

# **COVER SHEET**

**FEDERAL ENERGY REGULATORY COMMISSION**

**DRAFT ENVIRONMENTAL IMPACT STATEMENT  
FOR THE BIG CREEK ALP PROJECTS  
Docket Nos. P-67, 2175, 2085, and 120**

**Appendix B  
Capital and Annual Costs of Measures for the Big Creek  
ALP Projects and the Portal Project  
Pages B-1 to B-38  
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## **APPENDIX B**

### **CAPITAL AND ANNUAL COSTS OF MEASURES FOR THE BIG CREEK ALP PROJECTS AND THE PORTAL PROJECT**

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In this appendix, we present costs of environmental measures associated with the Big Creek ALP Projects (tables B-1 through B-4). In addition, although the Portal Project (FERC No. 2174) is not part of this proceeding, certain measures included in the Big Creek ALP Projects Settlement Agreement pertain to Camp 61 Creek. Camp 61 Creek provides inflows to the Portal Project, which are diverted from SFJR upstream of the Mammoth Pool reservoir. Table B-5 presents costs of environmental measures associated with the Portal Project.

Table B-1. Summary of capital costs, operations and maintenance costs, annualized costs and reduction in annual energy benefits for measures included in the Proposed Action and Proposed Action with Staff Modification alternatives for the Big Creek Nos. 2A, 8 and Eastwood Project. (Source: SCE, 2007a, and staff)

Row No.	Environmental Measure	Capital Cost	Annual O&M Cost	Reduction in Annual Energy Benefits	Annualized Cost	Discipline	Staff Adopting?
1	Implement new minimum instream flow releases and channel riparian maintenance flow releases <sup>a</sup>	\$0	\$7,540	\$2,508,230	\$2,515,770	Aquatic	Yes
2	Maintain existing and new gaging stations	\$0	\$94,200	\$0	\$94,200	Aquatic	Yes
3	Install minimum flow devices and gaging equipment at Dam No. 5	\$1,808,810	\$0	\$0	\$223,230	Aquatic	Yes
4	Install minimum flow devices and gaging equipment at Mono Creek Diversion	\$1,085,290	\$0	\$0	\$133,940	Aquatic	Yes

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<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
5	Make modifications needed to release MIFs at Bolsillo Creek Diversion	\$72,350	\$0	\$0	\$8,930	Aquatic	Yes
6	Make modifications needed to release MIFs at Camp 62 Creek Diversion	\$72,350	\$0	\$0	\$8,930	Aquatic	Yes
7	Decommission Crater Creek Diversion	\$337,620	\$0	\$0	\$41,670	Aquatic	Yes
8	Decommission Tombstone Creek Diversion	\$549,620	\$0	\$0	\$67,830	Aquatic	Yes
9	Decommission North Slide Creek Diversion	\$18,260	\$0	\$0	\$2,250	Aquatic	Yes
10	Decommission South Slide Creek Diversion	\$7,300	\$0	\$0	\$900	Aquatic	Yes

<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
11	Decommission Pitman Creek Domestic Diversion	\$16,990	\$0	\$0	\$2,100	Aquatic	Yes
12	Decommission Snow Slide Creek Domestic Diversion	\$16,990	\$0	\$0	\$2,100	Aquatic	Yes
13	Implement temperature monitoring programs	\$0	\$30,410	\$0	\$30,410	Aquatic	Yes
14	Implement flow monitoring programs	\$0	\$131,870	\$0	\$131,870	Aquatic	Yes
15	Implement fish monitoring programs	\$0	\$10,860	\$0	\$10,860	Aquatic	Yes
16	Implement riparian monitoring programs	\$0	\$14,160	\$0	\$14,160	Terrestrial	Yes
17	Implement Jackass Creek monitoring programs	\$0	\$16,110	\$0	\$16,110	Aquatic	Yes

