

Appendix P

KBRA Regional Economic Effects

IMPLAN Analysis

P.1 Introduction

This appendix evaluates the regional economic effects of implementing the Klamath Basin Restoration Agreement (KBRA). The KBRA includes up to 112 actions that could result in new economic activity in the counties within the Klamath Basin. KBRA actions would increase purchases and employment opportunities through planning and implementation of local projects and would provide funding to local governments.

Actions in the KBRA are grouped under fisheries programs, water and power programs, regulatory assurances, and county and tribal programs. The fisheries programs include an extensive habitat restoration program throughout the basin; fisheries reintroduction programs; fisheries monitoring programs; and actions intended to increase flows and reliability of instream water in the mainstem of the Klamath River and its tributaries (with the exception of the Trinity River basin). The water and power programs include an agreement on limitations on water diversions to Reclamation's Klamath Project users including the Klamath Basin National Wildlife Refuge System; a voluntary Water Use Retirement Plan (WURP) to allow for more instream water for fisheries; and agreements and assurances that the parties will work collaboratively to resolve outstanding water right contests through the Oregon Klamath Basin Adjudication process. County and tribal programs include: economic development programs for local governments and tribes; regulatory assurances that adverse impacts on communities would be minimized; and tribal fisheries and natural resource conservation management programs. Chapter 2 of the EIS/EIR describes KBRA actions under each program.

The KBRA includes Appendix C-2 Budget for Implementation of Agreement that provides estimates for the costs of implementing the KBRA. The Klamath Settlement Parties developed Appendix C-2 in 2008. Federal agencies have since revised Appendix C-2 funds and extended the KBRA to 15-year period from 2012 through 2026. This analysis uses the Revised Appendix C-2, Cost Estimates or Federal Funding to Implement Klamath Basin Restoration Agreement, dated June 20, 2011 (hereon referred to as Revised Appendix C-2). The Revised Appendix C-2 is attached at the end of this appendix.

KBRA actions would require further discretionary approval by federal or state agencies and would be subject to subsequent NEPA and/or CEQA compliance; therefore, this is a preliminary analysis of potential regional economic effects of implementing the KBRA.

In addition, funding for the KBRA is still being identified and negotiated; therefore, program costs could change in the future. This is a preliminary analysis with the best available information at this time.

P.2 Methods

Implementation of KBRA actions in the Klamath Basin would increase economic activity, including employment, labor income, and output, over the 15 year implementation period. This analysis uses program costs and the IMPLAN (Impact analysis for PLANning) model to estimate regional economic effects of each KBRA action. See Section 3.15, Socioeconomics, for discussion of IMPLAN. In general, IMPLAN estimates the economic impacts of a change in final demand within an industry or institution. IMPLAN provides economic data for the defined region, including number of jobs, labor income and output for each sector. This analysis is based on a 2009 regional economy defined using IMPLAN data sets.

The IMPLAN model has some inherent limitations to assessing economic effects. It is an input-output modeling framework that does not incorporate price changes, technology changes, and changes in behavior. The model is static and provides a snap shot of the economy at a given point in time. Thus, the model does not consider long-term adjustments that the economy will make in response to this change. Other model limitations include:

- IMPLAN is used to examine “marginal” changes: Estimated jobs and income coefficients are valid only for relatively small changes to a particular area’s economy in the IMPLAN baseline year. Any stimulus large enough to change the underlying structure and trade relationships of the economy will necessarily change the relationships quantified in the coefficients and new models would need to be specified and run.
- Multipliers are not generic: These coefficients reflect a unique underlying economic structure. They are not, therefore, generally applicable to activities and geographies different from those under which they were originally estimated.
- Secondary job and income effects vary based on size of an economy: Larger study areas will typically have more internalization of economic activity thus leading to larger multipliers.

P.2.1 Economic Regions

This analysis mostly uses two economic regions (groups of counties): a 4-county region consisting of Klamath, Siskiyou, Humboldt, and Del Norte Counties, and a 3-county region consisting of Klamath, Siskiyou, and Modoc Counties. The applicable region depends on where the action would occur. For example, actions in the fisheries programs would occur in the 4-county region and actions affecting Reclamation’s Klamath Project would occur in the 3-county region. For some actions, individual counties are used if the

effect is likely to occur in a particular county. The results sections identify regions used for the analysis of each action.

P.2.2 Revised Appendix C-2 Cost Escalation

The economic analysis for the Secretarial Determination uses values estimated in 2012 dollars. The Revised Appendix C-2 shows estimated costs in 2007 dollars. For actions with a construction, monitoring, or restoration component, it is necessary to escalate costs to 2012 dollars to reflect inflation and for consistency with base funding and other economic analyses. Costs were escalated using the Gross Domestic Product (GDP) implicit price deflator index, which was 1.09, to escalate from 2007 to 2012 dollars. The 2011 and 2012 indexes were projected based on compound average growth rate for previous five years. This analysis escalated total action costs. For actions that involve transfer of funds from one entity to another, costs were assumed to be nominal dollars and not escalated.

P.2.3 Project Timing

This analysis uses the total funds over the 15-year period and does not evaluate effects on an annual basis. The total cost of the action was run in IMPLAN in the event year 2012; however, economic effects would occur over the 15-year time period or during the years in which the action is implemented. Therefore, some effects presented in the results could be greater over time due to inflation if the action is implemented in later years. The Revised Appendix C-2 identifies the years in which the projects would be implemented. IMPLAN is a linear model; therefore, effects would occur in proportion to the dollars that are spent annually. Economic effects are presented in 2012 dollars.

P.2.4 Base Funding

Federal agencies identified initial base funding values, provided in 2012 dollars, for actions similar to those that would be implemented under the KBRA. Base funding was provided on an annual basis for each year from 2012-2026. Not all actions have base funding. The base funding dollars are assumed to be spent whether the KBRA is implemented or not; therefore, the base funding values are assumed for the No Action Alternative. Base funding values were run in IMPLAN to determine effects of the No Action Alternative. Base funding values are preliminary and may change in the future from those used in this analysis.

The KBRA funding would be in addition to the base funding that would be spent under the No Action Alternative. Base funding was subtracted from the total, escalated KBRA costs for the Facilities Removal Alternatives.

P.2.5 In-Region Spending

KBRA actions encompass a wide range of activities ranging from facility construction to plan development to transfer payments to local governments and private entities. Most activities, including construction projects, restoration, and monitoring activities, would

result in some level of a change in final demand within the region. Some actions, such as transfer payments, would result in an exchange of funds from one entity to another. There would be no regional economic effects of the exchange of funds. Future spending of the funds would have regional effects, but they cannot be quantified at this time.

For projects that would result in regional economic effects, it is important to determine how much money would be spent within the region versus outside of the region. Money spent outside of the region would not affect employment, labor income, or output within the region and is not considered in this analysis. To estimate in-region spending, project experts from federal and state agencies and tribes were interviewed regarding the percentage of total costs that would be spent in the region. Experts were from U.S. Fish and Wildlife Service, Bureau of Reclamation, NOAA Fisheries Service, United State Geologic Survey, U.S. Forest Service, U.S. Department of the Interior, California Department of Fish and Game, Oregon Department of Fish and Wildlife, Karuk Tribe, Yurok Tribe and The Klamath Tribes. Personal communication references are included at the end of this appendix. Project experts considered project requirements, similar past projects, existing industries and work force in the counties to determine a percentage for in-region costs. Percentages were applied to both base funding and additional KBRA funding. These percentages should be reexamined as KBRA actions are further defined and analyzed prior to implementation. Table P-1 shows in-region federal spending for actions with base funding and actions with incremental KBRA funding that are analyzed in this appendix.

Once in-region spending percentages were agreed upon, project experts helped identify the appropriate industry or institution that would experience the direct economic effect, or change in demand. For the majority of actions, money would be spent in the construction sector or in local and state governments to implement activities.

Construction dollars are input into Sector 36 Construction of Other Non-Residential Structures in IMPLAN. For funds to state and local governments, spending was modeled using an institutional spending pattern for State/Local Government Non-Education developed for the region within IMPLAN. Some funds would also be spent on local scientists or consultants; these direct effects are input into Sector 375 Environmental and Other Technical Consulting Services in IMPLAN. After the appropriate sectors were identified, IMPLAN used model specific multipliers to estimate direct and secondary effects. Multipliers exist for every component of value added i.e. output, employment and labor income. Tables P-2 and P-3 show 2009 regional economic production function or multipliers for Sector 36 Construction of Other Non-Residential Structures and Sector 375 Environmental and Other Technical Consulting Services within the 4-county (Klamath, Siskiyou, Del Norte, and Humboldt Counties) and 3-county (Klamath, Siskiyou and Modoc Counties) regions for employment, labor income and output.

Table P-1. In-Region Base and KBRA Funding Summary (2012 dollars, 1000\$)

#	Action	BASE FUNDING	KBRA FUNDING (incremental to Base Funding)
1	Coordination and Oversight	\$1,350	\$117
2	Planning & Implementation Ph. I and Ph. II Restoration Plans	\$420	\$1,211
3	Williamson R. aquatic habitat restoration	\$3,735	\$890
4	Sprague R. aquatic habitat restoration	\$11,216	\$41,994
5	Wood R. Valley aquatic habitat restoration	\$2,997	\$10,777
6	Williamson Sprague Wood Screening Diversion	\$0	\$2,232
7	Williamson & Sprague USFS uplands	\$4,680	\$4,886
8	Upper Klamath Lake aquatic habitat restoration	\$2,997	\$10,785
9	Screening of UKL pumps	\$0	\$425
10	UKL watershed USFS uplands	\$1,159	\$1,641
11	Keno Res. water quality studies & remediation actions	\$0	\$29,647
12	Keno Res. wetlands restoration	\$2,250	\$1,008
14	Keno to Iron Gate upland USFS (Goosenest)	\$504	\$713
15	Keno to Iron Gate mainstem restoration	\$0	\$951
16	Keno to Iron Gate tributaries - diversions & riparian	\$0	\$1,141
17	Shasta River aquatic habitat restoration	\$16,674	\$0
18	Shasta River USFS uplands	\$606	\$0
19	Scott River aquatic habitat restoration	\$18,720	\$0
20	Scott River USFS uplands	\$958	\$460
21	Scott River private uplands	\$2,100	\$0
22	Mid Klamath River & tributaries (Iron Gate to Weitchpec) aquatic habitat restoration	\$6,750	\$0
23	Mid Klamath tributaries USFS upland	\$3,600	\$4,574
24	Mid Klamath tributaries private upland	\$4,200	\$1,887
25	Lower Klamath River & tributaries (Weitchpec to mouth) aquatic habitat restoration	\$18,200	\$0
26	Lower Klamath private uplands	\$9,900	\$25,428
27	Salmon River aquatic habitat restoration	\$1,650	\$1,959
28	Salmon River USFS upland	\$2,082	\$2,701
29	Reintroduction Plan	\$0	\$1,631
30	Collection Facility	\$0	\$6,014
31	Production Facility	\$0	\$6,113
32	Acclimation Facility	\$0	\$4,709
33	Transport	\$0	\$826
34	Monitoring and Evaluation - Oregon	\$0	\$29,828
35	Monitoring and Evaluation - California	\$0	\$2,995
36	New Hatchery (Iron Gate Dam or Fall Creek)	\$0	\$5,546
37	Adult Salmonids	\$7,400	\$9,952
38	Juvenile Salmonids	\$4,110	\$14,630
39	Genetics Otololith	\$2,055	\$0
40	Hatchery Tagging	\$315	\$0
41	Disease	\$316	\$5,214
42	Green Sturgeon	\$2,480	\$0
43	Lamprey	\$371	\$1,837
44	Geomorphology	\$153	\$1,608
45	Habitat Monitoring	\$0	\$2,641
46	Water Quality	\$1,545	\$86
47	UKL bloom dynamics	\$1,545	\$0
48	UKL water quality/phytoplankton/zooplankton	\$2,020	\$4,143
49	UKL internal load/bloom dynamics	\$1,800	\$1,244
50	UKL external nutrient loading	\$60	\$3,881
51	UKL analysis of long-term data sets	\$0	\$652

Table P-1. In-Region Base and KBRA Funding Summary (2012 dollars, 1000\$)

#	Action	BASE FUNDING	KBRA FUNDING (incremental to Base Funding)
52	UKL listed suckers	\$8,985	\$4,331
53	Tributaries water quality/nutrients/sediment	\$0	\$4,718
54	Tributaries geomorphology/riparian vegetation	\$0	\$3,637
55	Tributaries physical habitat	\$0	\$3,241
56	Tributaries listed suckers	\$930	\$4,777
57	Keno Impoundment water quality/algae/nutrients	\$70	\$6,048
58	Keno Impoundment to Tributaries: Meteorology (weather stations)	\$0	\$3,044
61	Data Analysis and evaluation	\$0	\$168
62	Development of predictive techniques	\$0	\$391
64	Klamath Basin Wildlife Refuges: Walking Wetland Construction	\$0	\$2,500
66	On Project water plan	\$4,325	\$96,223
69	D Pumping Plant	\$0	\$2,772
73	Federal Power	\$0	\$1,087
74	Energy Efficiency and Renewable Resources	\$0	\$4,402
76	UKL Wetlands Restoration: Agency/Barnes	\$0	\$2,717
77	UKL Wetlands Restoration: Wood River	\$0	\$2,717
85	Real Time Water Management: Water Flow Monitoring and Gauges	\$0	\$3,239
87	Adaptive Management: Science and Analysis	\$0	\$1,087
88	Real Time Management: Calibration and improvements to KLAMSIM or other modeling and predictions	\$0	\$109
90	Keno Impoundment Klamath Irrigation Project Screening	\$0	\$5,470
91	Federal General/Habitat Conservation Plan	\$0	\$5,082
100	Fisheries Management Karuk	\$10,468	\$4,032
101	Fisheries Management Klamath	\$8,997	\$5,503
102	Fisheries Management Yurok	\$8,934	\$5,566
104	Conservation Management Karuk	\$4,200	\$3,050
105	Conservation Management Klamath	\$4,200	\$3,050
106	Conservation Management Yurok	\$4,200	\$3,050
108	Economic Development Study Karuk	\$0	\$250
109	Economic Development Study Klamath	\$0	\$250
110	Economic Development Study Yurok	\$0	\$250

