INDEPENDENT PROGRAMS CHARTERS APPENDIX

FOR THE 2016 ANNUAL WORK PLAN PUBLIC DRAFT

CENTRAL VALLEY PROJECT IMPROVEMENT ACT
TITLE XXXIV OF PUBLIC LAW 102-575

JULY 9, 2015

Contents

HRP Program Management and Compliance

Program Management and Environmental Compliance Requirements

Classification: Administration, Administration

Location: , Central Valley Wide

Funding Years: 2016 - 2018

Benefits Start Year: 2016

Priority: 1 - Program Priority Comments:

Partners: No Data.

Related Programs: No Data.

Authority

Provision	Percentage	Comment
HRP (b)(1)	100.0%	

Metrics

Name	Value	Units	Comment
Number of Section 106 documents written	3	number of reports	Documents written for section 106 Historic Preservation Act compliance
Number of NEPA documents written	5	number of reports	Documents written for NEPA compliance
Number of ESA documents written	5	number of reports	Documents written for section 7 ESA compliance
Number of reports submitted	10	number of reports	Progress, Draft, and Final project reports submitted for funded projects
Number of projects selected	5	number of actions	Projects selected for funding by the HRP
Number of Grant and Inter/Intraagency Agreements written	5	number of actions	Grant and Inter/Intraagency Agreements written
Funding Opportunity Announcement	1	number of actions	Funding Opportunity Announcement (FOA) posted on www.grants.gov
Priority Actions	13	number of actions	Number of Priority Actions written and posted in the FOA to benefit federally listed species and associated habitat
CVPIA Charters	3	number of actions	Number of draft and final CVPIA Charters written and posted

Deliverables

Date	Title

Date	Title
Sep. 2016	ESA documents
Sep. 2016	Section 106 documents
Sep. 2016	NEPA documents
Sep. 2017	Project Reports
Jan. 2016	New Projects List
Mar. 2016	Grant and Inter/intraagency Agreements
Sep. 2015	Funding Opportunity Announcement Posted
Apr. 2015	Priority Actions selected
Apr. 2015	Draft Charters written

Narrative

BOR and FWS program management incorporates: interdisciplinary approach; competitive process for soliciting proposals; integration with the CVP Conservation Program; protection, restoration, and enhancement of federally listed species and habitats affected by the CVP; contribution to priority recovery actions; and funding based on established priorities. Program Managers are responsible for all aspects of program management including: obtaining annual priorities from FWS Field Office; soliciting for proposals on www.grants.gov; reviewing and ranking proposals; conducting site reviews; selecting projects to fund; writing grant and other agreements; providing oversight on all funded projects; completing ESA, NEPA, and NHPA section 106 compliance documents; and coordinating the grants Technical Team.

Data Management

Information for this Charter, including all project files, will be permanently housed at BOR's Mid-Pacific Regional Office in Sacramento, and FWS's Pacific Southwest Regional Office in Sacramento. Additionaly information may be found at the CVPCP/HRPs website at http://www.usbr.gov/mp/cvpcp/

Risks

Risk	Likelihood	Impact
Availability of adequate funding	1	1

Cost Estimate

Year	Fund	Total	BOR	FWS
2016	CVPRF	$355,294	$120,948	$234,347
2017	CVPRF	$361,266	$124,576	$236,690
2018	CVPRF	$367,370	$128,314	$239,057