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B-5

<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
18	Implement the sediment management plan at small diversions	\$0	\$6,080	\$0	\$6,080	Aquatic	Yes
19	Implement the sediment management plan at Dam No. 5 and Mono Creek	\$0	\$5,040	\$0	\$5,040	Aquatic	Yes
20	Monitoring of spawning gravel embeddedness after sediment pass-through at Dam 5 <sup>b</sup>	\$0	\$1,940	\$0	\$1,940	Aquatic	Yes
21	Implement the sediment removal at Dam No. 5, Mono Creek and Balsam Meadows forebays	\$0	\$27,940	\$0	\$27,940	Aquatic	Yes

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<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
22	Implement the sediment management plan for Mono Creek	\$0	\$19,010	\$0	\$19,010	Aquatic	Yes
23	Implement the large woody debris measure at the Bear Creek Diversion	\$0	\$5,650	\$0	\$5,650	Aquatic	Yes
24	Attend annual consultation meeting for water and aquatic resources	\$0	\$470	\$0	\$470	Aquatic	Yes
25	Implement wildlife habitat enhancements	\$0	\$1,880	\$0	\$1,880	Terrestrial	Yes
26	Implement the Bald Eagle Management Plan	\$0	\$2,390	\$0	\$2,390	Terrestrial	Yes
27	Implement the VELB Management Plan	\$0	\$12,250	\$0	\$12,250	Terrestrial	Yes

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<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
28	Implement the Vegetation and Integrated Pest Management Plan	\$0	\$47,100	\$0	\$47,100	Terrestrial	Yes
29	Implement proposed license articles for mule deer, special-status species and bats	\$1,510	\$5,650	\$0	\$5,840	Terrestrial	Yes
30	Implement environmental programs for environmental training, ESAP, avian protection, noxious weeds, NHSSIP, and environmental compliance	\$18,910	\$2,350	\$0	\$4,680	Terrestrial	Yes

<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
31	Attend annual consultation meeting for terrestrial resources	\$0	\$470	\$0	\$470	Terrestrial	Yes
32	Perform operation and maintenance of recreational facilities	\$0	\$58,870	\$0	\$58,870	Recreation	Yes
B-8 33	Implement rehabilitation of existing recreational facilities	\$4,238,550	\$0	\$0	\$523,090	Recreation	Partially <sup>c</sup>
34	Implement new recreational facilities including an accessible fishing platform at Jackass Meadows and a handicapped boat loading platform	\$189,080	\$0	\$0	\$23,330	Recreation	Yes

<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
35	Provide maintenance of the accessible fishing platform	\$0	\$1,570	\$0	\$1,570	Recreation	Yes
36	Manage reservoir water surface elevations	\$0	\$1,880	\$0	\$1,880	Recreation	Yes
37	Fund fish stocking with a 50% cost share	\$0	\$70,650	\$0	\$70,650	Recreation	Yes
38	Disseminate flow information for whitewater boating	\$0	\$11,610	\$0	\$11,610	Recreation	Yes
39	Install interpretive signs	\$87,110	\$0	\$0	\$10,750	Recreation	Yes
40	Prepare a report on recreational resources	\$0	\$4,710	\$0	\$4,710	Recreation	Yes

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<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
41	Attend annual consultation meeting for recreational resources	\$0	\$470	\$0	\$470	Recreation	Yes
42	Implement the Transportation System Plan	\$0	\$37,680	\$0	\$37,680	Land Management	Yes
43	Implement the Fire Plan	\$0	\$470	\$0	\$470	Land Management	Yes
44	Implement the Spill Prevention and Countermeasure Plan	\$0	\$470	\$0	\$470	Land Management	Yes
45	Attend annual meeting for land management resources	\$0	\$470	\$0	\$470	Land Management	Yes

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<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
46	Provide transportation system plan labor and equipment	\$0	\$329,970	\$0	\$329,970	Land Management	Yes
47	Implement an HPMP	\$183,780	\$28,260	\$0	\$50,940	Cultural	Yes
48	Implement environmental programs for cultural resource awareness	\$0	\$940	\$0	\$940	Cultural	Yes
49	Attend annual consultation meeting for cultural resources	\$0	\$470	\$0	\$470	Cultural	Yes