Source: Revised Appendix C-2
UKL: Upper Klamath Lake
USFS: United States Forest Service

Table P-2. 4-County (Klamath, Siskiyou, Humboldt, and Del Norte) Multiplier

Industry sector	Employment		Labor income		Output	
	Direct Effects	Secondary Effects	Direct Effects	Secondary Effects	Direct Effects	Secondary Effects
Sector 36: Construction of Other Non-Residential Structures	8.608	5.176	0.417	0.201	1.000	0.546
Sector 375: Environmental and Other Technical Consulting Services	14.370	6.492	0.571	0.232	1.000	0.639

Source: 2009 IMPLAN data

Table P-3. 3-County (Klamath, Siskiyou, and Modoc) Multiplier

Industry sector	Employment		Labor income		Output	
	Direct Effects	Secondary Effects	Direct Effects	Secondary Effects	Direct Effects	Secondary Effects
Sector 36: Construction of Other Non-Residential Structures	9.2652	4.473	0.450	0.1392	1.000	0.3940
Sector 375: Environmental and Other Technical Consulting Services	11.375	5.836	0.618	0.194	1.000	0.540

Source: 2009 IMPLAN data

P.2.6 Project Not Evaluated in this Appendix

Some KBRA actions would affect irrigated agriculture and wildlife refuges in Reclamation's Klamath Project area. These effects were evaluated separately and are described in the Irrigated Agriculture Economics Technical Report and the Refuge Recreation Technical Report. Actions include: On-Project Water Plan, Water Use Retirement Plan, Off-Project Program, Interim Power Sustainability, Drought Plan Restoration Fund Agreement, Interim Flow and Lake Level Program. These programs would have some additional regional effects from funds spent in state and local governments on administration and implementation. These actions are not evaluated in this appendix to avoid double counting of economic effects.

Based on project expert opinions obtained through interviews, some KBRA actions would be implemented completely outside of the region. In the future, portions of these actions could be implemented in-region, but this information is not available at the time of this analysis. Therefore, it is assumed the following actions would not have any regional economic effects and are not evaluated in this appendix: Remote Sensing Acquisition and Analysis, Keno Dam Fish Passage, Groundwater Technical Investigation, Technical Assessment of Climate Change, and Renewable Power Program Financial and Engineering Plan.

Some actions originally identified in the KBRA do not have funding identified in the Revised C-2 Appendix. These projects are identified in Section P.4.

P.3 2009 Regional Economy

Tables P-4 and P-5 show 2009 regional economic data for the 4-county (Klamath, Siskiyou, Del Norte, and Humboldt Counties) and 3-county (Klamath, Siskiyou and Modoc Counties) regions aggregated into eight industry sector classifications. Employment is measured in number of jobs. Income is the dollar value of total payroll (including benefits) for each industry in the analysis area plus income received by self-employed individuals within the analysis area. Output represents the dollar value of industry production.

Table P-4. 4-County (Klamath, Siskiyou, Humboldt, and Del Norte) Regional Economy

Industry sector	Employment		Labor income		Output	
	Jobs	Percent of total	Million \$	Percent of total	Million \$	Percent of total
Agriculture	5,713	4.8	219.0	4.5	910.7	7.3
Mining	127	0.1	5.6	0.1	23.1	0.2
Construction	5,845	4.9	282.1	5.7	707.4	5.7
Manufacturing	5,085	4.2	261.9	5.3	1,501.9	12.0
Transportation, Information, Public Utilities	3,887	3.2	215.1	4.4	759.6	6.1
Trade	17,471	14.6	601.1	12.2	1,232.5	9.9
Service	53,658	44.8	1,835.7	37.4	5,459.1	43.7
Government	28,048	23.4	1,490.2	30.3	1,904.5	15.2
Total	119,834		4,910.7		12,498.8	

Source: 2009 IMPLAN data

Table P-5. 3-County (Klamath, Siskiyou, and Modoc) Regional Economy

Industry sector	Employment		Labor income		Output	
	Jobs	Percent of total	Million \$	Percent of total	Million \$	Percent of total
Agriculture and fishing	3,803	7.3	124.2	6.0	560.9	10.2
Mining	85	0.2	3.3	0.2	16.1	0.3
Construction	2,358	4.5	99.3	4.8	265.5	4.8
Manufacturing	2,629	5.0	135.9	6.5	706.1	12.8
Transportation, Information, Public Utilities	2,122	4.1	118.1	5.7	426.3	7.8
Trade	7,272	13.9	237.7	11.4	491.6	8.9
Service	22,421	43.0	752.2	36.1	2,245.1	40.8
Government	11,452	22.0	611.8	29.4	785.7	14.3
Total	52,142		2,082.5		5,497.3	

Source: 2009 IMPLAN data

P.4 Results

The following sections present the results of the regional economic impact analysis. For each KBRA action, the analysis identifies the project timeframe, in-region spending amount, industry or institutional sector affected, direct and total economic effects of the No Action Alternative and the KBRA relative to the No Action Alternative. The KBRA effects are in addition to the effects of the No Action Alternative. The in-region spending amounts identified in the following paragraphs were provided by project experts in federal and state agencies.

In the results tables, the direct effect is the spending on goods and services in a particular sector, such as construction, or the additional funds to local and state governments to support employee compensation and services. The direct effects are derived from base funding provided by federal agencies and the Revised Appendix C-2 values escalated to 2012 dollars, as appropriate. The secondary effects are the additional employment, income, and output in the regional economy supported by the KBRA actions, as estimated by IMPLAN. The total effects are the sum of direct and secondary effects.

Regional economic effects would occur over a 15-year period. Some actions would be completed in less than 15 years. The Revised Appendix C-2 shows the assumed time period for each action. Because funds are not always spent equally across all years, it is not appropriate to divide the total effect by the number of years to get an annual effect. This analysis only presents the total effects of the 15-year program. The results in the tables are not annual results.

P.4.1 # 1 Coordination and Oversight

Coordination and oversight spending would occur each year for the 15 year KBRA implementation period (2012-2026). The analysis assumes that 90% would be spent in the region and 10% percent would be spent outside the region. The region is the 4-county region. Base funding spent in the region for this action under the No Action Alternative would be \$1.35 million over 15 years. Under the KBRA, an additional \$0.1 million would be spent within the region over 15 years for this action. State and local governments would implement this action. Table P-6 summarizes regional economic effects of this action for the No Action Alternative and the KBRA relative to the No Action Alternative.

Table P-6. Coordination and Oversight IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	17	\$847,000	\$1,102,000	2	\$74,000	\$96,000
Secondary Effects	5	\$177,000	\$520,000	1	\$16,000	\$46,000
Total Effects	22	\$1,024,000	\$1,622,000	3	\$90,000	\$142,000

P.4.2 Restoration Program

The restoration program includes actions in the Upper and Lower Klamath Basin. Restoration actions have construction components and administration components. Construction components could include fence construction, maintenance, vegetation planting, levee removal, or other activities. It is assumed that much of the construction for restoration programs could be done by local government and contractors. As described above, the Revised Appendix C-2 costs for restoration program actions were

inflated to 2012 dollars using the GDP implicit price deflator index. Base funding was identified for most restoration actions, and is indicated below for each action. The 4-county region (Klamath, Siskiyou, Humboldt, and Del Norte Counties) was used for all restoration actions because actions would be implemented and effects would occur in these counties.

P.4.2.1 # 2 Planning and Implementation – Phase 1 and 2 Fishery Restoration Plans

Planning and implementation of the Fishery Restoration Plan would occur in 4 years total or two two-year increments, 2012-2013 and 2020 to 2021. The analysis assumes that 60% would be spent in the region and 40% would be spent outside the region. Base funding spent in the region for this action under the No Action Alternative would be \$0.4 million. Under the KBRA, an additional \$1.2 million would be spent within the region for this action. State and local governments would implement this action. Table P-7 summarizes regional economic effects of this action for the No Action Alternative and the KBRA relative to the No Action Alternative.

Table P-7. Planning & Implementation Phase I II Restoration Plans IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	5	\$264,000	\$343,000	15	\$760,000	\$989,000
Secondary Effects	2	\$55,000	\$162,000	5	\$158,000	\$467,000
Total Effects	7	\$319,000	\$505,000	20	\$918,000	\$1,456,000

P.4.2.2 # 3 Williamson River Aquatic Habitat Restoration

The Williamson River aquatic habitat restoration would be implemented over a 14-year period (2013–2026). This analysis assumes that almost all of the funds (i.e., 99.6% of the funds) would be spent in the region. Of the in-region spending, 68% would be spent on construction activities and 32% would be spent on administration and management by state and local governments. Base funding spent in the region under the No Action Alternative would be \$3.7 million. Under the KBRA, an additional \$0.8 million would be spent within the region for this action. Table P-8 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-8. Williamson River Aquatic Habitat Restoration IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	34	\$1,742,000	\$3,516,000	8	\$416,000	\$838,000
Secondary Effects	16	\$636,000	\$1,761,000	4	\$152,000	\$420,000
Total Effects	50	\$2,378,000	\$5,277,000	12	\$568,000	\$1,258,000

P.4.2.3 # 4 Sprague River Aquatic Habitat Restoration

The Sprague River aquatic habitat restoration would be implemented over a 15-year period (2012-2026). This action would be conducted similar to the Williamson River aquatic habitat restoration with 99.7% of the expenditure conducted in region and 0.3% of outside region activities. It is assumed that 75% of the in-region spending would be spent on construction and 25% would be spent on administration and management activities by state and local government. Base funding spent in the region under the No Action Alternative would be \$11.2 million. Under the KBRA, an additional \$41.9 million would be spent within the region spent over a 15-year period for this action. Table P-9 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-9. Sprague River Aquatic Habitat Restoration IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	98	\$5,045,000	\$10,701,000	365	\$18,888,000	\$40,065,000
Secondary Effects	49	\$1,955,000	\$5,385,000	181	\$7,318,000	\$20,163,000
Total Effects	147	\$7,000,000	\$16,086,000	546	\$26,206,000	\$60,228,000

P.4.2.4 # 5 Wood River Valley Aquatic Habitat Restoration

The Wood River Valley aquatic habitat restoration would be implemented over a 15-year period (2012–2026). All project dollars would be spent in the region. Of the in-region spending, 88% would be spent on construction activities and the remaining 12% would be spent on administration and management by state and local government. Base funding spent in the region under the No Action Alternative would be \$3 million. Under the KBRA, an additional \$10.7 million would be spent within the region for this action. Table P-10 summarizes regional economic effects of this action under the KBRA relative to the No Action Alternative.

Table P-10. Wood River Valley Aquatic Habitat Restoration IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	25	\$1,256,000	\$2,931,000	88	\$4,516,000	\$10,540,000
Secondary Effects	14	\$545,000	\$1,489,000	48	\$1,960,000	\$5,352,000
Total Effects	39	\$1,801,000	\$4,420,000	136	\$6,476,000	\$15,892,000

P.4.2.5 # 6 Williamson Sprague Wood Screening Diversion

This action is a construction project and would occur over a 14-year period from 2013-2026. It is assumed that 70% of total funds would be spent in the region and 30% would be spent outside the region. Of the funds spent in the region, 90% would be spent in the construction sector and 10% would be spent on administration and management by state and local government. There is no base funding identified for this action. Under the KBRA, \$2.3 million would be spent within the region for this action. Table P-11 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-11. Williamson Sprague Wood Screening Diversion IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	18	\$925,000	\$2,191,000
Secondary Effects	0	\$0	\$0	10	\$409,000	\$1,115,000
Total Effects	0	\$0	\$0	28	\$1,334,000	\$3,306,000

P.4.2.6 # 7 Williamson and Sprague US Forest Service Uplands

This action would be implemented over a 14-year period (2013–2026). It is assumed that 80% of total funds would be spent in the region and 20% would be spent outside the region. Of the in-region spending, 75% would be in the construction sector and 25% would be spent on administration and management by state and local government. Base funding spent in the region under the No Action Alternative would be \$4.7 million. Under the KBRA, an additional \$4.9 million would be spent within the region for this action. Table P-12 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-12. Williamson & Sprague US Forest Service Uplands IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	41	\$2,105,000	\$4,465,000	43	\$2,197,000	\$4,661,000
Secondary Effects	21	\$816,000	\$2,247,000	21	\$852,000	\$2,346,000
Total Effects	62	\$2,921,000	\$6,712,000	64	\$3,049,000	\$7,007,000

P.4.2.7 # 8 Upper Klamath Lake Aquatic Habitat Restoration

The Upper Klamath Lake aquatic habitat restoration would be implemented over a 9-year period (2013–2021). All project dollars would be spent in the region. Of the in-region spending, 94% would be spent on construction activities and 6% would be spent on administration and management by state and local government. Base funding spent in the region under the No Action Alternative would be \$3 million. Under the KBRA, an additional \$10.8 million would be spent within the region for this action. Table P-13 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-13. Upper Klamath Lake Aquatic Habitat Restoration IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	24	\$1,214,000	\$2,964,000	85	\$4,366,000	\$10,667,000
Secondary Effects	14	\$556,000	\$1,512,000	49	\$1,999,000	\$5,438,000
Total Effects	38	\$1,770,000	\$4,476,000	134	\$6,365,000	\$16,105,000

