APPENDIX E.8.1

TECHNICAL MEMORANDUM FOR VISUAL RESOURCES

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1.0 Introduction

This section addresses the visual resource analysis of the Enloe Dam Licensing Project Area. It includes a visual resources rating methodology and description of the Project Area, the identification of key observation points, and the potential impacts to visual resources.

2.0 Methodology

An ENTRIX land use planner conducted a site visit of the Enloe Dam Project Area on March 27-29, 2006. ENTRIX followed the Bureau of Land Management (BLM) Visual Resource Management (VRM) methodology to conduct the visual resources analysis. The BLM's VRM system consists of two phases: Inventory and Analysis. At the time of this report, the BLM had not conducted an official Inventory of the Project Area or any other area with similar landscape to the Project Area in Washington State. (Yaeger 2006) ENTRIX staff used the BLM methodology to conduct an inventory (i.e., identifying scenic quality and resource classes) and analysis of the Enloe Dam Project Area. This analysis was completed for the Project's two alternatives: No Build and Build Alternative with Demolition of the Enloe Powerhouse.

2.1 INVENTORY

The Inventory phase involves identifying the visual resources of an area and assigning them to inventory classes. The process has four steps, including Scenic Quality Evaluation; Sensitivity Level Analysis; Delineation of Distance Zones; and Visual Resource Classes and Objectives. The methodology follows the "BLM Handbook H-8410-1, Visual Resource Inventory".

- The *Scenic Quality Evaluation* is a measure of the visual appeal of the tract of land. Public lands are given an A, B, or C rating based on the apparent scenic quality determined by seven key factors: landform, vegetation, water, color, adjacent scenery, scarcity, and cultural modifications. Those areas with the most variety and

most harmonious composition have the greatest scenic value. The scenic quality is evaluated from several viewpoints. Scores reflect the evaluator's overall impression of the area.

- The *Sensitivity Level Analysis* is a measure of public concern for scenic quality. Public lands are assigned high, medium, or low sensitivity levels by analyzing the various indicators of public concern, including type of users, amount of use, public interest, adjacent land uses, special areas, and other factors such as special research or studies.

- The *Delineation of Distance Zones* is the identification of the Project Area's relative visibility from travel routes or observation points. These distance zones are "foreground-middlegroud", "background", and "seldom seen". The foreground-middleground zone is an area less than 3-5 miles away. The background zone is an area between 5-15 miles away. Areas that are not in the foreground-middleground or background zones are in the seldom seen zone.

- The *Visual Resources Classes and Objectives* are categories assigned to public lands with corresponding management objectives. The Visual Resource Classes serve as an inventory tool to portray the relative value of the visual resources and as a management tool to portray the visual management objectives. There are four classes (I, II, III, and IV). Class I is assigned to areas where a management decision has been made previously to maintain a natural landscape. Classes II-IV are assigned based on a combination of scenic quality, sensitivity level, and distance zones. The "BLM Visual Resource Inventory Manual H-8410-1" identifies prescribed objectives for each of the classes.

2.2 ANALYSIS

The analysis stage involves making a determination on whether the potential for visual impacts from proposed surface-disturbing activities or developments will meet the management objectives established for the area, or whether design adjustments will be required. A visual contrast rating is used for this analysis, which entails comparing project features with the major features in the existing landscape using the basic design elements of form, line, color, and texture. The steps in the contrast rating process, as outlined in "Manual 8431 – Visual Resources Contrast Rating", include:

- Obtaining a project description.
- Identifying VRM Objectives. Because there are no Resource Management Plan (RMP) approved objectives for the area, ENTRIX has used BLM VRM methodology to determine a VRM class that has corresponding VRM objectives.
- Select Key Observation Points (KOPs): These are the critical viewpoints, most commonly from traveled routes or views from communities. Factors considered in developing KOPs include angle of observation, number of viewers, length of time the project is in view, relative project size, season of use, and light conditions.
- Prepare Visual Simulations: Visual simulations were created from the KOPs using BLM visual simulation methodology.

- Complete contrast rating: The contrast rating was completed in the field from the KOPs, using the VRM contrast rating criteria. Areas considered as part of the contrast rating included form, line, color, and texture.
- Determining whether VRM objectives are met: The contrast ratings were compared with the objectives for the approved VRM Class.

3.0 Field Results

3.1 DESCRIPTION OF AREA

The project is located in northern, central Washington in the vicinity of the town of Oroville. The area is fairly remote, with Loomis-Oroville Road providing access to the Project Area. The region is characterized by moderately steep mountainous terrain incised by canyons. The Similkameen River flows through the region's canyons. The hills are a combination of rocky outcrops and large areas of shrub steppe vegetation spotted with evergreen trees. In the spring, summer, and fall, colors in the landscape are primarily brown hues dotted with dark green vegetation. Snow is common in the winter months. Textures in the landscape include rocks, sagebrush, trees, and water. Elevations in the project area range from 3,600 feet at the summit of nearby mountains to 1,000 feet at the valley floor near Oroville.

The overall landscape is a combination of natural and human-made elements. The natural elements include the mountains, sparse vegetation (mostly evergreens), and the Similkameen River snaking though the canyon. Several human-made elements are included in the landscape of this region. These include a vineyard, golf course, and residences approximately two miles north of Oroville. Loomis-Oroville Road, which is located on the canyon rim above the Similkameen River, roughly follows the river's twists and turns. Transmission lines run along the canyon walls and rim. The Enloe Dam and existing Powerhouse are located on the west side of the Similkameen River approximately 3 miles northwest of Oroville. Associated dam structures on the west side of the river include stave penstocks connecting the dam to the powerhouse and surge tanks adjacent to the powerhouse. The Burlington Northern Railroad grade runs roughly parallel to the west side of the river. Human-made elements on the east side of the river include: a bridge remnant (it once connected the east side of the river to the powerhouse); two small outbuildings; the concrete foundation of the 1906 powerhouse; two dirt access roads leading from Loomis-Oroville Road to the dam site; and a concrete irrigation ditch. The town of Nighthawk, approximately 6 miles west of Enloe Dam, is a historic mining community comprised of wood-frame buildings (residences and associated agricultural buildings) along a two-track dirt road. The Project Area is not visible from Nighthawk.