<sup>a</sup> SCE included in its costs for the Big Creek Nos. 2A, 8, and Eastwood Project No. 67 some measures that actually apply to the Portal Project No. 2074. These measures include proposed minimum flow releases and channel riparian maintenance releases, water and aquatic monitoring, and sediment management. The monitoring and sediment management measures have been removed from the proposed measures for Project No. 67 and have been presented separately below in table B-5. SCE did not provide a breakdown of the costs associated with the minimum flows and channel riparian maintenance flows for Camp 61 Creek, although we expect them to be small in proportion to the overall costs for minimum flows and channel riparian maintenance flows provided for Project No. 67 with Camp 61 Creek costs

included. Therefore, we have not removed a proportional amount of the Camp 61 Creek costs from Project No. 67 in table B-1, nor have we shown that portion of the costs in table B-5.

- b This measure is recommended by staff and the costs were estimated by staff.
- c Staff adopts this measure in part. We did not adopt the portions of the measure that pertain to improvements of the Dorabelle Campground, which is located outside of the project boundary. Therefore, in the staff alternative, we did not include those costs. This would reduce the capital cost of this measure from \$4,238,550 to \$3,077,610 (a difference of \$1,160,940), which would reduce the annualized cost from \$523,090 to \$379,810 (a difference of \$143,280).

Table B-2. Summary of capital costs, operations and maintenance costs, annualized costs and reduction in annual energy benefits for measures included in the Proposed Action and Proposed Action with Staff Modification alternatives for the Big Creek Nos. 1 and 2 Project. (Source: SCE, 2007a and staff)

Row No.	Environmental Measure	Capital Cost	Annual O&M Cost	Reduction in		Discipline	Staff Adopting?
				Annual Energy Benefits	Annualized Cost		
1	Implement new minimum instream flow releases	\$0	\$1,880	\$5,680,740	\$5,682,620	Aquatic	Yes
2	Maintain existing and new gaging stations	\$0	\$94,200	\$0	\$94,200	Aquatic	Yes
3	Install minimum flow devices and gaging equipment at Ely Creek Diversion	\$253,230	\$0	\$0	\$31,250	Aquatic	Yes
4	Install minimum flow devices and gaging equipment at Balsam Creek Diversion	\$253,230	\$0	\$0	\$31,250	Aquatic	Yes

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Row No.	Environmental Measure	Capital Cost	Annual O&M Cost	Reduction in		Annualized Cost	Discipline	Staff Adopting?
				Annual Energy Benefits				
5	Install minimum flow devices and gaging equipment at Dam No. 4	\$1,808,810	\$0	\$0		\$223,230	Aquatic	Yes
6	Implement temperature monitoring programs	\$0	\$8,690	\$0		\$8,690	Aquatic	Yes
7	Implement flow monitoring programs	\$0	\$47,100	\$0		\$47,100	Aquatic	Yes
8	Implement fish monitoring programs	\$0	\$7,540	\$0		\$7,540	Aquatic	Yes
9	Implement the sediment management plan at small diversions	\$0	\$1,010	\$0		\$1,010	Aquatic	Yes

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Row No.	Environmental Measure	Capital Cost	Annual O&M Cost	Reduction in		Annualized Cost	Discipline	Staff Adopting?
				Annual Energy Benefits				
10	Implement the sediment management plan at Dam No. 4	\$0	\$5,100	\$0		\$5,100	Aquatic	Yes
11	Monitoring of spawning gravel embeddedness after sediment pass-through at Dam 4 <sup>a</sup>	\$0	\$1,940	\$0		\$1,940	Aquatic	Yes
12	Attend annual consultation meeting for water and aquatic resources	\$0	\$470	\$0		\$470	Aquatic	Yes
13	Implement wildlife habitat enhancements	\$0	\$1,880	\$0		\$1,880	Terrestrial	Yes