P.4.2.8 # 9 Screening of Upper Klamath Lake Pumps

This action would occur over a 14-year period from 2013–2026. It is assumed that 80% of total funds would be spent in the region and 20% would be spent outside the region. Of the funds spent in the region, 90% would be spent in the construction sector and 10% would be spent on administration and management by state and local government. There is no base funding identified for this action. Under the KBRA, \$0.4 million would be spent within the region for this action. Table P-14 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-14. Screening of Upper Klamath Lake Pumps IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	4	\$177,000	\$419,000
Secondary Effects	0	\$0	\$0	2	\$78,000	\$213,000
Total Effects	0	\$0	\$0	6	\$255,000	\$632,000

P.4.2.9 # 10 Upper Klamath Lake Watershed US Forest Service Uplands

This action would occur over a 4-year period from 2018–2021. It is assumed that 80% of total funds would be spent in the region and 20% would be spent outside the region. Of the funds spent in the region, 75% would be spent in the construction sector and 25% would be spent on administration and management by state and local government. Base funding spent in the region under the No Action Alternative would be \$1.1 million. Under the KBRA, an additional \$1.6 million would be spent within the region for this action. Table P-15 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-15. Upper Klamath Lake Watershed US Forest Service Uplands IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	11	\$522,000	\$1,106,000	15	\$738,000	\$1,566,000
Secondary Effects	5	\$202,000	\$557,000	8	\$286,000	\$788,000
Total Effects	16	\$724,000	\$1,663,000	23	\$1,024,000	\$2,354,000

P.4.2.10 # 11 Keno Impoundment Water Quality Studies and Remediation Actions

This action would occur over a 14-year period from 2013–2026. It is assumed that 55% of total funds would be spent in the region and 45% would be spent outside the region. Of the funds spent in the region, 95% would be spent in the construction sector and 5% would be spent on administration and management by state and local government. There is no base funding identified for this action. Under the KBRA, \$29.6 million would be spent within the region for this action. Table P-16 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-16. Keno Impoundment Water Quality Studies & Remediation Actions IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	232	\$11,931,000	\$29,374,000
Secondary Effects	0	\$0	\$0	134	\$5,512,000	\$14,986,000
Total Effects	0	\$0	\$0	366	\$17,443,000	\$44,360,000

P.4.2.11 # 12 Keno Impoundment Wetlands Restoration

This action would occur over a 4-year period from 2017–2020. It is assumed that 60% of total funds would be spent in the region and 40% would be spent outside the region. Of the funds spent in the region, 95% would be spent in the construction sector and 5% would be spent on administration and management by state and local government. Base funding spent in the region under the No Action Alternative would be \$2.3 million. Under the KBRA, an additional \$1.1 million would be spent within the region for this action. Table P-17 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-17. Keno Impoundment Wetlands Restoration IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	18	\$906,000	\$2,231,000	8	\$406,000	\$998,000
Secondary Effects	11	\$419,000	\$1,138,000	5	\$188,000	\$510,000
Total Effects	29	\$1,325,000	\$3,369,000	13	\$594,000	\$1,508,000

P.4.2.12 # 14 Keno to Iron Gate Upland US Forest Service (Goosenest)

This action would occur over a 14-year period from 2013–2026. It is assumed that 80% of total funds would be spent in the region and 20% would be spent outside the region. Of the funds spent in the region, 80% would be spent in the construction sector and 20% would be spent on administration and management by state and local government. Base funding spent in the region under the No Action Alternative would be \$0.5 million. Under the KBRA, an additional \$0.7 million would be spent within the region for this action. Table P-18 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-18. Keno to Iron Gate Upland US Forest Service (Goosenest) IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	5	\$221,000	\$486,000	6	\$313,000	\$688,000
Secondary Effects	3	\$90,000	\$246,000	4	\$127,000	\$348,000
Total Effects	8	\$311,000	\$732,000	10	\$440,000	\$1,036,000

P.4.2.13 # 15 Keno to Iron Gate Mainstem Restoration

This action would occur over a 9-year period from 2013–2021. It is assumed that 70% of total funds would be spent in the region and 30% would be spent outside the region. Of the funds spent in the region, 60% would be spent in the construction sector and 40% would be spent on administration and management by state and local government. There is no base funding identified for this action. Under the KBRA, \$0.9 million would be spent within the region for this action. Table P-19 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-19. Keno to Iron Gate Mainstem Restoration IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	9	\$462,000	\$882,000
Secondary Effects	0	\$0	\$0	4	\$158,000	\$439,000
Total Effects	0	\$0	\$0	13	\$620,000	\$1,321,000

P.4.2.14 # 16 Keno to Iron Gate Tributaries – Diversion and Riparian

This action would occur over a 3-year period from 2016–2018. It is assumed that 70% of total funds would be spent in the region and 30% would be spent outside the region. Of the funds spent in the region, 60% would be spent in the construction sector and 40% would be spent on administration and management by state and local government. There is no base funding identified for this action. Under the KBRA, \$1.1 million would be spent within the region for this action. Table P-20 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-20. Keno to Iron Gate Tributaries - Diversions & Riparian IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	11	\$555,000	\$1,058,000
Secondary Effects	0	\$0	\$0	5	\$189,000	\$527,000
Total Effects	0	\$0	\$0	16	\$744,000	\$1,585,000

P.4.2.15 # 17 Shasta River Aquatic Habitat Restoration

This action would occur over a 15-year period from 2012–2026. It is assumed that 70% of total funds would be spent in the region and 30% would be spent outside the region. Of the funds spent in the region, 50% would be spent in the construction sector and 25% would be spent on administration and management by state and local government. An additional 25% would be spent on water acquisitions, which are considered a transfer payment that would not result in regional economic impacts. Base funding spent in the region under the No Action Alternative would be \$16.7 million. No additional funding would be spent on this action. Table P-21 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-21. Shasta River Aquatic Habitat Restoration IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	113	\$5,872,000	\$11,740,000	0	\$0	\$0
Secondary Effects	53	\$2,119,000	\$5,873,000	0	\$0	\$0
Total Effects	166	\$7,991,000	\$17,613,000	0	\$0	\$0

P.4.2.16 # 18 Shasta River US Forest Service Uplands

Base funding spent in the region under the No Action Alternative would be \$0.6 million. It is assumed that 80% of total funds would be spent in the region and 20% would be spent outside the region. Of the funds spent in the region, 80% would be spent in the construction sector and 20% would be spent on administration and management by state and local government. It is assumed that no additional funding under the KBRA would be spent within the region for this action. Table P-22 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-22. Shasta River US Forest Service Uplands IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	6	\$265,000	\$583,000	0	\$0	\$0
Secondary Effects	3	\$108,000	\$295,000	0	\$0	\$0
Total Effects	9	\$373,000	\$878,000	0	\$0	\$0

P.4.2.17 # 19 Scott River Aquatic Habitat Restoration

This action would occur over a 7-year period from 2013–2019. It is assumed that 100% of total funds would be spent in the region; 80% would be spent in the construction sector and 20% would be spent on administration and management by state and local government. Base funding spent in the region under the No Action Alternative would be \$18.7 million. It is assumed that no additional funding under the KBRA would be spent within the region for this action. Table P-23 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-23. Scott River Aquatic Habitat Restoration IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	159	\$8,198,000	\$18,032,000	0	\$0	\$0
Secondary Effects	82	\$3,317,000	\$9,107,000	0	\$0	\$0
Total Effects	241	\$11,515,000	\$27,139,000	0	\$0	\$0

P.4.2.18 # 20 Scott River US Forest Service Uplands

This action would occur over a 9-year period from 2013–2021. It is assumed that 80% of total funds would be spent in the region and 20% would be spent outside the region. Of the funds spent in the region, 80% would be spent in the construction sector and 20% would be spent on administration and management by state and local government. Base funding spent in the region under the No Action Alternative would be \$0.9 million. Under the KBRA, an additional \$0.4 million would be spent within the region for this action. Table P-24 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-24. Scott River US Forest Service Uplands IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	9	\$420,000	\$923,000	4	\$202,000	\$444,000
Secondary Effects	5	\$170,000	\$466,000	2	\$82,000	\$224,000
Total Effects	14	\$590,000	\$1,389,000	6	\$284,000	\$668,000

P.4.2.19 # 21 Scott River Private Uplands

This action would occur over a 3-year period from 2014–2016. It is assumed that 100% of total funds would be spent in the region; 80% would be spent in the construction sector and 20% would be spent on administration and management by state and local government. Base funding spent in the region under the No Action Alternative would be \$2.1 million. It is assumed that no additional funding under the KBRA would be spent within the region for this action. Table P-25 summarizes regional economic effects of the No Action Alternative.

Table P-25. Scott River Private Uplands IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	19	\$976,000	\$2,130,000	0	\$0	\$0
Secondary Effects	10	\$392,000	\$1,075,000	0	\$0	\$0
Total Effects	29	\$1,368,000	\$3,205,000	0	\$0	\$0

P.4.2.20 # 22 Mid Klamath River and Tributaries Aquatic Habitat Restoration

This action would occur over a 14-year period from 2013–2026. It is assumed that 100% of total funds would be spent in the region; 80% would be spent in the construction sector and 20% would be spent on administration and management by state and local government. Base funding spent in the region under the No Action Alternative would be \$6.8 million. It is assumed that no additional funding under the KBRA would be spent within the region for this action. Table P-26 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-26. Mid Klamath River & Tributaries (Iron Gate to Weitchpec) Aquatic Habitat Restoration IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	58	\$2,956,000	\$6,502,000	0	\$0	\$0
Secondary Effects	30	\$1,196,000	\$3,284,000	0	\$0	\$0
Total Effects	88	\$4,152,000	\$9,786,000	0	\$0	\$0

P.4.2.21 # 23 Mid Klamath Tributaries US Forest Service Uplands

This action would occur over a 14-year period from 2013–2026. It is assumed that 80% of total funds would be spent in the region and 20% would be spent outside the region. Of the funds spent in the region, 80% would be spent in the construction sector and 20% would be spent on administration and management by state and local government. Base funding spent in the region under the No Action Alternative would be \$3.6 million. Under the KBRA, an additional \$4.5 million would be spent within the region for this action. Table P-27 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-27. Mid Klamath Tributaries US Forest Service Upland IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	31	\$1,577,000	\$3,468,000	39	\$2,004,000	\$4,406,000
Secondary Effects	16	\$638,000	\$1,752,000	20	\$811,000	\$2,225,000
Total Effects	47	\$2,215,000	\$5,220,000	59	\$2,815,000	\$6,631,000

P.4.2.22 # 24 Mid Klamath River and Tributaries Private Uplands

This action would occur over a 9-year period from 2013–2021. It is assumed that 100% of total funds would be spent in the region; 80% would be spent in the construction sector and 20% would be spent on administration and management by state and local government. Base funding spent in the region under the No Action Alternative would be \$4.2 million. Under the KBRA, an additional \$1.9 million would be spent within the region for this action. Table P-28 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-28. Mid Klamath Tributaries Private Upland IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	36	\$1,840,000	\$4,046,000	16	\$827,000	\$1,818,000
Secondary Effects	19	\$745,000	\$2,044,000	9	\$335,000	\$918,000
Total Effects	55	\$2,585,000	\$6,090,000	25	\$1,162,000	\$2,736,000

P.4.2.23 # 25 Lower Klamath River and Tributaries Aquatic Habitat Restoration

This action would occur over a 9-year period from 2013–2021. It is assumed that 100% of total funds would be spent in the region; 80% would be spent in the construction sector and 20% would be spent on administration and management by state and local government. Base funding spent in the region under the No Action Alternative would be \$18.2 million. It is assumed that no additional funding under the KBRA would be spent within the region for this action. Table P-29 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-29. Lower Klamath R. & tributaries (Weitchpec to mouth) aquatic habitat restoration IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	154	\$7,971,000	\$17,531,000	0	\$0	\$0
Secondary Effects	80	\$3,225,000	\$8,854,000	0	\$0	\$0
Total Effects	234	\$11,196,000	\$26,385,000	0	\$0	\$0

P.4.2.24 # 26 Lower Klamath River and Tributaries Private Uplands

This action would occur over a 14-year period from 2013–2026. It is assumed that 100% of total funds would be spent in the region; 80% would be spent in the construction sector and 20% would be spent on administration and management by state and local government. Base funding spent in the region under the No Action Alternative would be \$9.9 million. Under the KBRA, an additional \$25.4 million would be spent within the region for this action. Table P-30 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-30. Lower Klamath Private Uplands IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	84	\$4,336,000	\$9,536,000	215	\$11,136,000	\$24,493,000
Secondary Effects	44	\$1,754,000	\$4,816,000	111	\$4,505,000	\$12,370,000
Total Effects	128	\$6,090,000	\$14,352,000	326	\$15,641,000	\$36,863,000

P.4.2.25 # 27 Salmon River Aquatic Habitat Restoration

This action would occur over a 10-year period from 2013–2022. It is assumed that 100% of total funds would be spent in the region; 80% would be spent in the construction sector and 20% would be spent on administration and management by state and local government. Base funding spent in the region under the No Action Alternative would be \$1.6 million. Under the KBRA, an additional \$1.9 million would be spent within the region for this action. Table P-31 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-31. Salmon River Aquatic Habitat Restoration IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	15	\$734,000	\$1,590,000	17	\$858,000	\$1,887,000
Secondary Effects	8	\$295,000	\$810,000	9	\$348,000	\$953,000
Total Effects	23	\$1,029,000	\$2,400,000	26	\$1,206,000	\$2,840,000

P.4.2.26 # 28 Salmon River US Forest Service Uplands

This action would occur over a 14-year period from 2013–2026. It is assumed that 80% of total funds would be spent in the region and 20% would be spent outside the region. Of the funds spent in the region, 80% would be spent in the construction sector and 20% would be spent on administration and management by state and local government. Base funding spent in the region under the No Action Alternative would be \$2.1 million. Under the KBRA, an additional \$2.7 million would be spent within the region for this action. Table P-32 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-32. Salmon River US Forest Service Upland IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	18	\$912,000	\$2,005,000	23	\$1,183,000	\$2,602,000
Secondary Effects	10	\$369,000	\$1,013,000	12	\$479,000	\$1,314,000
Total Effects	28	\$1,281,000	\$3,018,000	35	\$1,662,000	\$3,916,000

P.4.3 Reintroduction Program

Actions under the reintroduction program include planning, construction of new facilities, transport, and monitoring and evaluation. There is no base funding identified for the actions in the reintroduction program. The 4-county region was used for all restoration actions. The Revised Appendix C-2 costs for the reintroduction program actions were escalated from 2007 to 2012 dollars using the GDP implicit price deflator index.

