSERVER VIEWPOINT 3 – From the Kilarc day use area



#### OV-3 Existing Condition

The existing visual quality of the Kilarc day use area is moderate. Because the site is typical of many other forested picnic facilities throughout the region, the memorability of the view is reduced. While in the day use area, potential long range views and distant vistas are mostly blocked by the existing trees in and surrounding the site. The day use area is moderately intact, with built elements such as the restrooms, picnic benches, trash cans and signage encroaching on the otherwise natural setting. In spite of their visibility, because of the mostly natural materials, textures and colors these built elements are somewhat visually compatible with the setting. As a result the unity rating of the view is moderately high.

#### Viewer Response

All visitors to the Kilarc Forebay pass by the day use area on their way to the pond. The *Recreational Resources Report* (PG&E 2007) found that an average of 2.5 persons at one time visit the Kilarc day use area, with most use occurring the summer months. The *Recreational Resources Report* indicated that picnicking is the predominant activity at the site. Although not all potential activities associated with picnicking are passive in nature, the opportunity exists for prolonged viewing of the surroundings. As described for visitors to the forebay, the location of the Kilarc day use area on the ridge top increases the anticipation and expectations regarding the viewing experience. The day use area is situated among the trees, and as a result views outward to the surrounding landscape are limited. Although the total number of visitors to the Kilarc day use area are relatively low compared to many other day use areas in the region, the overall viewer response rating is considered to be moderately high.



#### OV-3 Proposed Condition

With implementation of the project, the man-made elements of the day use area would be removed, and the site would be restored to a more natural condition. As a result the vividness, or memorability rating would be slightly reduced since the site would not be visually unique, and would look similar to the adjacent landscape. Both the unity and intactness ratings of the view would increase however due to the removal of the built elements and the resulting restoration to a more natural and visually compatible condition.

Although the area would be restored, the project proposes to close the facility and prohibit access to the day use area. As a result, these views would no longer be available to the public. The public's ability to enjoy of the type of visual amenities found at the Kilarc day use area would be dependent on the availability of similar views at other recreational sites in the area. Several comparable recreational viewing experiences are found in the vicinity. Lake Nora, Lake Grace, and McCumber Reservoir each provide recreational uses and associated visual enjoyment opportunities similar to those of Kilarc day use area.

Resource Change (RC) Evaluation				OV-3
	Vividness (V)	Intactness (I)	Unity (U)	(=V+I+U/3)
Existing	3.9	4.1	4.5	4.2
Proposed	3.8	5.2	5.5	4.8
Visual Quality Difference =				<b>+0.6</b>

Viewer Response (VR) Rating	OV-3
Viewer Response (VR)	<b>5.0</b>

Visual Impact Rating	OV-3
Resource Change (RC)	+0.6
Viewer Response (VR)	5.0
Visual Impact (See Note Below)	<b>+2.8</b>
<i>=[(Absolute value of RC) + VR] / 2, with plus or minus sign applied to the resulting numeral depending on whether the resource change (RC) was positive or negative</i>	



#### **OBSERVER VIEWPOINT 4 – From Kilarc access road looking toward the trash rake on the main canal**



#### **OV-4 Existing Condition**

The existing visual quality of the Kilarc access road approaching the facility is moderate. The views are generally limited to the fore- and mid-ground, although glimpses of longer-range vistas do occur. In the area of OV-4 shown here, the surrounding trees and other vegetation substantially block views beyond the site itself. At this location, a portion of the Kilarc main canal and the trash rake can be easily seen from the access road. The trash rake is prominent in the view and distracts from the otherwise mostly natural setting. The trash rake however is somewhat unique in terms of machinery, and does slightly add to the memorability of the view. However because of the noticeability of the contrasting forms of the man-made elements, the visual intactness and the unity ratings are reduced.

#### **Viewer Response**

Visitors to the Kilarc forebay and day use area pass by a portion of the main canal and the trash rake on their way to the facility. The *Recreational Resources Report* (PG&E 2007) found that an average of 5.4 people at one time visit the Kilarc forebay, and an average of 2.5 people at one time utilize the day use area, with most use occurring the summer months. These visitors reach the site by way of the access road. Part of the view while approaching the Kilarc facility is the trash rake and main canal. The trash rake can also be seen from portions of the day use area. As described for visitors to the forebay and day use area, because of the site's location on the ridge top, viewing expectations are somewhat increased for people using the access road approaching the site. However viewer sensitivity while traveling the access road is somewhat less than for viewers who have already arrived at the facility. The number of people who use the Kilarc facility and who pass the main canal and trash rake is relatively low compared to many other day use areas in the region, and the overall viewer response rating while travelling the access road near the site is considered to be moderate.



#### OV-4 Proposed Condition

The project proposes to fill-in the main canal, and remove the trash rake and most other built elements along the canal. The project would restore the topography and restore the area to a more natural condition. As seen from this viewpoint, the removal of the trash rake and other equipment would make the site slightly less memorable since the site would visually blend with the surroundings. At the same time, the view would be more intact and would appear as a unified natural landscape.

Regardless of the visual quality of the restored day use area, the project proposes to close the facility and prohibit access to the area. As a result, these views would no longer be available to the public. The public's ability to enjoy of the type of visual amenities found at the Kilarc day use would be dependent on the availability of similar views at other recreational sites in the area. Field review indicates that a number of similar recreational viewing experiences are found in the vicinity. Lake Nora, Lake Grace, and McCumber Reservoir each provide recreational uses and visual experiences comparable to Kilarc.