Total Cost: $1,083,931

Activities and Resources

Type	Total	Agency	Fund	Description
2016				
Environmental Compliance and Permitting - HRP Environmental Compliance				
Labor	$5,200	BOR	CVPRF	BOR-Funded environmental compliance for NEPA, ESA, and NHPA Section 106. Division of Environmental Affairs staff would write the NEPA compliance documents, ESA compliance documents, and Section 106 documents.
Labor	$6,826	FWS	CVPRF	FWS-Funded Environmental Compliance for NEPA, ESA, and Section 106. A biologist from the Sacramento Fish and Wildlife Office would write the ESA and section 106 compliance documents. Caroline Prose, HRP Program Manager, would write the NEPA compliance documents.
Management - HRP Program Managment				
Labor	$115,748	BOR	CVPRF	BOR Program Management Co-Lead Dan Strait
Labor	$227,521	FWS	CVPRF	Program Management Co-Lead Caroline Prose.
2017				
Environmental Compliance and Permitting - HRP Environmental Compliance				
Labor	$5,356	BOR	CVPRF	BOR-Funded environmental compliance for NEPA, ESA, and NHPA Section 106. Division of Environmental Affairs staff would write the NEPA compliance documents, the ESA compliance documents, and the Section 106 documents.
Labor	$6,894	FWS	CVPRF	FWS-Funded Environmental Compliance for NEPA, ESA, and Section 106. A biologist from the Sacramento Fish and Wildlife Office would write the ESA and section 106 compliance documents. Caroline Prose, HRP Program Manager, would write the NEPA compliance documents.
Management - HRP Program Managment				
Labor	$229,796	FWS	CVPRF	Program Management Co-Lead Caroline Prose
Labor	$119,220	BOR	CVPRF	BOR Program Management Co-Lead Dan Strait
2018				
Environmental Compliance and Permitting - HRP Environmental Compliance				
Labor	$5,517	BOR	CVPRF	BOR-Funded environmental compliance for NEPA, ESA, and NHPA Section 106. Division of Environmental Affairs staff would write the NEPA

Type	**Total**	**Agency**	**Fund**	**Description**
				compliance documents, the ESA compliance documents, and the Section 106 documents.
Labor	$6,963	FWS	CVPRF	FWS-Funded Environmental Compliance for NEPA, ESA, and Section 106. A biologist from the Sacramento Fish and Wildlife Office would write the ESA and section 106 compliance documents. Caroline Prose, HRP Program Manager, would write the NEPA compliance documents.
Management - HRP Program Managment				
Labor	$232,094	FWS	CVPRF	FWS Program Management Co-Lead Caroline Prose
Labor	$122,797	BOR	CVPRF	BOR Program Management Co-Lead Dan Strait

HRP Protection, Restoration, & Captive Propagation Projects

Land Protection, Habitat Restoration, and Captive Propagation & Reintroduction Projects

Classification: Improvement, Habitat Acquisition

Location: , Central Valley Wide

Funding Years: 2016 - 2018

Benefits Start Year: 2016

Priority: 1 - Program Priority Comments:

Partners: No Data.

Related Programs: No Data.

Authority

Provision	Percentage	Comment
HRP (b)(1)	100.0%	

Metrics

Name	Value	Units	Comment
Number of acres of habitat protected	0	acres	Acres protected through fee title acquisition and/or conservation easement actions
Number of acres of habitat restored	0	acres	Acres restored through habitat restoration actions
Increases in population numbers from restoration activities	0	number of improvements	These actions will contribute towards recovery criteria goals.
Number of Recovery actions implemented	0	number of actions	These actions will contribute towards recovery criteria goals.
Increases in various habitat types per acre	0	acres	Improvements in quantity of habitat types per acre from habitat restoration activities.
Number of acres of habitat restored for SWRCB Decision 1641	0	acres	Acres restored through habitat restoration actions for D-1641.
Number of acres of habitat protected for SWRCB Decision 1641	0	acres	Acres protected through fee title acquisition and/or conservation easement actions for D-1641.
Increases in population numbers from captive propagation activities	0	number of improvements	These actions will contribute towards recovery criteria goals.

Deliverables

Date	Title
Sep. 2016	Protection actions completed
Sep. 2016	Restoration actions completed
Sep. 2016	Captive Propagation & Reintroduction actions completed

Narrative

Funded projects for improvement activities will include Land Protection (i.e., fee title acquisition and conservation easements), Habitat Restoration, and Captive Propagation and Reintroduction. Projects will be selected in January of each year. At least 50% of funds will go towards Land Protection projects.