P.4.3.1 # 29 Reintroduction Plan

This action would be implemented each year over the 15-year program. This analysis assumes that 100% of the funds would be spent in the region. Agency officials in state and local governments would implement actions. Under the KBRA, \$1.6 million would be spent within the region over 15 years for this action. Table P-33 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-33. Reintroduction Plan IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	20	\$1,023,000	\$1,332,000
Secondary Effects	0	\$0	\$0	6	\$213,000	\$628,000
Total Effects	0	\$0	\$0	26	\$1,236,000	\$1,960,000

P.4.3.2 # 30 Collection Facility

The Collection Facility includes construction and operation. Funding would be spent over 8 years from 2019 through 2026. It is assumed that 80% of total funds would be spent in the region and 20% would be spent outside the region. Of the funds spent in the region, 80% would be spent in the construction sector and 20% would be spent on administration and management by state and local government. Under the KBRA, \$6 million would be spent within the region over 8 years for this action. Table P-34 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-34. Collection Facility IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	51	\$2,634,000	\$5,793,000
Secondary Effects	0	\$0	\$0	27	\$1,066,000	\$2,926,000
Total Effects	0	\$0	\$0	78	\$3,700,000	\$8,719,000

P.4.3.3 # 31 Production Facility

The Production Facility includes construction and operation. Funding would be spent over 10 years from 2017 through 2026. It is assumed that 80% of total funds would be spent in the region and 20% would be spent outside the region. Of the funds spent in the region, 80% would be spent in the construction sector and 20% would be spent on administration and management by state and local government. Under the KBRA, \$6.1 million would be spent within the region over 10 years for this action. Table P-35 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-35. Production Facility IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	52	\$2,678,000	\$5,890,000
Secondary Effects	0	\$0	\$0	27	\$1,084,000	\$2,975,000
Total Effects	0	\$0	\$0	79	\$3,762,000	\$8,865,000

P.4.3.4 # 32 Acclimation Facility

The Acclimation Facility includes construction and operation. Funding would be spent over 10 years from 2017 through 2026. It is assumed that 80% of total funds would be spent in the region and 20% would be spent outside the region. Of the funds spent in the region, 80% would be spent in the construction sector and 20% would be spent on administration and management by state and local government. Under the KBRA, \$4.7 million would be spent within the region over 10 years for this action. Table P-36 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-36. Acclimation Facility IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	40	\$2,063,000	\$4,536,000
Secondary Effects	0	\$0	\$0	21	\$835,000	\$2,291,000
Total Effects	0	\$0	\$0	61	\$2,898,000	\$6,827,000

P.4.3.5 # 33 Transport

Transport activities would occur annually for 8 years from 2019 through 2026. This analysis assumes that 100% of the funds would be spent in the region. Agency officials in state and local governments would implement actions. Under the KBRA, \$0.8 million would be spent within the region over 8 years for this action. Table P-37 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-37. Transport IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	10	\$519,000	\$675,000
Secondary Effects	0	\$0	\$0	3	\$108,000	\$319,000
Total Effects	0	\$0	\$0	13	\$627,000	\$994,000

P.4.3.6 # 34 Monitoring and Evaluation – Oregon

Monitoring and evaluation would occur each year for the 15 year KBRA implementation period (2012–2026). This analysis assumes that 90% of the funds would be spent in the region and 10% would be spent out of region. Agency officials in state and local governments in the region would implement actions. Under the KBRA, \$29.8 million would be spent within the region over 15 years for this action. Table P-38 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-38. Monitoring and Evaluation – Oregon IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	356	\$18,709,000	\$24,343,000
Secondary Effects	0	\$0	\$0	105	\$3,892,000	\$11,485,000
Total Effects	0	\$0	\$0	461	\$22,601,000	\$35,828,000

P.4.3.7 # 35 Monitoring and Evaluation – California

Monitoring and evaluation would occur each year for the 15 year KBRA implementation period (2012–2026). This analysis assumes that 100% of the funds would be spent in the region. Agency officials in state and local governments would implement actions. Under the KBRA, \$2.9 million would be spent within the region over 15 years for this action. Table P-39 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-39. Monitoring and Evaluation – California IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	36	\$1,879,000	\$2,445,000
Secondary Effects	0	\$0	\$0	11	\$391,000	\$1,154,000
Total Effects	0	\$0	\$0	47	\$2,270,000	\$3,599,000

P.4.3.8 # 36 New Hatchery

The New Hatchery includes construction and operation. Funding would be spent over 8 years from 2014 through 2021. It is assumed that 60% of total funds would be spent in the region and 40% would be spent outside the region. Of the funds spent in the region, 80% would be spent in the construction sector and 20% would be spent on administration and management by state and local government. There is no base funding for this action. Under the KBRA, \$5.5 million would be spent within the region over 8 years for this action. Table P-40 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-40. New Hatchery (IGD or Fall Creek) IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	47	\$2,429,000	\$5,343,000
Secondary Effects	0	\$0	\$0	25	\$983,000	\$2,698,000
Total Effects	0	\$0	\$0	72	\$3,412,000	\$8,041,000

P.4.4 Monitoring Program

The monitoring program includes actions in the Upper and Lower Klamath Basin. For the most part, the majority of funds would be spent in the 4-county region and would be implemented by state and local government. Some actions in the Upper Basin would rely on environmental professionals in local firms. Monitoring costs in the Revised Appendix C-2 were inflated to 2012 dollars using the GDP implicit price deflator. Base funding was identified for most monitoring actions, which is defined below for each action.

P.4.4.1 # 37 Adult Salmonids

This action would occur over 14 years (2013–2026). This analysis assumes that 100% of the funds would be spent in the region. State and local governments would implement monitoring. Base funding spent in the region under the No Action Alternative would be \$7.4 million. Under the KBRA, an additional \$9.9 million would be spent within the region. Table P-41 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-41. Adult Salmonids IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	89	\$4,642,000	\$6,040,000	119	\$6,243,000	\$8,122,000
Secondary Effects	26	\$966,000	\$2,850,000	35	\$1,299,000	\$3,832,000
Total Effects	115	\$5,608,000	\$8,890,000	154	\$7,542,000	\$11,954,000

P.4.4.2 # 38 Juvenile Salmonids

This action would occur over 14 years (2013–2026). This analysis assumes that 100% of the funds would be spent in the region. State and local governments would implement monitoring. Base funding spent in the region under the No Action Alternative would be \$4.1 million. Under the KBRA, an additional \$14.6 million would be spent within the region. Table P-42 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-42. Juvenile Salmonids IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	49	\$2,578,000	\$3,355,000	175	\$9,177,000	\$11,940,000
Secondary Effects	15	\$537,000	\$1,583,000	52	\$1,909,000	\$5,633,000
Total Effects	64	\$3,115,000	\$4,938,000	227	\$11,086,000	\$17,573,000

P.4.4.3 # 39 Genetics Otolith

This action would occur over 14 years (2013–2026). This analysis assumes that 50% of the funds would be spent in the region. State and local governments would implement monitoring. Base funding spent in the region under the No Action Alternative would be \$2.1 million. It is assumed that no additional funding under the KBRA would be spent within the region. Table P-43 summarizes regional economic effects of the No Action Alternative.

Table P-43. Genetics Otololith IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	27	\$1,424,000	\$1,848,000	0	\$0	\$0
Secondary Effects	8	\$296,000	\$871,000	0	\$0	\$0
Total Effects	35	\$1,720,000	\$2,719,000	0	\$0	\$0

P.4.4.4 # 40 Hatchery Tagging

Base funding spent in the region under the No Action Alternative would be \$0.3 million. This analysis assumes that 100% of the funds would be spent in the region. State and local governments would implement monitoring. It is assumed that no additional funding under the KBRA would be spent within the region. Table P-44 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-44. Hatchery Tagging IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	4	\$198,000	\$258,000	0	\$0	\$0
Secondary Effects	2	\$42,000	\$122,000	0	\$0	\$0
Total Effects	6	\$240,000	\$380,000	0	\$0	\$0

P.4.4.5 # 41 Disease

This action would occur over 14 years (2013–2026). This analysis assumes that 70% of the funds would be spent in the region. State and local governments would implement monitoring. Base funding spent in the region under the No Action Alternative would be \$0.3 million. Under the KBRA, an additional \$5.2 million would be spent within the region. Table P-45 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-45. Disease IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	4	\$199,000	\$258,000	63	\$3,271,000	\$4,256,000
Secondary Effects	2	\$42,000	\$122,000	19	\$681,000	\$2,008,000
Total Effects	6	\$241,000	\$380,000	82	\$3,952,000	\$6,264,000

P.4.4.6 # 42 Green Sturgeon

This action would occur over 14 years (2013–2026). This analysis assumes that 95% of the funds would be spent in the region. State and local governments would implement monitoring. Base funding spent in the region under the No Action Alternative would be \$2.5 million. It is assumed that no additional funding under the KBRA would be spent within the region. Table P-46 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-46. Green Sturgeon IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	30	\$1,556,000	\$2,024,000	0	\$0	\$0
Secondary Effects	9	\$324,000	\$955,000	0	\$0	\$0
Total Effects	39	\$1,880,000	\$2,979,000	0	\$0	\$0

P.4.4.7 # 43 Lamprey

This action would occur over 14 years (2013–2026). This analysis assumes that 95% of the funds would be spent in the region. State and local governments would implement monitoring. Base funding spent in the region under the No Action Alternative would be \$0.4 million. Under the KBRA, an additional \$1.8 million would be spent within the region. Table P-47 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-47. Lamprey IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	5	\$233,000	\$303,000	22	\$1,153,000	\$1,500,000
Secondary Effects	2	\$49,000	\$143,000	7	\$240,000	\$708,000
Total Effects	7	\$282,000	\$446,000	29	\$1,393,000	\$2,208,000

P.4.4.8 # 44 Geomorphology

This action would occur over 9 years (2017–2025). This analysis assumes that 60% of the funds would be spent in the region. State and local governments would implement monitoring. Base funding spent in the region under the No Action Alternative would be \$0.1 million. Under the KBRA, an additional \$1.6 million would be spent within the region. Table P-48 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-48. Geomorphology IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	2	\$96,000	\$125,000	20	\$1,009,000	\$1,313,000
Secondary Effects	1	\$20,000	\$59,000	6	\$210,000	\$620,000
Total Effects	3	\$116,000	\$184,000	26	\$1,219,000	\$1,933,000

P.4.4.9 # 45 Habitat Monitoring

This action would occur over 14 years (2013–2026). This analysis assumes that 90% of the funds would be spent in the region. State and local governments would implement monitoring. There is no base funding identified for habitat monitoring. Under the KBRA, \$2.6 million would be spent within the region. Table P-49 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-49. Habitat Monitoring IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	32	\$1,657,000	\$2,156,000
Secondary Effects	0	\$0	\$0	10	\$345,000	\$1,017,000
Total Effects	0	\$0	\$0	42	\$2,002,000	\$3,173,000

P.4.4.10 # 46 Water Quality

This action would occur each year for the 15 year KBRA implementation period (2012-2026). This analysis assumes that 100% of the funds would be spent in the region. 80% would be allocated to state and local governments to implement monitoring and 20% would go to the environmental and other technical consulting sector. Base funding spent in the region under the No Action Alternative would be \$1.5 million. Under the KBRA, an additional \$0.8 million would be spent within the region. Table P-50 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-50. Water Quality IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	19	\$945,000	\$1,318,000	1	\$52,000	\$73,000
Secondary Effects	7	\$231,000	\$667,000	1	\$13,000	\$37,000
Total Effects	26	\$1,176,000	\$1,985,000	2	\$65,000	\$110,000

P.4.4.11 # 47 Upper Klamath Lake Bloom Dynamics

This action would occur over 14 years (2013–2026). This analysis assumes that 100% of the funds would be spent in the region. 80% would be allocated to state and local governments to implement monitoring and 20% would go to the environmental and other technical consulting sector. Base funding spent in the region under the No Action Alternative would be \$1.5 million. It is assumed that no additional funding under the KBRA would be spent within the region. Table P-51 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-51. Upper Klamath Lake Bloom Dynamics IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	19	\$945,000	\$1,318,000	0	\$0	\$0
Secondary Effects	7	\$231,000	\$667,000	0	\$0	\$0
Total Effects	26	\$1,176,000	\$1,985,000	0	\$0	\$0