For visual resources, therefore, the topography of the Similkameen River canyon defines the Project study area. The areas to the east and west that extend beyond the peaks of the canyon are visually separate from the areas within the canyon where the

project is located. The overall viewshed of the Project, not including the transmission line, is confined to the canyon itself and the canyon rims and/or peaks.

Visitation to the Enloe Dam project area is largely confined to travelers along Loomis-Oroville Road going from Oroville to Nighthawk, river raft and fisheries recreationalists, as well as Native Americans who attach cultural value to its natural setting and associated fishing grounds.

4.0 Inventory of Enloe Dam Project Area

4.1 SCENIC QUALITY EVALUATION

The numeric rating for scenic quality for the project area is based on methodology outlined in the BLM "Manual 8410 – Visual Resource Inventory". The Scenic Quality Evaluation is a measure of the visual appeal of a tract of land. Public lands are given an A, B, or C rating based on the apparent scenic quality determined by seven visual qualities: landform, vegetation, water, color, influence of adjacent scenery, scarcity, and cultural modifications. All but the cultural modifications are scored on a scale of 5 to 1 with a 5 representing the most dramatic visual presence and 1 the least. Cultural modifications are scored on a scale from 2 to 4 based upon their ability to harmonize or detract from the surrounding landscape. Those areas with the most variety and most harmonious composition, therefore, have the greatest scenic value.

Scores that are given to each visual quality reflect the evaluator's overall impression of the area and can range from a high of over 19 (an A-rating), 12-19 (B-rating), or under 11 (C-rating). The seven scenic qualities within the Project Area received the following scores: landform (3); vegetation (1); water (3); color (1); influence of adjacent scenery (0); scarcity (1), and cultural modifications (2). The total score was 11 and the Project Area thus earned a "C" or relatively low scenic quality rating.

4.2 SENSITIVITY LEVEL ANALYSIS

This analysis measures public concern for scenic quality. Public lands are assigned a high, medium, or low sensitivity level by analyzing the various indicators of public concern, including type of users, amount of use, public interest, adjacent land uses, special areas, and other factors.

The types of users in the Project Area include travelers on Loomis-Oroville Road and recreators on the Similkameen River. Okanogan County District employees were not included in this evaluation. Recreators in the Project Area would have a high visual sensitivity, whereas travelers would have a low visual sensitivity. The amount of use of the Project Area is seasonally driven for recreators with visitation largely occurring between June and September. The Recreational Use Survey Report that was completed for the Project Area (see Appendix E.7.1) notes that visitors average 1,378 user days in the Project Area during the peak recreation season. Of all the visitors

surveyed, “sightseeing” accounted for 12.4% of area use with boating (18.1%), mining (30.5%), shore fishing (7.3%) and hunting (6.8%) representing other popular activities. The Project Area is also of interest to the Colville Confederated Tribes who attach cultural significance to natural landscape components as well as the fisheries. Other factors to consider are the number and diversity of human-made objects in the landscape, including the Enloe Dam and powerhouse, the BNSF railroad grade, and Loomis-Oroville Road.

The Similkameen River near the Project Area is not considered a “Special Area” as it has not been recognized as a Natural Area, Wilderness Area, Wild and Scenic River, Scenic Area, or is associated with Scenic Roads or Trails and Areas of Critical Environmental Concern. Given these circumstances, the overall visual sensitivity level analysis would be considered “medium” for the Project Area. So while not a Special Area, the Project Area is moderately used by the public who has expressed some interest in its visual qualities.

4.3 DELINEATION OF DISTANCE ZONES

The delineation of a distance zone involves identifying the Project Area’s relative visibility from travel routes or observation points. These distance zones are “foreground-middleground”, “background”, and “seldom seen”. The foreground-middleground zone is an area less than 3-5 miles from viewers. The background zone is an area between 5-15 miles away. Areas that are not in the foreground-middleground or background zones are in the seldom seen zone. Visitors to the Project Area largely consist of travelers on Loomis-Oroville Road and recreators. In evaluating the distance zones for each viewer type the following results were observed:

- Travelers on Loomis-Oroville Road: foreground-middleground zone
- Similkameen River recreators: foreground-middleground zone

Each set of viewers would be at a distance of no more than 3 to 5 miles from the Project Area.

4.4 VISUAL RESOURCES CLASSES AND OBJECTIVES

The visual resource inventory class was determined using Illustration 11 from the BLM Manual 8410 – Visual Resource Inventory. Given the visual sensitivity level of “low” and the scenic quality of “C”, the resulting class would be IV.

Therefore, the Enloe Dam Project Area would be a “Class IV”. The Objectives for Class IV include “to provide for management activities which require major modifications of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be the major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating basic elements” (Manual H-8410-1 – Visual Resource Inventory).

4.5 SUMMARY

Using the BLM VRM Methodology outlined in "Manual H-8410-1 – Visual Resource Inventory", the Enloe Dam Project Area is determined to have the following characteristics:

Scenic Quality = C
Sensitivity Level = Low
Inventory Class = IV

5.0 Analysis of Enloe Dam Project Area

5.1 GENERAL PROJECT DESCRIPTION

Existing Power Generation Equipment and Buildings

Public Utility District No. 1 of Okanogan County (District) is developing an application for a license under the Federal Power Act to restore hydroelectric power generation at Enloe Dam. Enloe Dam is a 315 foot long concrete gravity arch dam structure with a hydraulic height of 54 feet. The spillway is a 276 foot long, ungated overflow section that spans the center of the dam. The spillway crest has pipe sockets at 4-foot centers set in the crest for installation of flashboard type crest gates to a height of 5 feet.

A power intake structure near the right (west) abutment has intakes for two 7 foot diameter wood stave penstocks. The powerhouse which is located on the west bank of the river about 850 feet downstream of the dam initially once contained two hydroelectric turbine-generator units. Both units were operated by the Washington Water Power Company until 1945 when the Project was acquired by Public Utility District No. 1 of Okanogan County. Power generation ceased in 1958.