Data Management

Information for this Charter, including all project files, will be permanently housed at BOR's Mid-Pacific Regional Office in Sacramento, and FWS's Pacific Southwest Regional Office in Sacramento. Additionaly information may be found at the CVPCP/HRPs website at http://www.usbr.gov/mp/cvpcp/

Risks

Risk	Likelihood	Impact
Cannot predict content, quality, or quantity of proposals to be submitted	1	1
Availability of adequate funding	1	1

Cost Estimate

Year	Fund	Total	BOR	FWS
2016	CVPRF	$932,240	$524,211	$408,029
2017	CVPRF	$927,320	$521,180	$406,140
2018	CVPRF	$922,305	$518,072	$404,233

Total Cost: $2,781,865

Activities and Resources

Type	Total	Agency	Fund	Description
2016				
Acquisition - HRP-Funded Land Protection Projects				
Agreement	$245,801	FWS	CVPRF	FWS-Funded Land Protection Projects. Specific

Type	Total	Agency	Fund	Description
				projects will be selected in January 2016.
Agreement	$314,527	BOR	CVPRF	BOR-Funded Land Protection Projects. Specific projects will be selected in January 2016.
Implementation - HRP-Funded Captive Propagation & Reintroduction Projects				
Agreement	$78,656	FWS	CVPRF	FWS-Funded Captive Propagation & Reintroduction Projects. Specific projects will be selected in January 2016.
Agreement	$104,842	BOR	CVPRF	BOR-Funded Captive Propagation & Reintroduction Projects. Specific projects will be selected in January 2016.
Implementation - HRP-Funded Habitat Restoration Projects				
Agreement	$104,842	BOR	CVPRF	BOR-Funded Habitat Restoration Projects. Specific projects will be selected in January 2016.
Agreement	$83,572	FWS	CVPRF	FWS-Funded Habitat Restoration Projects. Specific projects will be selected in January 2016.
2017				
Acquisition - HRP-Funded Land Protection Projects				
Agreement	$244,663	FWS	CVPRF	FWS-Funded Land Protection Projects. Specific projects will be selected in January 2017.
Agreement	$312,710	BOR	CVPRF	BOR-Funded Land Protection Projects. Specific Projects will be selected in January 2017.
Implementation - HRP-Funded Captive Propagation & Reintroduction Projects				
Agreement	$104,235	BOR	CVPRF	BOR-Funded Captive Propagation & Reintroduction Projects. Specific projects will be selected in January 2017.
Agreement	$78,292	FWS	CVPRF	FWS-Funded Captive Propagation & Reintroduction Projects. Specific projects will be selected in January 2017.
Implementation - HRP-Funded Habitat Restoration Projects				
Agreement	$104,235	BOR	CVPRF	BOR-Funded Habitat Restoration Projects. Specific projects will be selected in January 2017.
Agreement	$83,185	FWS	CVPRF	FWS-Funded Habitat Restoration Projects. Specific projects will be selected in January 2017.
2018				
Acquisition - HRP-Funded Land Protection Projects				
Agreement	$243,514	FWS	CVPRF	FWS-Funded Land Protection Projects. Specific projects will be selected in January 2016.
Agreement	$310,844	BOR	CVPRF	BOR-Funded Land Protection Projects. Specific

Type	Total	Agency	Fund	Description
				projects will be selected in January 2018.
Implementation - HRP-Funded Habitat Restoration Projects				
Agreement	$82,795	FWS	CVPRF	FWS-Funded Habitat Restoration Projects. Specific projects will be selected in January 2018.
Agreement	$103,614	BOR	CVPRF	BOR-Funded Habitat Restoration Projects. Specific projects will be selected in January 2018.
Implementation - HRP-Funded Captive Propagation & Reintroduction Projects				
Agreement	$77,924	FWS	CVPRF	FWS-Funded Captive Propagation & Reintroduction Projects. Specific projects will be selected in January 2018.
Agreement	$103,614	BOR	CVPRF	BOR-Funded Captive Propagation & Reintroduction Projects. Specific projects will be selected in January 2018.

HRP Research Projects

Research Projects including studies and surveys

Classification: Research, Reconnaissance

Location: , Central Valley Wide

Funding Years: 2016 - 2018

Benefits Start Year: 2016

Priority: 1 - Program Priority Comments:

Partners: No Data.

Related Programs: No Data.