P.4.4.12 # 48 Upper Klamath Lake Water Quality/Phytoplankton/Zooplankton

This action would occur over 14 years (2013–2026). This analysis assumes that 100% of the funds would be spent in the region. 80% would be allocated to state and local governments to implement monitoring and 20% would go to the environmental and other technical consulting sector. Base funding spent in the region under the No Action Alternative would be \$2 million. Under the KBRA, an additional \$4.1 million would be spent within the region. Table P-52 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-52. Upper Klamath Lake Water Quality/Phytoplankton/Zooplankton IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	25	\$1,236,000	\$1,723,000	51	\$2,535,000	\$3,535,000
Secondary Effects	9	\$301,000	\$872,000	17	\$618,000	\$1,789,000
Total Effects	34	\$1,537,000	\$2,595,000	68	\$3,153,000	\$5,324,000

P.4.4.13 # 49 Upper Klamath Lake Internal Load/Bloom Dynamics

This action would occur over 14 years (2013–2026). This analysis assumes that 100% of the funds would be spent in the region. 80% would be allocated to state and local governments to implement monitoring and 20% would go to the environmental and other technical consulting sector. Base funding spent in the region under the No Action Alternative would be \$1.8 million. Under the KBRA, an additional \$1.2 million would be spent within the region. Table P-53 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-53. Upper Klamath Lake Internal Load/Bloom Dynamics IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	22	\$1,101,000	\$1,536,000	16	\$761,000	\$1,062,000
Secondary Effects	8	\$269,000	\$777,000	5	\$186,000	\$537,000
Total Effects	30	\$1,370,000	\$2,313,000	21	\$947,000	\$1,599,000

P.4.4.14 # 50 Upper Klamath Lake External Nutrient Loading

This action would occur over 14 years (2013–2026). This analysis assumes that 100% of the funds would be spent in the region. 80% would be allocated to state and local governments to implement monitoring and 20% would go to the environmental and other technical consulting sector. Base funding spent in the region under the No Action Alternative would be \$60,000. Under the KBRA, an additional \$3.8 million would be spent within the region. Table P-54 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-54. Upper Klamath Lake External Nutrient Loading IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	1	\$37,000	\$52,000	48	\$2,374,000	\$3,310,000
Secondary Effects	1	\$9,000	\$26,000	16	\$578,000	\$1,675,000
Total Effects	2	\$46,000	\$78,000	64	\$2,952,000	\$4,985,000

P.4.4.15 # 51 Upper Klamath Lake Analysis of Long-Term Data Sets

This action would occur in 2 years (2019 and 2024). This analysis assumes that 100% of the funds would be spent in the region. 80% would be allocated to state and local governments to implement monitoring and 20% would go to the environmental and other technical consulting sector. There is no base funding identified for habitat monitoring. Under the KBRA, \$0.6 million would be spent within the region. Table P-55 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-55. Upper Klamath Lake analysis of long-term data sets IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	8	\$399,000	\$556,000
Secondary Effects	0	\$0	\$0	3	\$98,000	\$282,000
Total Effects	0	\$0	\$0	11	\$497,000	\$838,000

P.4.4.16 # 52 Upper Klamath Lake Listed Suckers

This action would occur over 14 years (2013–2026). This analysis assumes that 100% of the funds would be spent in the region. 80% would be allocated to state and local governments to implement monitoring and 20% would go to the environmental and other technical consulting sector. Base funding spent in the region under the No Action Alternative would be \$8.9 million. Under the KBRA, an additional \$4.3 million would be spent within the region. Table P-56 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-56. Upper Klamath Lake Listed Suckers IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	110	\$5,496,000	\$7,664,000	53	\$2,649,000	\$3,694,000
Secondary Effects	36	\$1,338,000	\$3,878,000	18	\$645,000	\$1,870,000
Total Effects	146	\$6,834,000	\$11,542,000	71	\$3,294,000	\$5,564,000

P.4.4.17 # 53 Tributaries Water Quality/Nutrients/Sediment

This action would occur over 14 years (2013–2026). This analysis assumes that 100% of the funds would be spent in the region. 80% would be allocated to state and local governments to implement monitoring and 20% would go to the environmental and other technical consulting sector. There is no base funding identified for this action. Under the KBRA, \$4.7 million would be spent within the region. Table P-57 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-57. Tributaries Water Quality/Nutrients/Sediment IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	58	\$2,886,000	\$4,024,000
Secondary Effects	0	\$0	\$0	19	\$703,000	\$2,037,000
Total Effects	0	\$0	\$0	77	\$3,589,000	\$6,061,000

P.4.4.18 # 54 Tributaries Geomorphology/Riparian Vegetation

This action would occur over 14 years (2013–2026). This analysis assumes that 100% of the funds would be spent in the region. 80% would be allocated to state and local governments to implement monitoring and 20% would go to the environmental and other technical consulting sector. There is no base funding identified for this action. Under the KBRA, \$3.6 million would be spent within the region. Table P-58 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-58. Tributaries Geomorphology/Riparian Vegetation IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	45	\$2,225,000	\$3,102,000
Secondary Effects	0	\$0	\$0	15	\$542,000	\$1,570,000
Total Effects	0	\$0	\$0	60	\$2,767,000	\$4,672,000

P.4.4.19 # 55 Tributaries Physical Habitat

This action would occur over 14 years (2013–2026). This analysis assumes that 100% of the funds would be spent in the region. 80% would be allocated to state and local governments to implement monitoring and 20% would go to the environmental and other technical consulting sector. There is no base funding identified for this action. Under the KBRA, \$3.2 million would be spent within the region. Table P-59 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-59. Tributaries Physical Habitat IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	40	\$1,983,000	\$2,765,000
Secondary Effects	0	\$0	\$0	13	\$483,000	\$1,399,000
Total Effects	0	\$0	\$0	53	\$2,466,000	\$4,164,000

P.4.4.20 # 56 Tributaries Listed Suckers

This action would occur over 14 years (2013–2026). This analysis assumes that 100% of the funds would be spent in the region. 80% would be allocated to state and local governments to implement monitoring and 20% would go to the environmental and other technical consulting sector. Base funding spent in the region under the No Action Alternative would be \$0.9 million. Under the KBRA, an additional \$4.7 million would be spent within the region. Table P-60 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-60. Tributaries Listed Suckers IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	12	\$569,000	\$794,000	58	\$2,922,000	\$4,074,000
Secondary Effects	4	\$139,000	\$402,000	19	\$712,000	\$2,062,000
Total Effects	16	\$708,000	\$1,196,000	77	\$3,634,000	\$6,136,000

P.4.4.21 # 57 Keno Impoundment Water Quality/Algae/Nutrients

This action would occur over 14 years (2013–2026). This analysis assumes that 100% of the funds would be spent in the region. 80% would be allocated to state and local governments to implement monitoring and 20% would go to the environmental and other technical consulting sector. Base funding spent in the region under the No Action Alternative would be \$70,000. Under the KBRA, an additional \$6 million would be spent within the region. Table P-61 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-61. Keno Impoundment Water Quality/Algae/Nutrients IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	1	\$43,000	\$60,000	74	\$3,700,000	\$5,159,000
Secondary Effects	1	\$11,000	\$31,000	25	\$901,000	\$2,611,000
Total Effects	2	\$54,000	\$91,000	99	\$4,601,000	\$7,770,000

P.4.4.22 # 58 Keno Impoundment to Tributaries: Meteorology

This action would occur over 14 years (2013–2026). This analysis assumes that 100% of the funds would be spent in the region. 80% would be allocated to state and local governments to implement monitoring and 20% would go to the environmental and other technical consulting sector. There is no base funding identified for this action. Under the KBRA, \$3 million would be spent within the region. Table P-62 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-62. Keno Impoundment to Tributaries: Meteorology (weather stations) IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	37	\$1,862,000	\$2,597,000
Secondary Effects	0	\$0	\$0	13	\$454,000	\$1,314,000
Total Effects	0	\$0	\$0	50	\$2,316,000	\$3,911,000

P.4.5 Water Resources Program

This section presents regional economic effects of implementing the water resources programs in the KBRA. As noted above, some water resource program actions that could affect irrigated agriculture and wildlife refuges through water acquisitions or on-farm pumping costs were evaluated separately. The Irrigated Agriculture Economics Technical Report and Refuge Recreation Technical Report describes the regional economic effects of these actions. The Revised Appendix C-2 costs for the water resource program actions were escalated from 2007 to 2012 dollars using the GDP implicit price deflator index. The economic region for the actions varies depending on where the action would occur. The sections below indicate whether the 4-county or 3-county region was used. Water resources program actions analyzed below do not have base funding.

P.4.5.1 # 61 Data Analysis and Evaluation for Provision to TAT

This action would occur over 9 years (2013–2021) in the 4-county region. This analysis assumes that 100% of the funds would be spent in the region. State and local governments in the region would implement actions. Under the KBRA, \$168,000 would be spent within the region over 9 years for this action. Table P-63 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-63. Data Analysis and Evaluation for Provision to TAT IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	2	\$104,000	\$133,000
Secondary Effects	0	\$0	\$0	1	\$22,000	\$64,000
Total Effects	0	\$0	\$0	3	\$126,000	\$197,000

P.4.5.2 # 62 Development of Predictive Techniques

This action would occur over 9 years (2013–2021) in the 4-county region. This analysis assumes that 100% of the funds would be spent in the region. State and local governments in the region would implement actions. Under the KBRA, \$391,000 would be spent within the region over 9 years for this action. Table P-64 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-64. Development of Predictive Techniques IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	5	\$246,000	\$320,000
Secondary Effects	0	\$0	\$0	2	\$52,000	\$151,000
Total Effects	0	\$0	\$0	7	\$298,000	\$471,000

P.4.5.3 # 64 Klamath Basin Wildlife Refuges: Walking Wetland Construction

Funding would occur each year for the 15 year KBRA implementation period (2012-2026) for this action. This action would occur in the 3-county region. This analysis assumes that 100% of the funds would be spent in the region. State and local governments would implement actions. Under the KBRA, \$2.5 million would be spent within the region. Table P-65 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-65. Klamath Basin Wildlife Refuges: Walking Wetland Construction IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	26	\$1,486,000	\$2,500,000
Secondary Effects	0	\$0	\$0	14	\$469,000	\$1,299,000
Total Effects	0	\$0	\$0	40	\$1,955,000	\$3,799,000

P.4.5.4 # 74 Energy Efficiency and Renewable Resources

This action includes funds to construct renewable energy projects to stabilize power costs for irrigation purposes. It is assumed that at least one project could be identified and constructed in the 3-county region that serves Reclamation’s Klamath Project; therefore, about 10% of the total spending would stay in the region and 90% would be outside the region. This action would be implemented in 4 years, from 2013 through 2016. Under the KBRA, \$4.4 million would be spent within the region. Table P-66 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-66. Energy Efficiency and Renewable Resources IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	36	\$1,608,000	\$4,402,000
Secondary Effects	0	\$0	\$0	18	\$670,000	\$1,809,000
Total Effects	0	\$0	\$0	54	\$2,278,000	\$6,211,000

P.4.5.5 # 76 Upper Klamath Lake Wetland Restoration: Agency/Barnes

This action would occur over 5 years, 2016 through 2020, in the 4-county region. This analysis assumes that 90% of the funds would be spent in the region and 10% would be spent out of region. All in-region funds would be spent in the construction sector. Under the KBRA, \$2.7 million would be spent within the region over 5 years for this action. Table P-67 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-67. Upper Klamath Lake Wetlands Restoration: Agency/Barnes IMPLAN Model Results

	No Alternatives Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	21	\$1,062,000	\$2,717,000
Secondary Effects	0	\$0	\$0	13	\$514,000	\$1,391,000
Total Effects	0	\$0	\$0	34	\$1,576,000	\$4,108,000

P.4.5.6 # 77 Upper Klamath Lake Wetland Restoration: Wood River

This action would occur over 5 years, 2017 through 2021, in the 4-county region. This analysis assumes that 90% of the funds would be spent in the region and 10% would be spent out of region. All in-region funds would be spent in the construction sector. Under the KBRA, \$2.7 million would be spent within the region over 10 years for this action. Table P-68 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-68. Upper Klamath Lake Wetlands Restoration: Wood River IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	21	\$1,062,000	\$2,717,000
Secondary Effects	0	\$0	\$0	13	\$514,000	\$1,391,000
Total Effects	0	\$0	\$0	34	\$1,576,000	\$4,108,000

P.4.5.7 # 85 Real Time Water Management: Water Flow Monitoring

This action would occur each year for the 15 year KBRA implementation period (2012-2026) in the 4-county region. This analysis assumes that 100% of the funds would be spent in the region. State and local governments in the region would implement actions. Under the KBRA, \$3.2 million would be spent within the region over 15 years for this action. Table P-69 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-69. Real Time Water Management: Water Flow Monitoring and Gauges IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	39	\$2,032,000	\$2,644,000
Secondary Effects	0	\$0	\$0	12	\$423,000	\$1,248,000
Total Effects	0	\$0	\$0	51	\$2,455,000	\$3,892,000

P.4.5.8 # 87 Adaptive Management: Science and Analysis

This action would occur each year for the 10 year KBRA implementation period (2012-2021) in the 4-county region. This analysis assumes that 100% of the funds would be spent in the region. State and local governments in the region would implement actions. Under the KBRA, \$1.1 million would be spent within the region over 10 years for this action. Table P-70 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-70. Adaptive Management: Science and Analysis IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	13	\$682,000	\$888,000
Secondary Effects	0	\$0	\$0	4	\$142,000	\$419,000
Total Effects	0	\$0	\$0	17	\$824,000	\$1,307,000

P.4.5.9 # 88 Real Time Management: Calibration and Improvement

This action would occur two years (2013 and 2019) in the 4-county region. This analysis assumes that 100% of the funds would be spent in the region. State and local governments in the region would implement actions. Under the KBRA, \$109,000 would be spent within the region for this action. Table P-71 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-71. Real Time Management: Calibration and improvements to KLAMSIM or other modeling and predictions IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	2	\$69,000	\$89,000
Secondary Effects	0	\$0	\$0	1	\$15,000	\$42,000
Total Effects	0	\$0	\$0	3	\$84,000	\$131,000

P.4.6 Regulatory Assurances

There are four actions defined as regulatory assurances; only two are evaluated below. The KBRA identified actions to develop laws for California and Oregon. The states would be responsible for implementing these actions. These actions would provide some local employment to state government staff in the region. Much of the work would occur by state workers outside of the region, which would not affect the regional economy. There is no base funding identified for the actions. The Revised Appendix C-2 costs have been inflated to 2012 dollars using the GDP implicit price deflator index.