Enloe Dam remains in place; one penstock and both surge tanks also remain. The powerhouse also remains but is in poor condition and has been vandalized. A suspension bridge that provided foot-access across the river to the powerhouse has been removed.

The railroad that once provided freight access to the powerhouse on the west side of the river has also been removed; however there is single-lane vehicle access along the old railroad grade.

Project Modifications to Existing Aesthetic Resources

In order to determine whether the Project meets the objectives of the VRM, the following section describes proposed modifications to the visual qualities (namely landform, water, vegetation, and structures) within the Project Area. For the purposes of the visual resources analysis, this section describes the modifications to the Project Area that will occur due to the proposed construction of the Project on the east bank.

Project modifications of existing aesthetic resources principally come in the form of new structures related to hydro-electric power generation. The proposed locations for the new Project improvements are shown as an overlay to the aerial photograph, in Figure 1. These new facilities include:

- the introduction of new five-feet high crest gates on Enloe Dam;
- headworks that include an approach channel, river intake, and intake canal;
- penstock intake
- two penstocks
- powerhouse
- and tailrace

Other Project modifications come in the form of an expansion of surface water area in the impounded section of the Similkameen River to the north of Enloe Dam. Another option that may be exercised could be the stabilization of the existing historic powerhouse, water tower, and penstock. All of these modifications are more specifically explained below.

Specific Project Features: Landform and Water

The color of the exposed soils, and bedrock, can be characterized as pale, warm grays ranging to medium warm grays, and warm yellow-browns. These colors will not be substantially modified by the Project.

The anticipated water coloration of the reservoir is not expected to change greatly from the existing blues and greens seen today. Operation of the Project, through the installation of the crest gates, will result in a greater surface area of water within the reservoir. The existing average size of the impoundment area is 60.1 acres that is spread along two miles of the river. During normal operation of the Project, the water surface area would increase to 76.6 acres spread over a length of 2.4 miles. This amounts to an approximate rise of three feet of water within the impoundment area during normal operation.

The final landform appearance (grades, slopes, drainage patterns) is expected to remain similar to the existing landform appearance, in as much as the approach channel, river intake, and intake canal occupy the existing level ground adjacent to the

dam's east abutment, and the powerhouse, penstocks, and tailrace will be placed within the existing canyon below the dam.

Specific Project Feature: Vegetation

The extent of clearing and modification to existing vegetation is expected to be minor for both the construction of the new powerhouse and intake as well as the demolition of the historic powerhouse. Vegetative stabilization of disturbed areas will be undertaken where necessary to avoid excessive erosion.

Specific Project Feature: Structures

The Project intends to utilize the existing dam and reservoir to impound water for diversion through the power plant. On the dam, flashboards would be reintroduced by retrofitting five-foot high crest gates. The crest gates are a steel flap gate that is lifted by air bladders installed between the gate and the spillway crest. The crest gates will result in greater no-spill periods. At times when streamflow exceeds the capacity of the new plant, water would be spilled over the existing spillway.

The headworks, situated just north of the dam on the east side of the river will include an approach channel, river intake, and intake canal. The short approach channel will be situated as close to the dam of the possible and would be approximately 86 wide at its mouth. The river intake, which controls flow from the approach channel, would be a concrete trashrack structure 86 feet long and 20 feet wide with six bays, each with a sloping trashrack. The intake canal, which carries inflow from the river, would taper from 86 feet wide at the river intake to about 30 feet wide at the penstock intake.

The penstock intake would be a 35 foot long by 30 foot wide reinforced concrete gravity type structure founded on bedrock and connected to two steel penstocks. Two vertical-lift wheeled gates, approximately 10.2 feet high by 8.5 feet wide, would be provided for emergency closure. An enclosure building would be erected on top of the intake structure. Much of the area near the proposed headworks and penstock intake is currently lightly vegetated and relatively flat and thus aesthetically undistinguished.

Two above-ground penstocks would be 8.5 feet diameter and approximately 150 feet long, would slope steeply from the intake to the powerhouse. Concrete saddles will support the penstocks, while concrete anchor blocks will be erected at bends in the penstocks. The two penstocks lead to the new powerhouse that would be situated in an alcove about 230 feet downstream from the east abutment of the Enloe Dam. The reinforced concrete powerhouse structure would be about 60 feet long and 30 feet wide. The reinforced concrete substructure would be founded on bedrock. The reinforced concrete walls will rise to El. 1010 feet and then transition to walls of structural steel and insulated metal cladding. The repair bay and laydown area would be located at the east end of the powerhouse with a floor elevation of approximately El. 995 feet. While introducing a linear element to the rocky contours of the east bank, this structure, as well as the penstocks, will be minimally visible from Key Observation Points #3 and #4.

The tailrace channel will convey water a distance of about 180 feet from the powerhouse to the Similkameen River. It will be an unlined channel excavated in rock by controlled blasting techniques. The width would taper from about 37 feet at the powerhouse to approximately 20 feet at a distance of 70 feet downstream from the powerhouse. Downstream of this point, to the river, the channel width would be 20 feet. The visibility of this new linear feature would be minimal due to its overall location, low profile and unlined construction.

Along with the introduction of new structures into the visual environment, some existing buildings will be removed. On the west side of the Similkameen River and below Enloe Dam, the historic Enloe Powerhouse, associated surge tanks, and the lone surviving penstock would be demolished. The demolition of these facilities would remove a prominent human-made structure from the Project Area. While a historic resource would be removed, the demolition would actually improve the human-made visual environment by removing the most dilapidated portions of the structure. The foundation of the powerhouse and surge tanks, which accounts for about 50 percent of the visible portions of the building, would be retained. As noted in the Landform section above, the removal of the historic powerhouse would enhance the visibility of the rocky outcrop behind the building.

There is also an option to stabilize the existing Enloe Powerhouse, surge tanks, and penstock. This would include retaining the brick walls and metal window mullions, removing all remaining glass fragments in windows, cleaning up building debris, and removing the roof of the powerhouse and retention of the other structures. This option may improve the human-made visual environment by removing debris and reducing the angular profile of the powerhouse.