Authority

Provision	Percentage	Comment
HRP (b)(1)	100.0%	

Metrics

Name	Value	Units	Comment
Number of Research activities implemented	0	number of actions	Research actions will contribute towards determining how and where to protect and/or restore habitat.
Amount of metadata from each research project	0	metadata	Metadata will summarize basic information about data collected from research actions, to help make finding and working with particular instances of data easier.

Deliverables

Date	Title
Sep. 2016	Research actions completed
Sep. 2016	Metadata

Narrative

Funded projects for research will include surveys and studies such as on genetic research for listed vernal pool plants; California tiger salamander genomic research; giant garter snake habitat use; and long-horn fairy shrimp habitat research. Projects will be selected in January of each year.

Data Management

Information for this Charter, including all project files, will be permanently housed at BOR's Mid-Pacific Regional Office in Sacramento, and FWS's Pacific Southwest Regional Office in

Sacramento. Additionaly information may be found at the CVPCP/HRPs website at http://www.usbr.gov/mp/cvpcp/

Risks

Risk	Likelihood	Impact
Cannot predict content, quality, or quantity of proposals to be submitted	1	1
Availability of adequate funding	1	1

Cost Estimate

Year	Fund	Total	BOR	FWS
2016	CVPRF	$188,414	$104,842	$83,572
2017	CVPRF	$187,420	$104,235	$83,185
2018	CVPRF	$186,409	$103,614	$82,795

Total Cost: $562,243

Activities and Resources

Type	Total	Agency	Fund	Description
2016				
Research - HRP-Funded Research Projects				
Agreement	$83,572	FWS	CVPRF	FWS-Funded Research Projects. Specific projects will be selected in January 2016.
Agreement	$104,842	BOR	CVPRF	BOR-Funded Research Projects. Specific projects will be selected in January 2016.
2017				
Research - HRP-Funded Research Projects				
Agreement	$83,185	FWS	CVPRF	FWS-Funded Research Projects. Specific projects will be selected in January 2017.
Agreement	$104,235	BOR	CVPRF	BOR-Funded Research Projects. Specific projects will be selected in January 2017.
2018				
Research - HRP-Funded Research Projects				
Agreement	$82,795	FWS	CVPRF	FWS-Funded Research Projects. Specific projects will be selected in January 2018.
Agreement	$103,614	BOR	CVPRF	BOR-Funded Research Projects. Specific projects

Type	Total	Agency	Fund	Description
				will be selected in January 2018.

FY16 CVPIA (g) Program Administration, Modeling Project Management, Technical Support, and Modeling

To manage, coordinate, plan and implement the CVPIA (g) program

Classification: Administration, Administration

Location: , Central Valley Project Improvement Act

Funding Years: 2015 - 2018

Benefits Start Year: 2015

Priority: 1 - 1 is program salary, 2 is highest priority restoration action,

3 is high priority that can wait a year

Partners: FWS, CDFW, CDWR

Related Programs: AFRP

Authority

Provision	Percentage	Comment
Modeling (g)	100.0%	

Metrics

No Data.

Deliverables

Date	Title
Aug. 2016	Annual Report for FY 2016
Aug. 2016	In house in-depth CalSim3 model skill development and model documentation
Aug. 2016	Annual Work Plan for FY 2017
Aug. 2016	In house in-depth temperature model skill development and model documentation
Aug. 2016	Modeling Projects Management

Narrative

Program Lead for Reclamation is responsible for administration of the program and coordination of program activities, budget and work with Federal and State agencies. Coordinate with FWS co-lead to review agencies modeling needs, activities, modeling tools development for the 3406 (g) program.

Administration of the program requires coordination among the partner and peer agencies like Reclamation, USFWS, CADWR, CAFWS etc.

Data Management

All files will be kept in MP-700 at Cottage Way Office, Sacramento.