P.4.6.1 # 90 Keno Impoundment Klamath Irrigation Project Screening

This action would occur in 4 years (2017–2020). This action is assumed to occur in the 4-county region. This analysis assumes that 20% of the funds would be spent in the region and 80% would be spent out of region. All in-region expenditures would be in the construction sector. Under the KBRA, \$5.5 million would be spent within the region for this action. Table P-72 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-72. Keno Impoundment KIP Screening IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	42	\$2,137,000	\$5,470,000
Secondary Effects	0	\$0	\$0	25	\$1,033,000	\$2,800,000
Total Effects	0	\$0	\$0	67	\$3,170,000	\$8,270,000

P.4.6.2 # 91 Federal General Conservation Plans/Habitat Conservation Plans

This action would occur over 8 years (2015–2022). This action is assumed to occur in the 4-county region. This analysis assumes that 85% of the funds would be spent in the region and 15% would be spent out of region. State and local governments in the region

would implement actions within the region. Under the KBRA, \$5.1 million would be spent within the region over 8 years for this action. Table P-73 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-73. Federal GCP/HCP IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	61	\$3,188,000	\$4,148,000
Secondary Effects	0	\$0	\$0	18	\$663,000	\$1,957,000
Total Effects	0	\$0	\$0	79	\$3,851,000	\$6,105,000

P.4.7 Counties Program

There are two KBRA actions with funding under the counties program. The first action is funding to Klamath County of \$3.2 million in 2016. The second action is funding to Siskiyou County of \$20 million in 2018. There is no federal funding for these actions, so they are not included in the Revised Appendix C-2. These costs are based on the original Appendix C2 and were assumed to be nominal dollars and not escalated. The respective states, Oregon and California, would fund these actions. At this time, it is difficult to predict how counties would use funds within the region; therefore, effects are not quantified. Funds would likely be spent across various sectors of the economy. Spending is assumed to occur locally and would substantially increase income, employment, and output in the region. There would be positive regional economic benefits associated with implementing these actions. Section 3.15, Socioeconomics, of the EIS/EIR provides a qualitative analysis of these actions.

P.4.8 Tribal Program

The tribal program includes fisheries management, conservation management, and economic development programs for the Karuk, Klamath, and Yurok Tribes. For these actions, money would be given to tribal governments to implement fisheries, conservation, and economic programs. This analysis assumes that the tribes would spend KBRA dollars within the government to implement the actions. There is base funding identified for the fisheries and conservation management actions. There is no base funding for the economic development actions. It is assumed that all funds going to tribes would be spent within the region. Funds in the Revised Appendix C-2 were assumed to be nominal dollars and were not escalated.

IMPLAN does not specify a tribal government sector. Similar to local and state governments, tribal governments spend money on a variety of functions including employee payroll, planning, research, legal, financial and cultural activities, natural resources work, economic development and many others. This analysis assumes that tribal government spending would be similar to state and local governments and uses the

State and Local Government Non-Education spending pattern to evaluate effects of the tribal program. Actions were assumed to occur in the 4-county region.

The tribal program also includes an action to purchase the Mazama Forest lands for the Klamath Tribes. There is no base funding for this action. The Mazama Forest Project would be a transfer of funds from the government to a private land owner, then the land would be given to the Klamath Tribes. The Klamath Tribes would benefit from the purchased land. At this time, it is not possible to identify direct effects of the Klamath Tribes use of the forest lands. Therefore, regional economic effects are not quantified for this action. It is assumed that once the Klamath Tribes own and use the land beneficially, and there would be positive economic effects to the region.

P.4.8.1 # 100 Fisheries Management Karuk

This action would occur over 15 years (2012–2026). This analysis assumes that 100% of the funds would be spent in the region in Siskiyou County. Of the in-region spending, 100% would be spent on tribal salaries. Base funding spent in the region under the No Action Alternative would be \$10.4 million. Under the KBRA, \$4 million would be spent within the region over 15 years for this action. Table P-74 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-74. Fisheries Management Karuk IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	138	\$6,396,000	\$8,276,000	54	\$2,464,000	\$3,188,000
Secondary Effects	31	\$1,109,000	\$3,367,000	12	\$427,000	\$1,297,000
Total Effects	169	\$7,505,000	\$11,643,000	66	\$2,891,000	\$4,485,000

P.4.8.2 # 101 Fisheries Management Klamath Tribes

This action would occur over 15 years (2012–2026). This analysis assumes that 100% of the funds would be spent in Klamath County. Of the in-region spending, 5% would be spent on construction activities and 95% would be spent on tribal salaries. Base funding spent in the region under the No Action Alternative would be \$8.9 million. Under the KBRA, \$5.5 million would be spent within the region over 15 years for this action. Table P-75 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-75. Fisheries Management Klamath IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	89	\$4,905,000	\$6,813,000	55	\$3,000,000	\$4,167,000
Secondary Effects	29	\$1,030,000	\$2,904,000	18	\$630,000	\$1,776,000
Total Effects	118	\$5,935,000	\$9,717,000	73	\$3,630,000	\$5,943,000

P.4.8.3 # 102 Fisheries Management Yurok Tribe

This action would occur over 15 years (2012–2026). This analysis assumes that 100% of the funds would be spent in Humboldt County. Of the in-region spending, 16% would be spent on construction activities and 74% would be spent on tribal salaries and the remaining 10% would be spent on professional and engineering services. Base funding spent in the region under the No Action Alternative would be \$8.9 million. Under the KBRA, \$5.5 million would be spent within the region over 15 years for this action. Table P-76 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-76. Fisheries Management Yurok IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	103	\$5,323,000	\$7,852,000	65	\$3,331,000	\$4,913,000
Secondary Effects	38	\$1,469,000	\$4,256,000	24	\$921,000	\$2,668,000
Total Effects	141	\$6,792,000	\$12,108,000	89	\$4,252,000	\$7,581,000

P.4.8.4 # 104 Conservation Management Karuk Tribe

This action would occur over 15 years (2012–2026). This analysis assumes that 100% of the funds would be spent in Siskiyou County. Of the in-region spending, 100% would be spent on tribal salaries. Base funding spent in the region under the No Action Alternative would be \$4.2 million. Under the KBRA, \$3 million would be spent within the region over 15 years for this action. Table P-77 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-77. Conservation Management Karuk IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	56	\$2,567,000	\$3,321,000	41	\$1,864,000	\$2,412,000
Secondary Effects	12	\$445,000	\$1,351,000	9	\$323,000	\$981,000
Total Effects	68	\$3,012,000	\$4,672,000	50	\$2,187,000	\$3,393,000

P.4.8.5 # 105 Conservation Management Klamath Tribes

This action would occur over 15 years (2012–2026). This analysis assumes that 100% of the funds would be spent in Klamath County. Of the in-region spending, 5% would be spent on construction activities and 95% would be spent on tribal salaries. Base funding spent in the region under the No Action Alternative would be \$4.2 million. Under the KBRA, \$3 million would be spent within the region over 15 years for this action. Table P-78 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-78. Conservation Management Klamath IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	42	\$2,290,000	\$3,181,000	31	\$1,663,000	\$2,311,000
Secondary Effects	14	\$481,000	\$1,356,000	10	\$350,000	\$985,000
Total Effects	56	\$2,771,000	\$4,537,000	41	\$2,013,000	\$3,296,000

P.4.8.6 # 106 Conservation Management Yurok Tribe

This action would occur over 15 years (2012–2026). This analysis assumes that funds would be spent in Humboldt County and Del Norte County. Of the in-region spending, 18% would be spent on construction activities and 72% would be spent on tribal salaries and the remaining 10% would be spent on professional and engineering services. Base funding spent in the region under the No Action Alternative would be \$4.2 million. Under the KBRA, \$3 million would be spent within the region over 15 years for this action. Table P-79 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-79. Conservation Management Yurok IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	49	\$2,490,000	\$3,706,000	35	\$1,808,000	\$2,691,000
Secondary Effects	18	\$698,000	\$2,018,000	14	\$507,000	\$1,465,000
Total Effects	67	\$3,188,000	\$5,724,000	49	\$2,315,000	\$4,156,000

P.4.8.7 # 108 Economic Development Karuk Tribe

This action would occur over 1 year (2013). 100% of the funds would be spent in the region on professional and engineering services. It is assumed professional and engineering services would be available in the 4-county region. Under the KBRA, \$0.2 million would be spent within the region for this action. Table P-80 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-80. Economic Development Study Karuk IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	4	\$140,000	\$250,000
Secondary Effects	0	\$0	\$0	2	\$57,000	\$156,000
Total Effects	0	\$0	\$0	6	\$197,000	\$406,000

P.4.8.8 # 109 Economic Development Klamath Tribes

This action would occur over 1 year (2013). 100% of the funds would be spent in the region on professional and engineering services. It is assumed professional and engineering services would be available in the 4-county region. Under the KBRA, \$0.2 million would be spent within the region for this action. Table P-81 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-81. Economic Development Study Klamath Tribes IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	4	\$140,000	\$250,000
Secondary Effects	0	\$0	\$0	2	\$57,000	\$156,000
Total Effects	0	\$0	\$0	6	\$197,000	\$406,000

P.4.8.9 # 110 Economic Development Yurok

This action would occur over 1 year (2013). 100% of the funds would be spent in the region on professional and engineering services. It is assumed professional and engineering services would be available in the 4-county region. Under the KBRA, \$0.2 million would be spent within the region for this action. Table P-82 summarizes regional economic effects of this action under KBRA relative to the No Action Alternative.

Table P-82. Economic Development Study Yurok IMPLAN Model Results

	No Action Alternative (Base Funding)			KBRA Relative to No Action Alternative (over and above Base Funding)		
	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)	Employment (Jobs)	Labor Income (Dollars)	Output (Dollars)
Direct Effects	0	\$0	\$0	4	\$140,000	\$250,000
Secondary Effects	0	\$0	\$0	2	\$57,000	\$156,000
Total Effects	0	\$0	\$0	6	\$197,000	\$406,000

P.4.9 Regional Economic Effects Summary

Table P-83 summarizes regional economic effects of each action under base funding for the No Action Alternative and the KBRA for the Facilities Removal Alternatives relative to the No Action Alternative. The effects of the KBRA are in addition to the effects of base funding under the No Action Alternative. The total effects shown in Table P-83 would occur over a 15-year period from 2012 through 2026; they are not annual effects. Effects per year would vary based on the implementation schedule identified in Revised Appendix C-2.

Base funding of \$196.2 million over 15 years under the No Action Alternative would support 2,629 jobs, \$125.4 million in labor income, and \$253.8 million in economic output within the 4-county region (Klamath, Siskiyou, Del Norte, and Humboldt Counties). There is no based funding associated with projects in the 3-county region. Implementation of the KBRA under the Facilities Removal Alternatives would support an additional 4,598 jobs, \$218.8 million in labor income, and \$439.6 million in economic

output relative to the No Action Alternative within the 4-county region (Klamath, Siskiyou, Del Norte, and Humboldt Counties) and 94 jobs, \$4.2 million in labor income, and \$10 million in economic output relative to the No Action Alternative within the 3-county region (Klamath, Siskiyou and Modoc Counties).

Table P-83. KBRA Regional Economic Effects Summary (2012 dollars)

#	KBRA Action	Action span (years)	Total Effects ¹ of Base Funding			Total Effects ¹ of KBRA Funding (over and above Base Funding)		
			Employment (Jobs) ²	Labor Income (1000\$) ³	Output (1000\$) ⁴	Employment (Jobs) ²	Labor Income (1000\$) ³	Output (1000\$) ⁴
1	Coordination and Oversight	15	22	\$1,024	\$1,622	3	\$90	\$142
2	Planning & Implementation - Phase I and II Restoration Plans	4	7	\$319	\$505	20	\$918	\$1,456
3	Williamson River aquatic habitat restoration	14	50	\$2,378	\$5,277	12	\$568	\$1,258
4	Sprague River aquatic habitat restoration	15	147	\$7,000	\$16,086	546	\$26,206	\$60,228
5	Wood River Valley aquatic habitat restoration	15	39	\$1,801	\$4,420	136	\$6,476	\$15,892
6	Williamson Sprague Wood Screening Diversion	14	0	\$0	\$0	28	\$1,334	\$3,306
9	Screening of UKL pumps	14	0	\$0	\$0	6	\$255	\$632
7	Williamson & Sprague USFS uplands	14	62	\$2,921	\$6,712	64	\$3,049	\$7,007
8	Upper Klamath Lake aquatic habitat restoration	9	38	\$1,770	\$4,476	134	\$6,365	\$16,105
10	UKL watershed USFS uplands	4	16	\$724	\$1,663	23	\$1,024	\$2,354
11	Keno Impoundment water quality studies & remediation actions	14	0	\$0	\$0	366	\$17,443	\$44,360
12	Keno Impoundment wetlands restoration	4	29	\$1,325	\$3,369	13	\$594	\$1,508
13	Keno to Iron Gate upland private & BLM	No funding identified in C2						
14	Keno to Iron Gate upland USFS (Gooseneck)	14	8	\$311	\$732	10	\$440	\$1,036
15	Keno to Iron Gate mainstem restoration	9	0	\$0	\$0	13	\$620	\$1,321
16	Keno to Iron Gate tributaries - diversions & riparian	3	0	\$0	\$0	16	\$744	\$1,585
17	Shasta River aquatic habitat restoration	15	166	\$7,991	\$17,613	0	\$0	\$0
18	Shasta River USFS uplands	0	9	\$373	\$878	0	\$0	\$0
20	Scott River USFS uplands	9	14	\$590	\$1,389	6	\$284	\$668
23	Mid Klamath tributaries USFS upland	14	47	\$2,215	\$5,220	59	\$2,815	\$6,631
28	Salmon River USFS upland	14	28	\$1,281	\$3,018	35	\$1,662	\$3,916