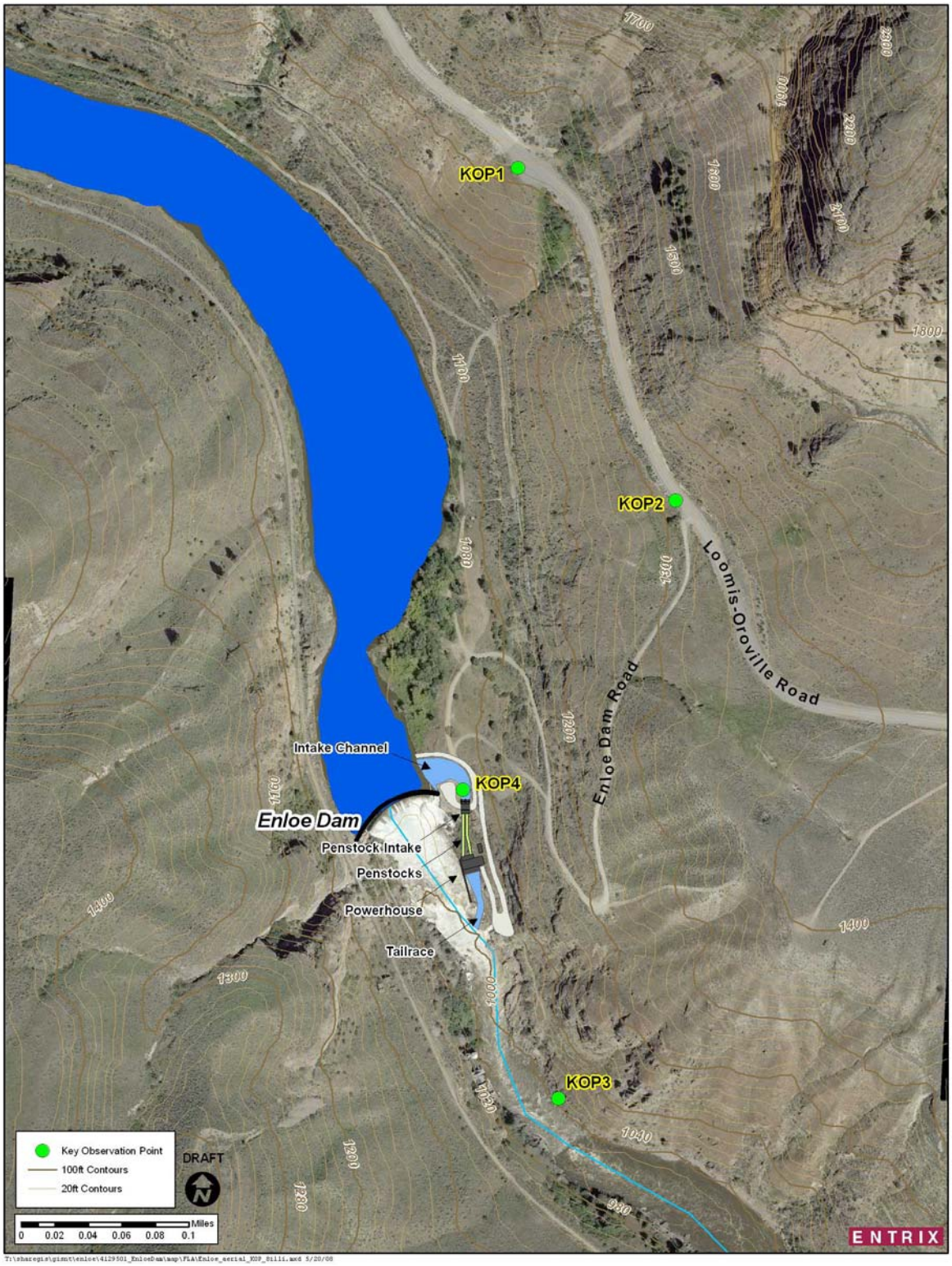

Figure 1: Aerial mapping with overlay showing proposed improvements and locations of the four Key Observation Points (KOP).

5.2 VRM OBJECTIVES

As stated above in the Inventory section, the VRM objectives for a Class IV landscape include:

- Level of change to landscape can be high
- Management activities may dominate landscape
- Management activities may be major focus of viewer attention
- Minimize impact of management activities through careful location, minimal disturbance, and repeating basic elements.

To ascertain whether the objectives of this VRM class are met, ENTRIX analyzed viewsheds from three Key Obervation Points or KOPs. These three viewpoints are along commonly traveled routes or areas of public use. Factors considered in the choice of these sites include the angle of observation, number of viewers, length of time the Project is in view, relative Project size, season of use, and light conditions.

5.3 KEY OBSERVATION POINTS

There are four key observation points (KOPs) in the project area. The KOPs were documented in the field using GPS, with locations marked on Figure 1. These KOPs were chosen because they are the most critically traveled routes or observation points in the project area. The identified viewer user groups include travelers along Loomis-Oroville Road and recreators on the Similkameen River. Viewsheds for each of the Key Observation Points (KOPs) were modeled using a geographic information system and a three-dimensional digital elevation model. Visible areas for each KOP are shown with a tone overlaid on the topographic map, on Figures 2, 3, 4 and 5. The project area is not visible from much of the surrounding area due to the topography. The dam and powerhouse are located at the base of steep rock walls

KOP#1: Loomis-Oroville Road – Travelers on Loomis-Oroville Road will see the Project Area for a relatively short-time in the foreground-middleground. The project elements that will be added to the existing human-made landscape will only partially (if at all) be viewed by the travelers. The water level at the dam is expected to change, which would also be viewed by the travelers. Visibility of the Project Area is generally unobstructed to travelers on Loomis-Oroville Road; however, the topography of the Project Area (it is located in a canyon) makes it difficult for the travelers to view. The simulation for KOP #1 shows the long view to the project area, where only a small glimpse of the inlet channel is possible, due to topographic position.