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<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
14	Implement the Bald Eagle Management Plan	\$0	\$2,640	\$0	\$2,640	Terrestrial	Yes
15	Implement the Vegetation and Integrated Pest Management Plan	\$0	\$47,100	\$0	\$47,100	Terrestrial	Yes
16	Implement proposed license articles for special-status species, bats, and bear-human interactions	\$1,510	\$5,650	\$0	\$5,840	Terrestrial	Yes

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<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
17	Implement environmental programs for environmental training, ESAP, avian protection, noxious weeds, NHSSIP, and environmental compliance	\$18,910	\$2,350	\$0	\$4,680	Terrestrial	Yes
18	Attend annual consultation meeting for terrestrial resources	\$0	\$470	\$0	\$470	Terrestrial	Yes
19	Implement rehabilitation of existing recreational facilities	\$4,404,680	\$0	\$0	\$543,590	Recreation	Partially <sup>b</sup>

<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
20	Implement new recreational facilities including a day-use area at Dam No. 3 and an accessible fishing platform	\$1,134,460	\$0	\$0	\$140,010	Recreation	Yes
21	Manage reservoir water surface elevations	\$0	\$1,880	\$0	\$1,880	Recreation	No
22	Fund fish stocking with a 50% cost share	\$0	\$47,100	\$0	\$47,100	Recreation	Yes
23	Install interpretive signs	\$0	\$13,650	\$0	\$13,650	Recreation	Yes
24	Prepare a report on recreational resources	\$102,650	\$0	\$0	\$12,670	Recreation	Yes

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Row No.	Environmental Measure	Capital Cost	Annual O&M Cost	Reduction in		Annualized Cost	Discipline	Staff Adopting?
				Annual Energy Benefits				
25	Attend annual consultation meeting for recreational resources	\$0	\$470	\$0		\$470	Recreation	Yes
26	Implement the Visual Resources Plan	\$5,790	\$0			\$710	Land Use and Aesthetics	Yes
27	Implement the Transportation System Plan	\$0	\$16,010	\$0		\$16,010	Land Use and Aesthetics	Yes
28	Implement the Fire Plan	\$0	\$470	\$0		\$470	Land Use and Aesthetics	Yes
29	Implement the Spill Prevention and Countermeasure Plans	\$0	\$470	\$0		\$470	Land Use and Aesthetics	Yes

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Row No.	Environmental Measure	Capital Cost	Annual O&M Cost	Reduction in		Annualized Cost	Discipline	Staff Adopting?
				Annual Energy Benefits				
30	Attend annual meeting for land management resources	\$0	\$470	\$0		\$470	Land Use and Aesthetics	Yes
31	Provide transportation system plan labor and equipment	\$0	\$329,970	\$0		\$329,970	Land Use and Aesthetics	Yes
32	Implement an HPMP	\$31,010	\$3,770	\$0		\$7,600	Cultural	Yes
33	Implement environmental programs for cultural resource awareness	\$0	\$940	\$0		\$940	Cultural	Yes
34	Attend annual consultation meeting for cultural resources	\$0	\$940	\$0		\$470	Cultural	Yes

B-20

- a This measure is not proposed by SCE but is recommended by staff, and the costs are estimated by staff.
- b Staff adopts this measure in part. We did not adopt the portion of the measure that pertains to improvements of the Upper Billy, Catavee, and Kinnikinnick campgrounds, which are located outside of the project boundary. Therefore, in the staff alternative, we did not include these costs. This would reduce the capital cost from \$4,404,680 to \$3,726,970 (a difference of \$677,710), which would reduce the annualized cost from \$543,590 to \$459,950 (a difference of \$83,640).