Table P-83. KBRA Regional Economic Effects Summary (2012 dollars)

#	KBRA Action	Action span (years)	Total Effects ¹ of Base Funding			Total Effects ¹ of KBRA Funding (over and above Base Funding)		
			Employment (Jobs) ²	Labor Income (1000\$) ³	Output (1000\$) ⁴	Employment (Jobs) ²	Labor Income (1000\$) ³	Output (1000\$) ⁴
19	Scott River aquatic habitat restoration	7	241	\$11,515	\$27,139	0	\$0	\$0
21	Scott River private uplands	3	29	\$1,368	\$3,205	0	\$0	\$0
24	Mid Klamath tributaries private upland	9	55	\$2,585	\$6,090	25	\$1,162	\$2,736
26	Lower Klamath private uplands	14	128	\$6,090	\$14,352	326	\$15,641	\$36,863
22	Mid Klamath River & tributaries (Iron Gate to Weitchpec) aquatic habitat restoration	14	88	\$4,152	\$9,786	0	\$0	\$0
25	Lower Klamath River & tributaries (Weitchpec to mouth) aquatic habitat restoration	9	234	\$11,196	\$26,385	0	\$0	\$0
27	Salmon River aquatic habitat restoration	10	23	\$1,029	\$2,400	26	\$1,206	\$2,840
29	Reintroduction Plan	15	0	\$0	\$0	26	\$1,236	\$1,960
30	Collection Facility	8	0	\$0	\$0	78	\$3,700	\$8,719
31	Production Facility	10	0	\$0	\$0	79	\$3,762	\$8,865
32	Acclimation Facility	10	0	\$0	\$0	61	\$2,898	\$6,827
33	Transport	8	0	\$0	\$0	13	\$627	\$994
34	Monitoring and Evaluation – Oregon	15	0	\$0	\$0	461	\$22,601	\$35,828
35	Monitoring and Evaluation – California	15	0	\$0	\$0	47	\$2,270	\$3,599
36	New Hatchery (IGD or Fall Creek)	8	0	\$0	\$0	72	\$3,412	\$8,041
37	Adult Salmonids	14	115	\$5,608	\$8,890	154	\$7,542	\$11,954
38	Juvenile Salmonids	14	64	\$3,115	\$4,938	227	\$11,086	\$17,573
39	Genetics Otololith	14	35	\$1,720	\$2,719	0	\$0	\$0
40	Hatchery Tagging	0	6	\$240	\$380	0	\$0	\$0
41	Disease	14	6	\$241	\$380	82	\$3,952	\$6,264
42	Green Sturgeon	14	39	\$1,880	\$2,979	0	\$0	\$0
43	Lamprey	14	7	\$282	\$446	29	\$1,393	\$2,208
44	Geomorphology	9	3	\$116	\$184	26	\$1,219	\$1,933
45	Habitat Monitoring	14	0	\$0	\$0	42	\$2,002	\$3,173
46	Water Quality	15	26	\$1,176	\$1,985	2	\$65	\$110
47	UKL bloom dynamics	14	26	\$1,176	\$1,985	0	\$0	\$0
48	UKL water quality/ phytoplankton/ zooplankton	14	34	\$1,537	\$2,595	68	\$3,153	\$5,324
49	UKL internal load/ bloom dynamics	14	30	\$1,370	\$2,313	21	\$947	\$1,599
50	UKL external nutrient loading	14	2	\$46	\$78	64	\$2,952	\$4,985

Table P-83. KBRA Regional Economic Effects Summary (2012 dollars)

#	KBRA Action	Action span (years)	Total Effects ¹ of Base Funding			Total Effects ¹ of KBRA Funding (over and above Base Funding)		
			Employment (Jobs) ²	Labor Income (1000\$) ³	Output (1000\$) ⁴	Employment (Jobs) ²	Labor Income (1000\$) ³	Output (1000\$) ⁴
51	UKL analysis of long-term data sets	3	0	\$0	\$0	11	\$497	\$838
52	UKL listed suckers	14	146	\$6,834	\$11,542	71	\$3,294	\$5,564
53	Tributaries water quality/nutrients/sediment	14	0	\$0	\$0	77	\$3,589	\$6,061
54	Tributaries geomorphology/riparian vegetation	14	0	\$0	\$0	60	\$2,767	\$4,672
55	Tributaries physical habitat	14	0	\$0	\$0	53	\$2,466	\$4,164
56	Tributaries listed suckers	14	16	\$708	\$1,196	77	\$3,634	\$6,136
57	Keno Impoundment water quality/algae/nutrients	14	2	\$54	\$91	99	\$4,601	\$7,770
58	Keno Impoundment to Tributaries: Meteorology (weather stations)	14	0	\$0	\$0	50	\$2,316	\$3,911
59	Remote Sensing acquisition and analysis	No in-region spending, no regional economic effects						
60	Keno Dam fish passage	No in-region spending, no regional economic effects						
63	Klamath Basin Wildlife Refuges: O&M North and P Canals	No funding identified in C2						
64	Klamath Basin Wildlife Refuges: Walking Wetland Construction	15	0	\$0	\$0	40	\$1,955	\$3,799
65	Klamath Basin Wildlife Refuges: Big Pond Dike Construction	No funding identified in C2						
66	On Project water plan	Evaluated in Irrigated Agriculture Economics Technical Report						
67	Groundwater Technical Investigation	No in-region spending, no regional economic effects						
68	Costs Associated with Remedy for Adverse Impact	No funding identified in C2						
69	D Pumping Plant	Transfer payment, no regional economic effects						
70	Water Use Retirement Plan	Evaluated in Irrigated Agriculture Economics Technical Report						
71	Off Project Plan and Program: Use of 30K ac ft above UKL	Evaluated in Irrigated Agriculture Economics Technical Report						
72	Interim Power Sustainability	Evaluated in Irrigated Agriculture Economics Technical Report						
73	Federal Power	Transfer payment, no regional economic effects						
74	Energy Efficiency and Renewable Resources	4	0	\$0	\$0	54	\$2,278	\$6,211
75	Renewable Power Program Financial and Engineering Plan	No in-region spending, no regional economic effects						

Table P-83. KBRA Regional Economic Effects Summary (2012 dollars)

#	KBRA Action	Action span (years)	Total Effects ¹ of Base Funding			Total Effects ¹ of KBRA Funding (over and above Base Funding)		
			Employment (Jobs) ²	Labor Income (1000\$) ³	Output (1000\$) ⁴	Employment (Jobs) ²	Labor Income (1000\$) ³	Output (1000\$) ⁴
76	UKL Wetlands Restoration: Agency/Barnes	5	0	\$0	\$0	34	\$1,576	\$4,108
77	UKL Wetlands Restoration: Wood River	5	0	\$0	\$0	34	\$1,576	\$4,108
78	Drought Plan Development	Action near complete						
79	Drought Plan Restoration Agreement Fund	Evaluated in Irrigated Agriculture Economics Technical Report						
80	Emergency Response Plan	No funding identified in C2						
81	Emergency Response Fund	No funding identified in C2						
82	Technical Assessment of Climate Change	No in-region spending, no regional economic effects						
83	Off-Project Reliance Program	Evaluated in Irrigated Agriculture Economics Technical Report						
84	Real Time Water Management	No funding identified in C2						
85	Real Time Water Management: Water Flow Monitoring and Gauges	15	0	\$0	\$0	51	\$2,455	\$3,892
86	Snowpack Gauges	No funding identified in C2						
87	Adaptive Management: Science and Analysis	10	0	\$0	\$0	17	\$824	\$1,307
88	Real Time Management: Calibration and improvements to KLAMSIM or other modeling and predictions	2	0	\$0	\$0	3	\$84	\$131
61	Data Analysis and evaluation for provision to TAT	9	0	\$0	\$0	3	\$126	\$197
62	Development of predictive techniques	9	0	\$0	\$0	7	\$298	\$471
89	Interim Flow and Lake Level Program	Evaluated in Irrigated Agriculture Economics Technical Report						
90	Keno Impoundment KIP Screening	4	0	\$0	\$0	67	\$3,170	\$8,270
91	Federal GCP/HCP	8	0	\$0	\$0	79	\$3,851	\$6,105
92	California Laws	No funding identified in C2, state would pay for program						
93	Oregon Laws	No funding identified in C2, state would pay for program						
94	Klamath County Study	No funding identified in C2						
95	Klamath County	\$3.2 million to Klamath County, unknown how funds would be spent at this time. Effects not quantified. Expected to result in positive regional economic effects to employment, labor income and output						
96	Siskiyou County	\$20 million to Siskiyou County, unknown how funds would be spent at this time. Effects not quantified. Expected to result in positive regional economic effects to employment, labor income and output						
97	Humboldt County	No funding identified in C2						

Table P-83. KBRA Regional Economic Effects Summary (2012 dollars)

#	KBRA Action	Action span (years)	Total Effects ¹ of Base Funding			Total Effects ¹ of KBRA Funding (over and above Base Funding)		
			Employment (Jobs) ²	Labor Income (1000\$) ³	Output (1000\$) ⁴	Employment (Jobs) ²	Labor Income (1000\$) ³	Output (1000\$) ⁴
98	Del Norte County		No funding identified in C2					
99	Fisheries Management Hoopa Valley Tribe		Upon becoming a Party to the KBRA in accordance with Section 38, the Hoopa Valley Tribe will be eligible for funding in categories and amounts for each of the other tribes in line items 99 through 110					
100	Fisheries Management Karuk	15	169	\$7,505	\$11,643	66	\$2,891	\$4,485
101	Fisheries Management Klamath	15	118	\$5,935	\$9,717	73	\$3,630	\$5,943
102	Fisheries Management Yurok	15	141	\$6,792	\$12,108	89	\$4,252	\$7,581
103	Conservation Management Hoopa Valley Tribe	0	Upon becoming a Party to the KBRA in accordance with Section 38, the Hoopa Valley Tribe will be eligible for funding in categories and amounts for each of the other tribes in line items 99 through 110					
104	Conservation Management Karuk	15	68	\$3,012	\$4,672	50	\$2,187	\$3,393
105	Conservation Management Klamath	15	56	\$2,771	\$4,537	41	\$2,013	\$3,296
106	Conservation Management Yurok	15	67	\$3,188	\$5,724	49	\$2,315	\$4,156
107	Economic Development Study Hoopa Valley Tribe		Upon becoming a Party to the KBRA in accordance with Section 38, the Hoopa Valley Tribe will be eligible for funding in categories and amounts for each of the other tribes in line items 99 through 110					
108	Economic Development Study Karuk	1	0	\$0	\$0	6	\$197	\$406
109	Economic Development Study Klamath	1	0	\$0	\$0	6	\$197	\$406
110	Economic Development Study Yurok	1	0	\$0	\$0	6	\$197	\$406
111	Klamath Tribes: Mazama Forest Project		Transfer payment to private owner for land purchase for tribe, total is \$21 million. Regional effects not quantified. Tribe would benefit in future from use of forest lands.					
112	Fishing Sites		No funding identified in C2					

Source: IMPLAN presented in 2012 dollars

UKL: Upper Klamath Lake

USFS: United States Forest Service

BLM: Bureau of Land Management

¹ Total Effect = Direct + Indirect + Induced Effects

² Employment is measured in number of jobs (full-time, part-time, and temporary). Construction-related employment estimates include the in-field workforce plus all additional jobs generated by project construction expenditures, e.g., in retail, services, manufacturing, and other related sectors throughout the economy.

³ Income is the dollar value of total payroll (including benefits) for each industry in the analysis area plus income received by self-employed individuals located within the analysis area.

⁴ Output represents the dollar value of industry production.

P.5 References

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Table 1: Revised Appendix C-2, Cost Estimates for Federal Funding to Implement the Klamath Basin Restoration Agreement

June 20, 2011
(\$2007 Millions)

Program	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Total
Coordination	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 0.1	\$ 1.5
Fisheries																
Restoration	\$ 0.9	\$ 7.9	\$ 10.7	\$ 12.5	\$ 14.5	\$ 16.6	\$ 21.9	\$ 44.4	\$ 44.0	\$ 21.7	\$ 15.4	\$ 13.4	\$ 11.5	\$ 9.9	\$ 8.3	\$ 253.4
Reintroduction	\$ 0.4	\$ 1.3	\$ 1.9	\$ 2.4	\$ 2.6	\$ 4.2	\$ 13.9	\$ 5.3	\$ 8.5	\$ 4.8	\$ 3.6	\$ 3.6	\$ 3.6	\$ 3.6	\$ 3.6	\$ 63.4
Monitoring	\$ 0.1	\$ 5.9	\$ 6.3	\$ 5.9	\$ 5.9	\$ 6.2	\$ 6.7	\$ 7.3	\$ 8.2	\$ 8.3	\$ 8.8	\$ 8.8	\$ 9.2	\$ 8.9	\$ 8.6	\$ 104.7
Water Resources	\$ 10.4	\$ 30.7	\$ 36.8	\$ 31.7	\$ 33.2	\$ 29.4	\$ 29.7	\$ 30.5	\$ 14.3	\$ 3.7	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 1.5	\$ 257.8
Regulatory Assurances	\$ -	\$ -	\$ -	\$ 0.4	\$ 1.0	\$ 0.8	\$ 1.0	\$ 12.4	\$ 14.3	\$ 0.5	\$ 0.5	\$ -	\$ -	\$ -	\$ -	\$ 30.7
Counties*	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Tribes	\$ 12.3	\$ 16.3	\$ 4.5	\$ 4.5	\$ 4.5	\$ 4.5	\$ 4.5	\$ 4.5	\$ 4.5	\$ 4.5	\$ 4.5	\$ 4.5	\$ 4.5	\$ 4.5	\$ 4.5	\$ 87.0
TOTAL KBRA COSTS*	\$ 24.2	\$ 62.1	\$ 60.4	\$ 57.4	\$ 61.8	\$ 61.8	\$ 77.7	\$ 104.4	\$ 93.9	\$ 43.5	\$ 34.2	\$ 31.9	\$ 30.4	\$ 28.4	\$ 26.5	\$ 798.5

*This is not a Federal budget product, it was developed by the states, agency representatives, tribes, and other non-federal parties to the KBRA.