KOP#2: Overlook from Loomis-Oroville Road approximately three miles northwest of Oroville – People stopping at the overlook on Loomis-Oroville Road will have opportunities for extended views of the Project Area. From this viewpoint, the dam is visible as are the existing surge tanks and the roof of the old powerhouse. Due to the topography, a new powerhouse on the east side of the river would be either not visible to this viewer, or only a small portion of the roof would be visible. Changes in water

levels at the dam would be visible. The Project Area is generally unobstructed, however only the inlet channel structure would clearly be in view.

KOP#3: Rocks below Enloe Dam on Similkameen River – Recreators on the river would have extended views of the Project Area. From this viewpoint, changes to the landscape would include the construction of the new powerhouse on the east side of the river and changes in the water level. The project components would add to the existing human-made elements in the Project Area, which include the existing powerhouse and dam. Visibility of the Project Area would be partially obstructed by the existing topography.

KOP #4: Overlook near Enloe Dam. This perspective is from the work area immediately east of the Enloe Dam. From this viewpoint, the dam and existing penstock are clearly visible. Changes to the landscape prompted by the Project would include the construction of the intake canal in the immediate foreground with the safety fencing and removal of the penstock on the far side of the dam. Views from this point to the south towards the new powerhouse, penstocks, and tailrace would be partially obstructed by the existing topography.

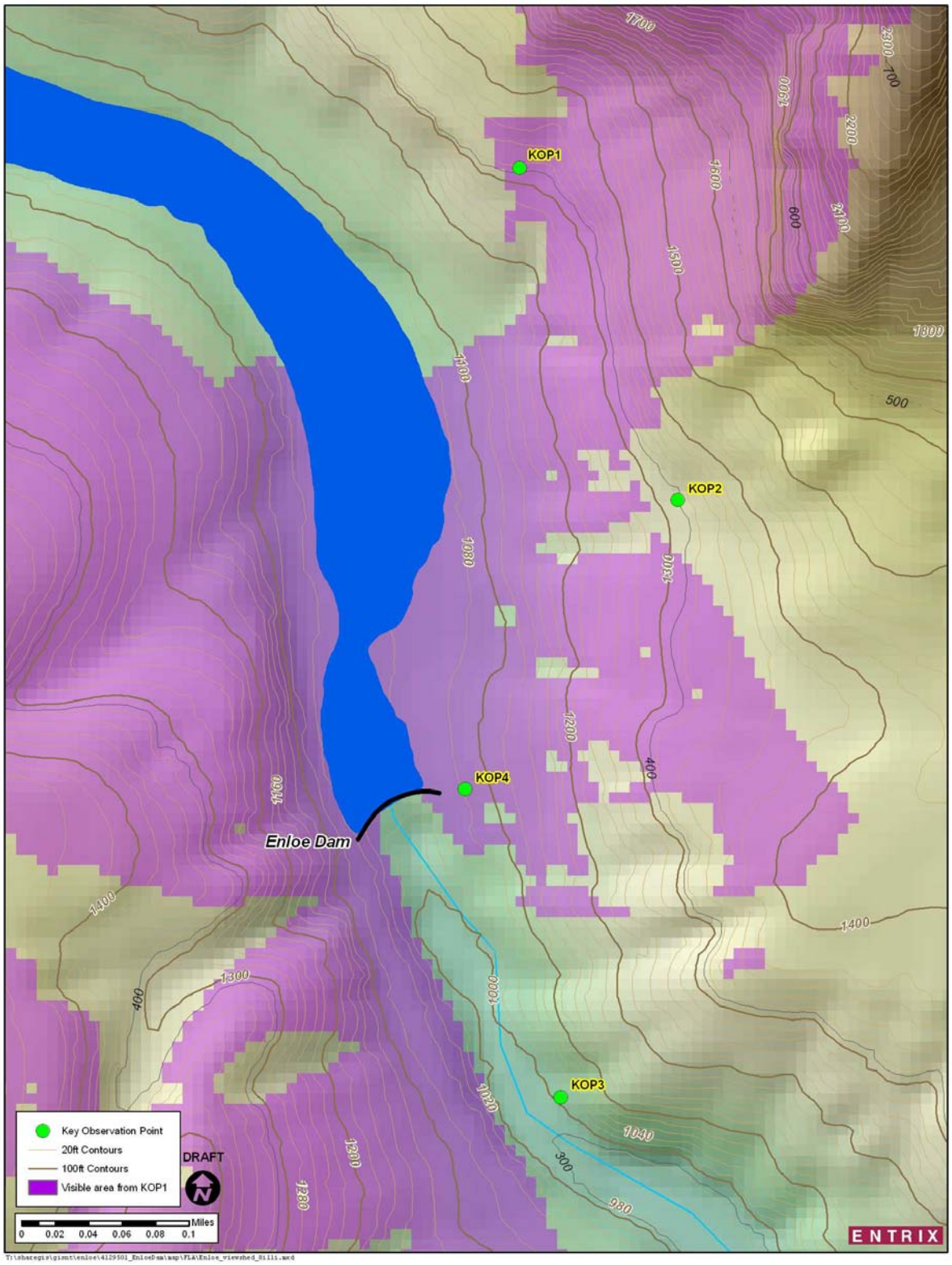

Figure 2: Areas Visible from Key Observation Point 1 (Viewshed)