Table B-3. Summary of capital costs, operations and maintenance costs, annualized costs and reduction in annual energy benefits for measures included in the Proposed Action and Proposed Action with Staff Modification alternatives for the Mammoth Pool Project. (Source: SCE, 2007a and staff)

Row No.	Environmental Measure	Capital Cost	Annual O&M Cost	Reduction in Annual Energy Benefits	Annualized Cost	Discipline	Staff Adopting?
1	Implement new minimum instream flow releases	\$0	\$2,380	\$701,220	\$703,600	Aquatic	Yes
2	Maintain existing and new gaging stations	\$0	\$111,750	\$0	\$111,750	Aquatic	Yes
3	Implement fishwater generator upgrade	\$5,129,370	\$0	\$0	\$633,020	Project Safety	Yes
4	Install minimum flow devices and gaging equipment at Mammoth Pool Dam	\$5,385,840	\$0	\$0	\$664,680	Aquatic	Yes

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<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
5	Install minimum flow devices and gaging equipment at Ross Creek Diversion	\$299,210	\$0	\$0	\$36,930	Aquatic	Yes
6	Install minimum flow devices and gaging equipment at Rock Creek Diversion	\$299,210	\$0	\$0	\$36,930	Aquatic	Yes
7	Implement temperature monitoring programs	\$58,890	\$12,830	\$0	\$20,100	Aquatic	Yes
8	Implement temperature (telemetry) monitoring programs	\$0	\$4,230	\$0	\$4,230	Aquatic	Yes

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<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
9	Implement flow monitoring programs	\$0	\$27,940	\$0	\$27,940	Aquatic	Yes
10	Implement fish monitoring programs	\$0	\$8,910	\$0	\$8,910	Aquatic	Yes
11	Implement the sediment management plan at small diversions	\$0	\$2,030	\$0	\$2,030	Aquatic	Yes
12	Gravel augmentation feasibility assessment <sup>a</sup>	\$0	\$2,200	\$0	\$2,200	Aquatic	Yes

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<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
13	Attend annual consultation meeting for water and aquatic resources	\$0	\$560	\$0	\$560	Aquatic	Yes
14	Implement wildlife habitat enhancements	\$0	\$2,230	\$0	\$2,230	Terrestrial	Yes
15	Implement the Bald Eagle Management Plan	\$0	\$2,640	\$0	\$2,640	Terrestrial	Yes
16	Implement the VELB Management Plan	\$0	\$14,530	\$0	\$14,530	Terrestrial	Yes

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<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
17	Implement the Vegetation and Integrated Pest Management Plan	\$0	\$55,870	\$0	\$55,870	Terrestrial	Yes
18	Implement proposed license articles for mule deer, special-status species and bats	\$1,790	\$6,700	\$0	\$6,920	Terrestrial	Yes
19	Implement environmental programs for environmental training, ESAP, avian protection, noxious weeds, NHSSIP, and environmental compliance	\$2,230	\$2,790	\$0	\$3,070	Terrestrial	Yes

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<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
20	Attend annual consultation meeting for terrestrial resources	\$0	\$560	\$0	\$560	Terrestrial	Yes
21	Implement rehabilitation of existing recreational facilities	\$633,790	\$0	\$0	\$78,220	Recreation	Partially <sup>b</sup>
22	Manage reservoir water surface elevations	\$0	\$2,230	\$0	\$2,230	Recreation	No
23	Fund fish stocking with a 50% cost share	\$0	\$27,940	\$0	\$27,940	Recreation	Yes
24	Disseminate flow information for whitewater boating	\$0	\$5,590	\$0	\$5,590	Recreation	Yes

<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
25	Provide pre-spill whitewater boating releases	\$0	\$2,090	\$0	\$2,090	Recreation	Yes
26	Prepare a report on recreational resources	\$0	\$3,410	\$0	\$3,410	Recreation	Yes
27	Provide interpretive signs	\$20,220	\$0		\$2,500	Recreation	Yes
28	Attend annual consultation meeting for recreational resources	\$0	\$560	\$0	\$560	Recreation	Yes
29	Implement the Visual Resources Plan	\$171,920	\$0		\$21,220	Land Management	Yes