Table 1: Detailed Cost Estimates for the Klamath Basin Settlement Agreement

(\$2007 Thousands)

#	Project	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	SUM
1	Coordination and Oversight	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1,500
2	Planning & Impl. -- Ph. I and Ph. II Restoration Plans	700	200	-	-	-	-	-	-	1,000	600	-	-	-	-	-	2,500
3	Williamson R. aquatic habitat restoration	-	223	336	358	459	330	402	443	390	425	419	155	155	155	23	4,272
4	Sprague R. aquatic habitat restoration	108	1,347	3,302	3,494	3,947	2,965	3,465	4,636	4,912	5,204	5,436	5,063	3,127	1,628	466	49,099
5	Wood R. Valley aquatic habitat restoration	27	182	369	433	681	936	3,021	2,112	761	1,564	1,411	431	415	314	27	12,684
6	Williamson Sprague Wood Screening Diversion (n=100)	-	209	209	209	209	209	209	209	209	209	209	209	209	209	211	2,933
7	Williamson & Sprague USFS uplands	-	500	500	800	800	800	800	800	800	800	800	800	800	1,000	1,000	11,000
8	Upper Klamath Lake aquatic habitat restoration	-	29	48	48	298	519	1,125	4,999	4,999	625	-	-	-	-	-	12,692
9	Screening of UKL pumps (Underway)	-	35	35	35	35	35	35	35	35	35	35	35	35	35	35	489
10	UKL watershed USFS uplands	-	-	-	-	-	-	220	1,000	1,000	1,000	-	-	-	-	-	3,220
11	UKL and Keno nutrient reduction	-	1,132	1,132	1,132	1,132	2,253	17,574	17,574	17,574	901	901	901	901	901	901	49,589
12	Keno Res. wetlands restoration	-	-	-	-	-	125	125	2,248	2,498	-	-	-	-	-	-	4,995
13	Keno to Iron Gate upland private & BLM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	Keno to Iron Gate upland USFS (Gooseneck)	-	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1,400
15	Keno to Iron Gate mainstem restoration	-	100	100	100	100	100	150	200	200	200	-	-	-	-	-	1,250
16	Keno to Iron Gate tributaries - diversions & riparian	-	-	-	-	500	500	500	-	-	-	-	-	-	-	-	1,500
17	Shasta River aquatic habitat restoration	100	200	200	500	500	900	1,000	1,000	1,200	1,200	1,200	1,200	1,200	1,000	1,000	12,400
18	Shasta R. USFS uplands	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	Scott River aquatic habitat restoration	-	100	500	750	900	900	900	900	-	-	-	-	-	-	-	4,950
20	Scott R. USFS uplands	-	100	250	300	100	150	150	200	200	180	-	-	-	-	-	1,630
21	Scott R. private uplands	-	-	125	200	250	-	-	-	-	-	-	-	-	-	-	575
22	Mid-Klamath & tribs aquatic habitat restoration	-	200	200	250	350	350	400	400	400	400	400	400	400	400	400	4,950
23	Mid Klamath tribs USFS upland	-	600	600	600	600	600	600	600	600	700	750	750	750	750	750	9,400
24	Mid Klamath tribs private upland	-	600	600	600	600	600	600	600	700	700	-	-	-	-	-	5,600
25	Lower Klamath aquatic habitat restoration	-	500	500	900	1,200	1,900	2,000	2,500	2,500	3,000	-	-	-	-	-	15,000
26	Lower Klamath private/tribal uplands	-	1,000	1,000	1,000	1,000	1,500	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	32,500
27	Salmon River aquatic hab restoration	-	200	200	300	300	400	400	400	400	400	320	-	-	-	-	3,320
28	Salmon R. USFS upland	-	300	400	400	400	400	400	400	400	400	400	400	400	400	400	5,500
29	Reintroduction Plan	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1,500
30	Collection Facility	-	-	-	-	-	-	-	988	4,238	500	238	238	238	238	238	6,916
31	Production Facility	-	-	-	-	-	750	4,000	285	285	285	285	285	285	285	285	7,030
32	Acclimation Facility	-	-	-	-	-	850	2,285	285	285	285	285	285	285	285	285	5,415
33	Transport	-	-	-	-	-	-	-	95	95	95	95	95	95	95	95	760
34	Monitoring and Evaluation - Oregon	190	1,000	1,500	2,000	2,200	2,200	2,200	2,400	2,400	2,400	2,400	2,400	2,400	2,400	2,400	30,490
35	Monitoring and Evaluation - California	95	190	190	190	190	190	190	190	190	190	190	190	190	190	190	2,755
36	New Hatchery (IGD or Fall Creek)	-	-	143	143	143	143	5,083	950	950	950	-	-	-	-	-	8,503
37	Adult Salmonids	-	607	607	607	607	607	607	607	1,607	1,685	1,685	1,685	1,685	1,685	1,685	15,963
38	Juvenile Salmonids	-	471	471	471	471	471	971	1,116	1,471	1,471	1,971	1,971	1,971	1,971	1,971	17,240
39	Genetics Otolith	-	80	80	80	80	80	80	100	100	100	100	100	100	100	100	1,500
40	Hatchery Tagging (PacifiCorp paying costs under KHSA)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
41	Disease	-	519	519	519	519	519	519	519	519	519	519	519	519	519	519	7,268
42	Green Sturgeon	-	161	161	161	161	161	161	161	161	161	161	161	161	161	161	2,256
43	Lamprey	-	153	153	153	153	153	153	153	153	153	153	153	153	153	153	2,138
44	Geomorphology	-	-	-	-	-	300	300	300	300	300	300	300	300	300	300	2,700

Table 1: Detailed Cost Estimates for the Klamath Basin Settlement Agreement

(\$2007 Thousands)

#	Project	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	SUM
45	Habitat Monitoring	-	193	193	193	193	193	193	193	193	193	193	193	193	193	193	2,700
46	Water Quality	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1,500
47	UKL continuous water quality, hydrodynamic model	-	100	100	100	100	100	100	100	100	100	100	100	100	100	100	1,400
48	UKL nutrients/algae/zooplankton	-	405	405	405	405	405	405	405	405	405	405	405	405	405	405	5,670
49	UKL internal load/bloom dynamics	-	200	200	200	200	200	200	200	200	200	200	200	200	200	200	2,800
50	UKL external nutrient loading	-	259	259	259	259	259	259	259	259	259	259	259	259	259	259	3,626
51	UKL analysis of long-term data sets	-	-	200	-	-	-	-	200	-	-	-	-	200	-	-	600
52	UKL listed suckers	-	875	875	875	875	875	875	875	875	875	875	875	875	875	875	12,250
53	Tributaries water quality/nutrients/temperature	-	310	310	310	310	310	310	310	310	310	310	310	310	310	310	4,340
54	Tributaries geomorphology/riparian vegetation	-	239	239	239	239	239	239	239	239	239	239	239	239	239	239	3,346
55	Tributaries physical habitat	-	213	213	213	213	213	213	213	213	213	213	213	213	213	213	2,982
56	Tributaries listed suckers	-	375	375	375	375	375	375	375	375	375	375	375	375	375	375	5,250
57	Keno Reservoir water quality/algae/nutrients	-	402	402	402	402	402	402	402	402	402	402	402	402	402	402	5,628
58	Keno Reservoir to Tributaries: (weather stations)	-	200	200	200	200	200	200	200	200	200	200	200	200	200	200	2,800
59	Remote Sensing acquisition and analysis	-	-	250	-	-	-	-	250	-	-	-	-	250	-	-	750
60	Keno Dam fish passage	-	-	-	-	-	-	-	-	1,500	2,000	-	-	-	-	-	3,500
61	Data Analysis and evaluation for provision to TAT	-	100	8	8	8	8	8	5	5	5	-	-	-	-	-	155
62	Development of predictive techniques	-	200	20	20	20	20	20	20	20	20	-	-	-	-	-	360
63	Klamath Basin Wildlife Refuges: North and P Canals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64	Klamath Basin Wildlife Refuges: Walking Wetland Construction	210	215	215	215	215	215	215	100	100	100	100	100	100	100	100	2,300
65	Klamath Basin Wildlife Refuges: Big Pond Dike	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
66	On Project water plan	1,200	4,300	8,000	9,000	15,000	15,000	15,000	15,000	10,000	-	-	-	-	-	-	92,500
67	Groundwater Technical Investigation	111	285	245	-	-	-	-	-	-	-	-	-	-	-	-	641
68	Costs Associated with Remedy for Adverse Impact	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
69	D Pumping Plant	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170	2,550
70	Water Use Retirement Plan	200	400	200	100	100	-	-	-	-	-	-	-	-	-	-	1,000
71	Off Project Plan and Program: Use of 30K ac ft above UKL	-	2,000	6,000	7,000	7,000	8,000	8,000	7,000	-	-	-	-	-	-	-	45,000
72	Interim Power Sustainability	1,730	2,241	3,719	-	-	-	-	-	-	-	-	-	-	-	-	7,690
73	Federal Power	500	500	-	-	-	-	-	-	-	-	-	-	-	-	-	1,000
74	Energy Efficiency and Renewable Resources	-	13,886	12,378	9,368	4,866	-	-	-	-	-	-	-	-	-	-	40,498
75	Renewable Power Program Financial and Engineering Plan	500	500	-	-	-	-	-	-	-	-	-	-	-	-	-	1,000
76	UKL Wetlands Restoration: Agency/Barnes	-	-	-	56	167	333	2,083	139	-	-	-	-	-	-	-	2,777
77	UKL Wetlands Restoration: Wood River	-	-	-	-	56	167	333	333	2,083	139	-	-	-	-	-	2,777
78	Drought Plan Development	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
79	Drought Plan Restoration Agreement Fund	-	-	-	-	-	-	-	-	-	1,000	1,000	1,000	1,000	1,000	1,000	6,000
80	Emergency Response Plan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
81	Emergency Response Fund	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
82	Technical Assessment of Climate Change	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
83	Off-Project Reliance Program	-	-	-	-	-	-	-	12000*	-	-	-	-	-	-	-	12000*
84	Real Time Water Management	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
85	Real Time Water Management: Water Flow Monitoring and Gauges	200	250	250	200	200	200	200	185	185	185	185	185	185	185	185	2,980
86	Added Snowpack Gauges	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
87	Adaptive Management: Science and Analysis	100	100	100	100	100	100	100	100	100	100	-	-	-	-	-	1,000
88	Real Time Management: Calibration and improvements to KLAMSIM or other modeling and predictions	-	50	-	-	-	-	-	50	-	-	-	-	-	-	-	100

Table 1: Detailed Cost Estimates for the Klamath Basin Settlement Agreement

(\$2007 Thousands)

#	Project	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	SUM
89	Interim Flow and Lake Level Program	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	-	-	-	-	-	-	-	44,000
90	Keno Reservoir KIP Screening	-	-	-	-	-	151	151	11,021	13,839	-	-	-	-	-	-	25,162
91	Federal GCP/HCP	-	-	-	350	1,000	650	800	1,350	450	450	450	-	-	-	-	5,500
92	California Laws	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
93	Oregon Laws	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
94	Klamath County Study	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
95	Klamath County (Oregon funding)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
96	Siskiyou County	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
97	Humboldt County	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
98	Del Norte County	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
99	Fisheries Management HVT**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100	Fisheries Management Karuk	500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	14,500
101	Fisheries Management Klamath	500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	14,500
102	Fisheries Management Yurok	500	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	14,500
103	Conservation Management HVT**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
104	Conservation Management Karuk	250	500	500	500	500	500	500	500	500	500	500	500	500	500	500	7,250
105	Conservation Management Klamath	250	500	500	500	500	500	500	500	500	500	500	500	500	500	500	7,250
106	Conservation Management Yurok	250	500	500	500	500	500	500	500	500	500	500	500	500	500	500	7,250
107	Economic Development Study HVT**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
108	Economic Development Study Karuk	-	250	-	-	-	-	-	-	-	-	-	-	-	-	-	250
109	Economic Development Study Klamath	-	250	-	-	-	-	-	-	-	-	-	-	-	-	-	250
110	Economic Development Study Yurok	-	250	-	-	-	-	-	-	-	-	-	-	-	-	-	250
111	Klamath Tribes: Mazama Forest Project	10,000	11,000	-	-	-	-	-	-	-	-	-	-	-	-	-	21,000
112	Fishing Sites	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* Recognizes there is further discussion of additional funding potentially available, including reallocated funds and provisions of KBRA Section 19.5.2.

** Upon becoming a Party to the KBRA in accordance with Section 38, the Hoopa Valley Tribe will be eligible for funding in categories and amounts for each of the other tribes in line items 99 through 110.