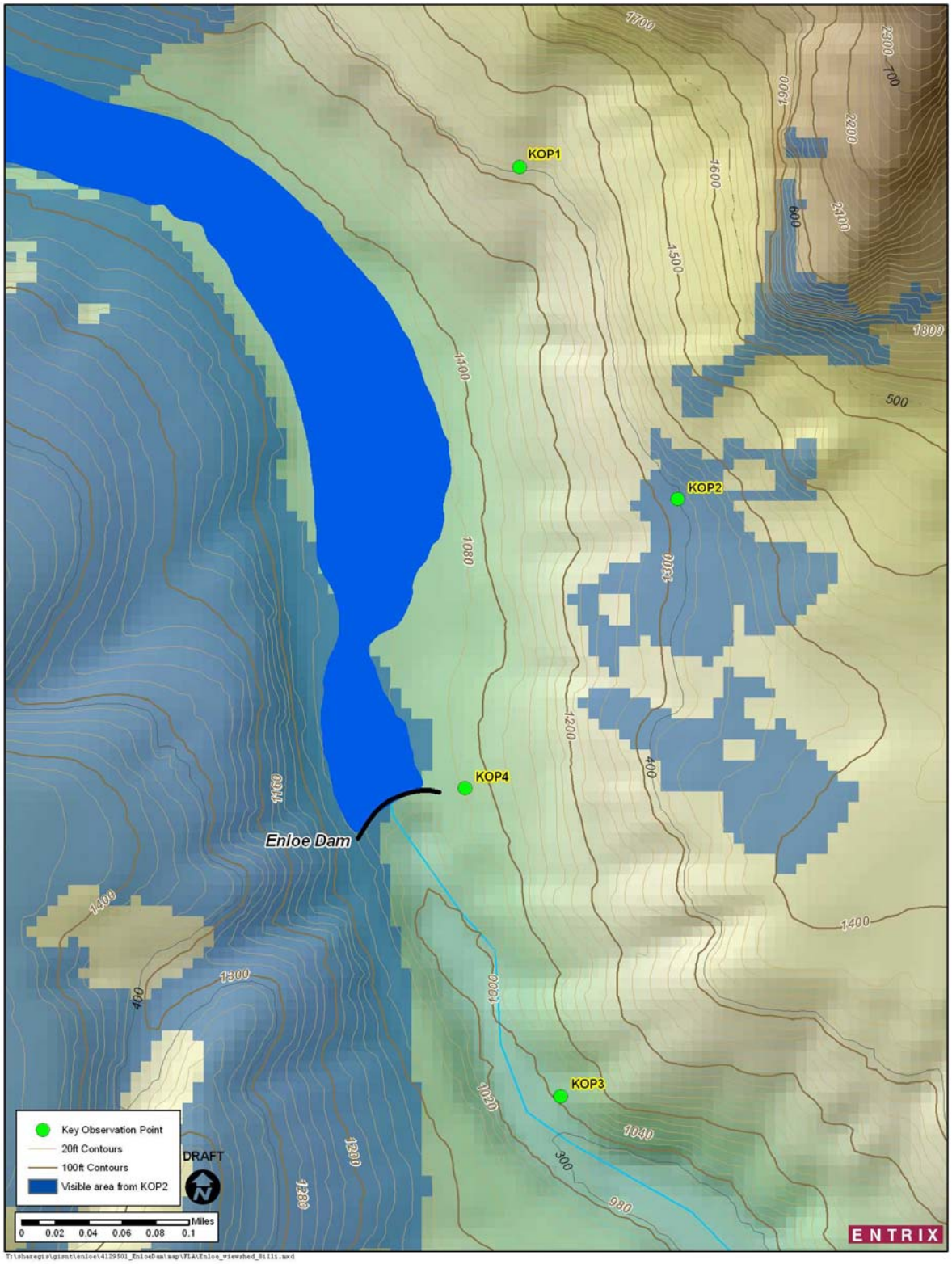

Figure 3: Areas Visible from Key Observation Point 2 (Viewshed)

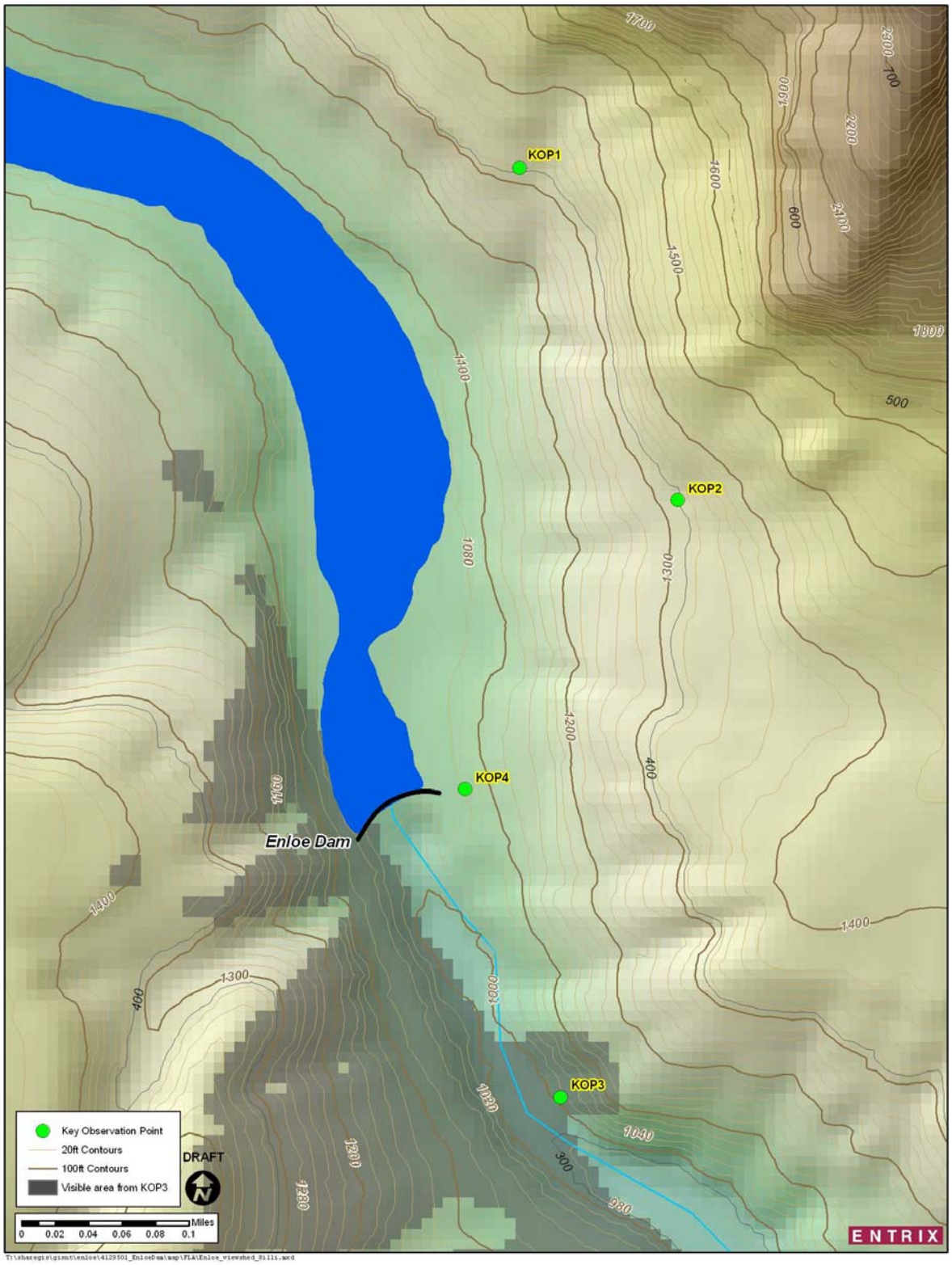

Figure 4: Areas Visible from Key Observation Point 3 (Viewshed)