Risks

Risk	Likelihood	Impact
Adverse Stakeholders	1	3
Insufficient Field Data	2	2

Cost Estimate

Year	Fund	Total	BOR	FWS	DWR
2016	CVPRF	$531,529	$444,575	$86,953	$0
2016	SIK	$972,911	$0	$0	$972,911
2017	CVPRF	$600,000	$488,627	$111,372	$0
2017	WRR	$24,394	$24,394	$0	$0
2017	SIK	$991,802	$0	$0	$991,802
2018	CVPRF	$600,000	$488,627	$111,372	$0
2018	WRR	$30,788	$30,788	$0	$0
2018	SIK	$991,802	$0	$0	$991,802

Total Cost: $4,743,225

Activities and Resources

Type	Total	Agency	Fund	Description
2016				
Administration - Administration of the CVPIA (g) program that include model, development and project management and monitoring, coordinating, research, planning and analysis, data acquisition, project procurement possess, inter-agency coordination, reporting and public outreach. *The labor rates are average not actual data because of administrative policies and personnel issues.*				
Labor	$46,405	FWS	CVPRF	Co-Lead for USFWS, coordinating program activities within the service as well as reviewing and the development of water operations and

Type	Total	Agency	Fund	Description
				fishery modeling tools.
Labor	$20,274	FWS	CVPRF	Coordinate fish model development and implementation
Labor	$21,955	BOR	CVPRF	Modeling of CalSim3.0 and CalSim II
Labor	$21,955	BOR	CVPRF	Develop, update and implement modeling works related to CalSimII and RiverWare
Labor	$21,955	BOR	CVPRF	Development, update and implementation of water quality and CalLite models
Labor	$24,394	BOR	CVPRF	Supervisory Support: Oversee the modeling activities of Reclamation
Labor	$121,970	BOR	CVPRF	In-Depth Temperature Modeler: Modeler responsible for in-depth model code modification and documentation of HEC-5Q and other temperature model
Labor	$21,955	BOR	CVPRF	Modeler - CalSim3.0 coordination and using temperature model for CalSim.
Labor	$12,197	BOR	CVPRF	Modeler responsible for in-depth model code modification and documentation of CalSim3 and other water operation model
Direct Contribution	$11,098	BOR	CVPRF	Membership and participation in California Water and Environmental Modeling Forum (CWEMF) and other professional organizations, attend workshops etc., prepare publications and provide support for model application to stakeholders.
In-Kind Labor	$282,375	DWR	SIK	C2VSIM Model Development & Application /// Fund Source: State Water Project Funds
In-Kind Labor	$205,361	DWR	SIK	CalSim II Model Update & Application /// Source: State Water Project Funds
In-Kind Labor	$248,518	DWR	SIK	CalSim 3.0 Model Development & Application //// Source: State Water Project Funds
In-Kind Labor	$154,101	DWR	SIK	CalLite Model Development & Application /// Source: State Water Project Funds
In-Kind Labor	$82,556	DWR	SIK	Development & Application of ANN Model /// Source: State Water Project Funds
Labor	$20,274	FWS	CVPRF	Develop and review of water temperature model
Labor	$187,099	BOR	CVPRF	Program Manger, Project manger for the modeling projects and Program-Lead for Reclamation, coordinating program activities

Type	Total	Agency	Fund	Description
				within all agencies as well as reviewing and the development of water operations, ecosystem and fishery modeling tools.
2017				
Administration - Administration of the CVPIA (g) program that include model, development and project management and monitoring, coordinating, research, planning and analysis, data acquisition, project procurement possess, inter-agency coordination, reporting and public outreach. *The labor rates are average not actual data because of administrative policies and personnel issues.*				
Labor	$24,394	BOR	CVPRF	Modeling of Ground Water, Subsidence and Climate Change Effect
Labor	$48,788	BOR	CVPRF	Develop, update and implement modeling works related to CalSimII and RiverWare
Labor	$24,394	BOR	CVPRF	Development, update and implementation of water quality and CalLite models
Labor	$48,788	BOR	CVPRF	Updating and implementation of CalSim and CalLite.
Labor	$30,163	FWS	CVPRF	Coordinate fish model development and implementation.
Labor	$34,804	FWS	CVPRF	Develop and review of water temperature model
Labor	$48,788	BOR	CVPRF	Modeler responsible for in-depth model code modification and documentation of CalSim3 and other water operation model.
Labor	$85,379	BOR	CVPRF	Modeler responsible for in-depth model code modification and documentation of HEC-5Q and other temperature models.
Direct Contribution	$10,507	BOR	CVPRF	Membership and participation in California Water and Environmental Modeling Forum (CWEMF) and other professional organizations, attend workshops etc., prepare publications and provide support for model application to stakeholders.
Labor	$24,394	BOR	WRR	Oversee the modeling activities of Reclamation
Labor	$46,405	FWS	CVPRF	Co-Lead for USFWS, coordinating program activities within the service as well as reviewing and the development of water operations and fishery modeling tools.
Labor	$197,591	BOR	CVPRF	Program lead for Reclamation, coordinating program activities within all agencies as well as reviewing and the development of water