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<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
30	Implement the Transportation System Plan	\$0	\$22,350	\$0	\$22,350	Land Management	Yes
31	Implement the Fire Plan	\$0	\$560	\$0	\$560	Land Management	Yes
B-29 32	Implement the Spill Prevention and Countermeasure Plans	\$0	\$560	\$0	\$560	Land Management	Yes
33	Attend annual meeting for land management resources	\$0	\$560	\$0	\$560	Land Management	Yes
34	Provide transportation system plan labor and equipment	\$0	\$329,970	\$0	\$329,970	Land Management	Yes

Row No.	Environmental Measure	Capital Cost	Annual O&M Cost	Reduction in Annual Energy Benefits	Annualized Cost	Discipline	Staff Adopting?
35	Implement an HPMP	\$36,640	\$4,470	\$0	\$8,990	Cultural	Yes
36	Implement environmental programs for cultural resource awareness	\$0	\$1,120	\$0	\$1,120	Cultural	Yes
37	Attend annual consultation meeting for cultural resources	\$0	\$560	\$0	\$560	Cultural	Yes

<sup>a</sup> This measure was presented by SCE in the Settlement Agreement, appendix B, Non-FERC Provisions, under section 1.2 Gravel Augmentation Plan. We recommend that this measure be included as part of the new license for the Mammoth Pool Project.

<sup>b</sup> Staff adopts this measure in part. We did not adopt the portion of the measure that pertains to improvements of the Mammoth Pool Campground, which is located outside of the project boundary. Therefore, in the staff alternative, we did not include this cost. This would reduce the capital cost from \$633,790 to \$304,660 (a difference of \$329,130), which would reduce the annualized cost from \$78,220 to \$37,600 (a difference of \$40,620).

Table B-4. Summary of capital costs, operations and maintenance costs, annualized costs and reduction in annual energy benefits for measures included in the Proposed Action and Proposed Action with Staff Modification alternatives for the Big Creek No. 3 Project. (Source: SCE, 2007a and staff)

<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
1	Implement new minimum instream flow releases	\$0	\$2,830	\$1,039,670	\$1,042,500	Aquatic	Yes
B-31 2	Maintain existing and new gaging stations	\$0	\$94,200	\$0	\$94,200	Aquatic	Yes
3	Install minimum flow devices and gaging equipment at Dam No. 6	\$1,808,810	\$0	\$0	\$223,230	Aquatic	Yes
4	Implement temperature monitoring programs	\$49,840	\$8,690	\$0	\$14,840	Aquatic	Yes

<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
5	Implement temperature (telemetry) monitoring programs	\$0	\$3,580	\$0	\$3,580	Aquatic	Yes
6	Implement temperature (Hardhead and DO study) programs	\$0	\$6,040	\$0	\$6,040	Aquatic	Yes
7	Implement flow monitoring programs	\$0	\$23,550	\$0	\$23,550	Aquatic	Yes
8	Implement fish monitoring programs	\$0	\$10,810	\$0	\$10,810	Aquatic	Yes
9	Implement the sediment management plan at Dam No. 6	\$0	\$2,040	\$0	\$2,040	Aquatic	Yes

<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
10	Implement the sediment removal at Dam No. 6	\$0	\$1,240	\$0	\$1,240	Aquatic	Yes
11	Monitoring of spawning gravel embeddedness after sediment pass-through at Dam 6 <sup>a</sup>	\$0	\$1,940	\$0	\$1,940	Aquatic	Yes
12	Attend annual consultation meeting for water and aquatic resources	\$0	\$470	\$0	\$470	Aquatic	Yes
13	Implement wildlife habitat enhancements	\$0	\$1,880	\$0	\$1,880	Terrestrial	Yes
14	Implement the Bald Eagle Management Plan	\$0	\$2,340	\$0	\$2,340	Terrestrial	Yes

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<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
15	Implement the VELB Management Plan	\$0	\$12,250	\$0	\$12,250	Terrestrial	Yes
16	Implement the Vegetation and Integrated Pest Management Plan	\$0	\$18,840	\$0	\$18,840	Terrestrial	Yes
17	Implement proposed license articles for special-status species and bats	\$0	\$5,650	\$0	\$5,650	Terrestrial	Yes
18	Implement environmental programs for environmental training, ESAP, avian protection, noxious weeds, NHSSIP, and environmental compliance	\$18,910	\$2,350	\$0	\$4,680	Terrestrial	Yes