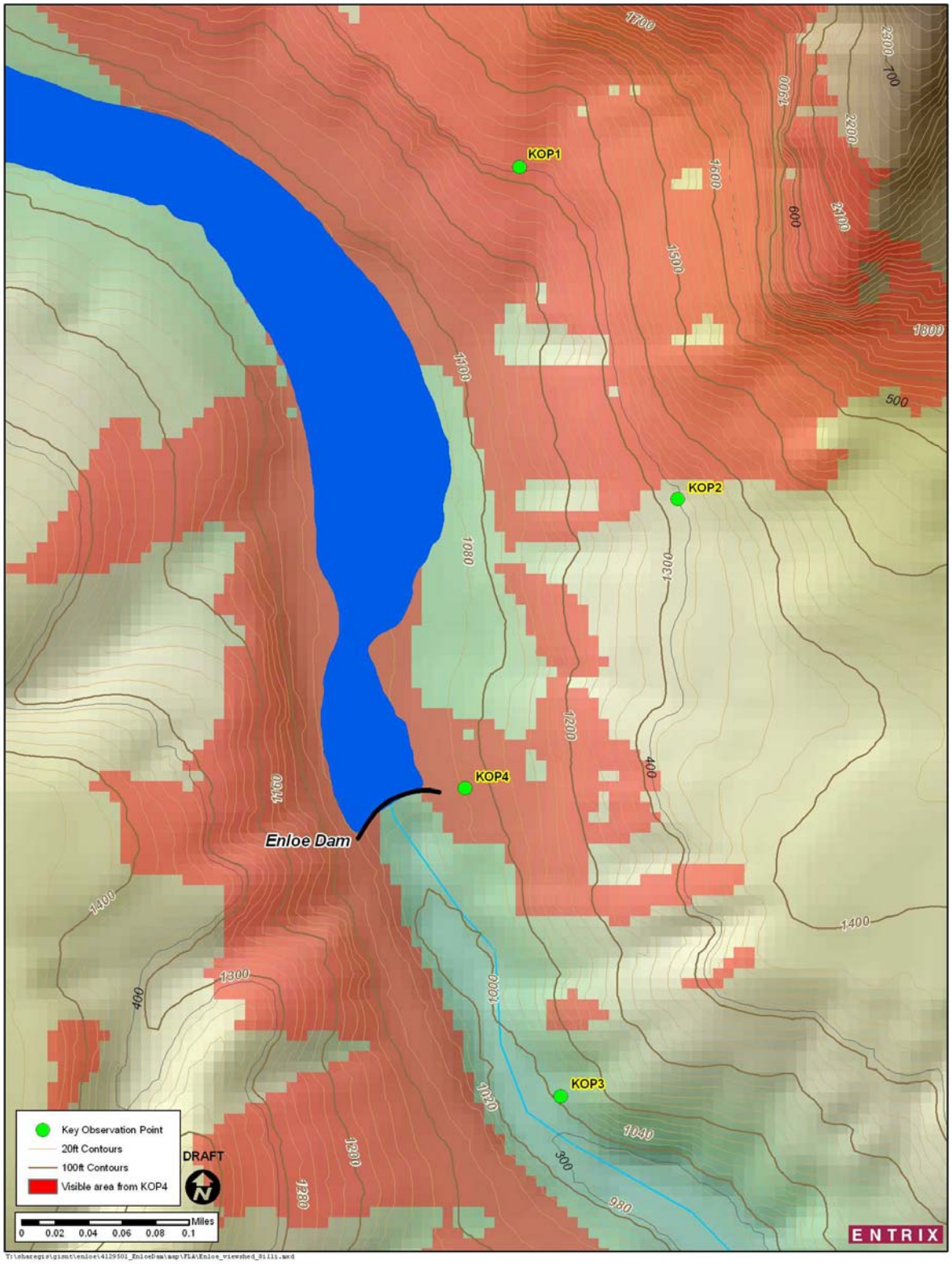

Figure 5: Areas Visible from Key Observation Point 4 (Viewshed)

5.4 VISUAL SIMULATIONS

As per BLM VRM methodology, visual simulations were created from the four identified Key Observation Points in the project area. The photo simulations show the proposed project facilities as seen from the key viewer groups and also depict an option that results in the stabilization of the existing powerhouse. Digital photographs taken from the Key Observation Points serve as the base image for the photo simulations.

Figure 6: KOP#1: Travelers view from Loomis-Oroville Road looking SW (EXISTING)

Figure 7: KOP#1: Travelers view from Loomis-Oroville Road looking SW (PROPOSED)

Note the inlet channel in the middle ground to the left side of the existing dam and pool. Most of the improvements are not visible from this location, due to their topographic position, in the canyon of the Similkameen River, below the dam.

Figure 8: KOP#2: Overlook from Loomis-Oroville Road looking SW (EXISTING)

Figure 9: KOP#2: Overlook from Loomis-Oroville Road looking SW (PROPOSED)

Note the inlet channel in the middle ground to the left side of the existing dam and pool as well as the removal of the tank and powerhouse near the ridgeline in the left middle ground. Most of the improvements are not visible from this location, due to their topographic position, in the canyon of the Similkameen River, below the dam.