Resource Change (RC) Evaluation				OV-4
	Vividness (V)	Intactness (I)	Unity (U)	(=V+I+U/3)
Existing	3.8	3.9	4.0	3.9
Proposed	3.7	5.1	5.4	4.7
Visual Quality Difference =				<b>+0.8</b>

Viewer Response (VR) Rating	OV-4
Viewer Response (VR)	<b>4.0</b>

Visual Impact Rating	OV-4
Resource Change (RC)	<b>+0.8</b>
Viewer Response (VR)	<b>--4.0</b>



Visual Impact Rating	OV-4
Visual Impact (See Note Below)	<b>+2.4</b>
<i>=[(Absolute value of RC) + VR] / 2, with plus or minus sign applied to the resulting numeral depending on whether the resource change (RC) was positive or negative</i>	

## 1.7 SUMMARY OF PROJECT IMPACTS

**Table 1-4 Visual Impact Ratings as seen from each Observer Viewpoint**

Observer Viewpoint (OV)	Resource Change	Viewer Response	Visual Impact Rating
1	+0.6 (Low)	5.0 (Moderate High)	+2.8 (Moderate Low Positive)
2	-0.1 (Low)	4.0 (Moderate)	-2.0 (Moderate Low Negative)
3	+0.6 (Low)	5.0 (Moderate High)	+2.8 (Moderate Low Positive)
4	+0.8 (Low)	4.0 (Moderate)	+2.4 (Moderate Low Positive)

### 1.7.1 SUMMARY STATEMENT

The project proposes changes to existing features at numerous locations in the Kilarc and the Cow Creek Developments. The Kilarc Development includes features which are visible to the public such as the forebay, day use area, a portion of the main canal, and the powerhouse and switchyard facility. The remaining Kilarc elements and all of the proposed Cow Creek elements are located either on private property, away from public roadways, or are too remote to be seen by the viewing public. As a result, no visual impacts were identified relating to the Cow Creek proposal, or for the Kilarc locations not mentioned above.

Of the publicly visible Kilarc project elements such as the forebay facility, portions of the main canal, trash rack, and day use area, the proposed changes would result in a low to moderately-low improvement in visual quality. The improved quality would be due primarily to the removal of the built elements and the restoration of the sites to a more natural condition.

The project proposes however to completely restrict public access to the Kilarc forebay, day use area and related facilities as part of the decommissioning plan. Regardless of the physical changes proposed by the project, these elements would no longer be available for public viewing. As a result the loss of visual access to the Kilarc forebay would result an adverse visual impact for the current, regular users of the facility. This impact however would be offset by the relatively low number of users, the abundance of high-quality public views in the surrounding area, and by the proximity of other recreation spots providing comparable viewing experiences. Specifically, Lake Nora (approximately 22 miles from Whitmore), Lake Grace (approximately 20 miles), and McCumber Reservoir (approximately 27 miles) each provide recreational uses and associated visual enjoyment opportunities similar to Kilarc. The access and driving distance to Lake Nora, Lake Grace and McCumber Reservoir would be comparable to that of the Kilarc forebay for many local residents and visitors, depending on their specific origin of travel. In addition, because of the hillside grade and condition, the access road to Kilarc forebay and day use area can be impassible during certain times of the year, which is not necessarily the case at other recreational areas.

The Kilarc powerhouse facility along Fern Road East would remain visible from public viewpoints. Fern Road East passes immediately adjacent to powerhouse and switchyard. Existing views in this area are moderately high. The project would leave the powerhouse and switchyard in place. The windows, doors and other openings to the powerhouse would be secured which may result in a minor visual change to the exterior of the building. This change, if not designed and installed to be visually compatible with the building's architecture, would result in a slight reduction of visual quality at that location.

### **The project's effect on scenic vistas**

Scenic vistas throughout the project are mostly comprised of broad panoramas and distant views of mountains, valleys and other natural landscapes. Because of the generally forested condition of the areas surrounding the various project elements, most of the scenic vista opportunities are substantially limited or are non-existent. Glimpses of distant mountain peaks are available from certain locations at the Kilarc forebay area. These views, although minimal, do contribute somewhat to the visual experience of the site. The proposed physical changes to the forebay itself would not preclude long distance views, however the proposal to restrict access to the site would make these existing views unavailable to the public. This loss of views would result in a minor adverse effect to the scenic vista. Since the existing views are substantially limited, and other equal and higher quality long-range views are found throughout the surrounding region, the project's effect on scenic vistas would be minimal.

### **The project's effect on existing visual character and quality of the site and its surroundings**

The visual character of the region is considered of generally high quality. The combination of mature trees and other vegetation, varied and dramatic landforms, agricultural land use patterns, and creeks and lakes contribute to a generally cohesive landscape. The overall visual character of the project site and its surroundings is considered to be of moderately high quality. Existing trees and landform in the vicinity of the project sites are factors in defining the quality and character of the project areas. In most instances longer-range views from the project site to the surrounding landscape are substantially limited by vegetation and landform. Since the project itself relates to the removal of existing utility infrastructure, the sites themselves inherently include existing views of built elements. In many cases the built elements associated with the project visually contrast with the otherwise natural and undeveloped setting. Overall the project proposes to remove many of the existing built features and restore those areas to a more natural condition, which would increase the visual quality at those sites. The Kilarc powerhouse and switchyard would be left in place, which would maintain the existing visual character at that location. With closure of the Kilarc forebay and day use area, the public would no longer have access to views in those areas. However, since abundant opportunities exist in the area and region to enjoy similar visual character and quality, the project would have minimal effect on public views of the surrounding visual character.

### **Project light or glare affecting day or nighttime views in the area**

No new sources of light or glare are proposed as part of the project. Some existing light sources such as headlights along portions of the Kilarc access road, and some security and maintenance activity lighting would no longer be needed with implementation of the project.