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<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
19	Attend annual consultation meeting for terrestrial resources	\$0	\$470	\$0	\$470	Terrestrial	Yes
20	Implement rehabilitation of existing recreational facilities	\$19,400	\$0	\$0	\$2,390	Recreation	Yes
21	Prepare a report on recreational resources	\$0	\$580	\$0	\$580	Recreation	Yes
22	Disseminate flow information for whitewater boating	\$0	\$4,710	\$0	\$4,710	Recreation	Yes
23	Attend annual consultation meeting for recreational resources	\$0	\$470	\$0	\$470	Recreation	Yes

<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
24	Implement the Transportation System Plan	\$0	\$11,300	\$0	\$11,300	Land Management	Yes
25	Implement the Fire Plan	\$0	\$470	\$0	\$470	Land Management	Yes
B-36 26	Implement the Spill Prevention and Countermeasure Plans	\$0	\$470	\$0	\$470	Land Management	Yes
27	Attend annual meeting for land management resources	\$0	\$470	\$0	\$470	Land Management	Yes
28	Provide transportation plan labor and equipment	\$0	\$329,970	\$0	\$329,970	Land Management	Yes
29	Implement an HPMP	\$31,010	\$3,770	\$0	\$7,600	Cultural	Yes

<b>Row No.</b>	<b>Environmental Measure</b>	<b>Capital Cost</b>	<b>Annual O&amp;M Cost</b>	<b>Reduction in Annual Energy Benefits</b>	<b>Annualized Cost</b>	<b>Discipline</b>	<b>Staff Adopting?</b>
30	Implement environmental programs for cultural resource awareness	\$0	\$940	\$0	\$940	Cultural	Yes
31	Attend annual consultation meeting for cultural resources	\$0	\$470	\$0	\$470	Cultural	Yes

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<sup>a</sup> This measure is not proposed by SCE but is recommended by staff, and the costs are estimated by staff.

Table B-5. Summary of capital costs, operations and maintenance costs, annualized costs and reduction in annual energy benefits for measures included in the Proposed Action and Proposed Action with Staff Modification alternatives for the Portal Project. (Source: SCE, 2007a and staff)

Row No.	Environmental Measure	Capital Cost	Annual O&M Cost	Reduction in Annual Energy Benefits	Annualized Cost	Discipline	Staff Adopting?
1	Implement new minimum instream flow and channel riparian maintenance flow releases <sup>a, b</sup>	\$0	\$0	\$0	\$0	Aquatic	Yes
2	Implement Camp 61 Creek monitoring programs <sup>b</sup>	\$0	\$7,550	\$0	\$7,550	Aquatic	Yes
3	Implement the sediment management plan for Camp 61 Creek <sup>b</sup>	\$0	\$24,530	\$0	\$24,530	Aquatic	Yes

<sup>a</sup> SCE included in its costs for the Big Creek Nos. 2A, 8, and Eastwood Project No. 67 some measures that actually apply to the Portal Project No. 2074. These measures include proposed minimum flow releases and channel riparian maintenance releases, water and aquatic monitoring, and sediment management. The monitoring and sediment management measures have been removed from the proposed measures for Project No. 67 and have been presented separately below in table B-5. SCE did not provide a breakdown of the costs associated with the minimum flows and channel riparian maintenance flows for Camp 61 Creek, although we expect them to be small in proportion to the overall costs for minimum flows and channel riparian maintenance flows provided for Project No. 67 with Camp 61 Creek costs included. Therefore, we have not removed a proportional amount of the Camp 61 Creek costs from Project No. 67 in table B-1, nor have we shown that portion of the costs in table B-5.

<sup>b</sup> Although we recommend these measures, they would need to be addressed in the license order for the Portal Project.