Figure 10: KOP#3A: Recreators' View of Similkameen River looking NW (EXISTING)

Figure 11: #3A: Recreators' View on Similkameen River looking NW (PROPOSED)

The proposed powerhouse is mostly obscured by the existing topography, yet the upper portion of the concrete structure, and the metal cladding and roof above (to elevation 1017) can be seen above the existing rock wall of the canyon, on the right.

Figure 12: KOP #3A: Recreators' View of Similkameen River with no spill over dam looking NW (PROPOSED)

Figure 13: KOP#3B: Recreators' View on Similkameen River looking West towards old powerhouse (EXISTING)

Figure 14: KOP #3B: Recreators' View on Similkameen River looking West (PROPOSED)

Taken from the same point as KOP #3A, KOP #3B shows the visual impact of removing the old powerhouse and surge tanks. The following simulation on page 25, shows the visual impact of stabilizing the old powerhouse and surge tanks.

Figure 15: KOP #3B: Recreators' View on Similkameen River looking West towards historic powerhouse showing stabilization option

Figure 16: KOP #4: View on Similkameen River looking SW along crest of Enloe Dam (EXISTING)

Figure 17: KOP #4: View on Similkameen River looking SW along crest of Enloe Dam (PROPOSED)

This KOP is actually taken from within the intake canal and shows a conjectural safety fence in the foreground.

Figure 18: KOP #4: View on Similkameen River looking SW along crest of Enloe Dam showing crest gates deployed with no spill. Security fence removed for clarity. (PROPOSED)

6.0 Project Impacts Upon Visual Resources

The principal measure for assessing impacts to visual resources lies in the BLM's use of a "contrast rating." Using the information from the visual resources inventory and analysis, a contrast rating is used to summarize changes to a landscape's existing condition. For the Project Area, there are two types of expected impacts: Project operation impacts and Project construction impacts.

6.1 PROJECT OPERATION IMPACTS

From a visual resource perspective, project operations will have minimal visual impacts as the Similkameen River's seasonal flow fluctuations will not be changed with the exception of a longer period of inundation due to crest-gate operation and an increase in the surface area of water within the reservoir. The total surface area normally inundated will increase by about 27% due to operation of the crest gate, but the increase will occur within a long narrow corridor, and the increase will largely occur at its upstream end. Other than extending the upstream extent of inundation, operation of the facility will have minimal impacts upon the existing visual resources within the Project Area. The installation of the crest gates will have a minimal visual impact upon the dam, but the use of the gates will reduce the periods when spill is permitted over the dam, thus affecting water flows below the dam. Less water below the dam will reveal more of the rocky outcrops that would be otherwise submerged. These changes in appearance already occur during seasonal changes in water flow; therefore the visual effect is minimal.

6.2 PROJECT CONSTRUCTION IMPACTS UPON VISUAL RESOURCES

As it currently exists, the historic Enloe Powerhouse situated on the west side of the Similkameen River is dilapidated and inoperable resulting in the need for a new powerhouse building in addition to a new approach channel, intake, penstock, and tailrace on the east side of the existing Enloe Dam. The two alternatives for construction of the new powerhouse include the following:

- No Build
- Build Alternative with Demolition of Enloe Powerhouse

6.3 CONTRAST RATING FOR PROJECT ALTERNATIVES

The degree of visual change is measured through a contrast rating. Based upon the criteria of form, line, color, and texture, this analysis uses the photo-simulations as guides for evaluating changes to the landscape. This comparison assists in determining whether Project features and alternatives meet the VRM objectives. Contrast ratings are noted as being none, weak, moderate, and strong depending on the degree of change. The contrast rating is provided below from each of the KOPs.

Table 1: Contrast Ratings for Key Observation Points (KOP): No Build

Viewpoint	Landform/Water Features	Structural Features
KOP #1	None	None
KOP #2	None	None
KOP #3	None	None
KOP #4	None	None

Table 2A: Contrast Ratings for Key Observation Points (KOP): Project Build Alternative with Demolition of Enloe Powerhouse

Viewpoint	Landform/Water Features	Structural Features
KOP #1	Weak	Weak
KOP #2	Weak	Weak
KOP #3	Moderate	Moderate
KOP #4	Moderate	Moderate

Table 2B: Contrast Ratings for Key Observation Points (KOP): Project Build Alternative with Option for Stabilization of Enloe Powerhouse

Viewpoint	Landform/Water Features	Structural Features
KOP #1	Weak	Weak
KOP #2	Weak	Weak
KOP #3	Moderate	Moderate
KOP #4	Moderate	Moderate

The lack of a contrast rating for all features in Table 1 reflects the lack of changes to existing aesthetic resources within the Project Area for this alternative.

The moderate contrast rating for both the landform/water features as well as the structural features visible from KOP #3 and KOP #4 in Table 2 reflects a limited view of the new powerhouse that introduces new linear components and forms to the structural and natural elements of the landscape.

6.4 PROJECT IMPACTS, VRM OBJECTIVES, AND MITIGATION MEASURES

As stated above in the Inventory section, the VRM objectives for this Class IV landscape include:

- Level of change to landscape can be high
- Management activities may dominate landscape
- Management activities may be major focus of viewer attention
- Minimize impact of management activities through careful location, minimal disturbance, and repeating basic elements.

The no build alternative would have no impact on visual resources within the project, although man-made visual resources within the project area would continue to slowly degrade. All VRM objectives would therefore be met.

Given the nature and appearance of the proposed improvements for the build alternative described above, the Visual Resource Management (VRM) objectives for Classes I, II and III can be met. While no serious adverse visual impacts would be caused by Project features, the location of a new Powerhouse and related structures will introduce new human-made elements into the project area. This new construction, however, will occur in areas that are not prominent and largely hidden by topography and vegetation. In lieu of constructing a new facility and project operation, mitigation, enhancement, and protection measures would be proposed that are consistent with VRM objective 4. This might include the careful citing of the structural components of the project, an attention to the colors and textures of building materials that minimize visual dissonance, and introducing random, if sparse, groupings of native vegetation that will aid in blending the Project with the landscape. These types of design considerations for the new facilities would assist in minimizing any visual intrusions introduced by the Project.

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