Type	Total	Agency	Fund	Description
				operations, ecosystem and fishery modeling tools.
In-Kind Labor	$84,158	DWR	SIK	Development & Application of ANN Model
In-Kind Labor	$157,093	DWR	SIK	CalLite Model Development & Application
In-Kind Labor	$253,344	DWR	SIK	CalSim 3.0 Model Development & Application
In-Kind Labor	$209,349	DWR	SIK	CalSim II Model Update & Application
In-Kind Labor	$287,857	DWR	SIK	C2VSIM Model Development & Application
2018				
Administration - Administration of the CVPIA (g) program that include model, development and project management and monitoring, coordinating, research, planning and analysis, data acquisition, project procurement possess, inter-agency coordination, reporting and public outreach. *The labor rates are average not actual data because of administrative policies and personnel issues.*				
Labor	$48,788	BOR	CVPRF	Modeler responsible for in-depth model code modification and documentation of CalSim3 and other water operation model.
Labor	$85,379	BOR	CVPRF	Modeler responsible for in-depth model code modification and documentation of HEC-5Q and other temperature models.
Labor	$30,163	FWS	CVPRF	Coordinate fish model development and implementation.
Labor	$48,788	BOR	CVPRF	Updating and implementation of CalSim and CalLite.
Labor	$24,394	BOR	CVPRF	Development, update and implementation of water quality and CalLite models
Labor	$48,788	BOR	CVPRF	Develop, update and implement modeling works related to CalSimII and RiverWare
Labor	$24,394	BOR	CVPRF	Modeling of Ground Water, Subsidence and Climate Change Effect
Direct Contribution	$10,507	BOR	CVPRF	Membership and participation in California Water and Environmental Modeling Forum (CWEMF) and other professional organizations, attend workshops etc., prepare publications and provide support for model application to stakeholders.

Type	Total	Agency	Fund	Description
Labor	$30,788	BOR	WRR	Oversee the modeling activities of Reclamation.
Labor	$46,405	FWS	CVPRF	Co-Lead for USFWS, coordinating program activities within the service as well as reviewing and the development of water operations and fishery modeling tools.
Labor	$197,591	BOR	CVPRF	Program lead for Reclamation, coordinating program activities within all agencies as well as reviewing and the development of water operations, ecosystem and fishery modeling tools.
In-Kind Labor	$84,158	DWR	SIK	Development & Application of ANN Model
Labor	$157,093	DWR	SIK	CalLite Model Development & Application
In-Kind Labor	$253,344	DWR	SIK	CalSim 3.0 Model Development & Application
In-Kind Labor	$209,349	DWR	SIK	CalSim II Model Update & Application
In-Kind Labor	$287,857	DWR	SIK	C2VSIM Model Development & Application
Labor	$34,804	FWS	CVPRF	Develop and review of water temperature model

FY16 CalSim Technical Support

CalSim is an open source and freely available water operations and screening model for the Central Valley region. It is currently being developed by both Reclamation and the California Department of Water Resources.

This project is to improve and maintain the model by adding new capabilities, incorporating the new regulations and water operations etc.

This project is authorized by P.L. 3406(g).

Classification: Improvement, Water Operations

Location: , Central Valley Project Improvement Act

Funding Years: 2009 - 2025

Benefits Start Year: 2011

Priority: 3 - 1 is program salary, 2 is highest priority restoration action,

3 is high priority that can wait a year

Partners: FWS, CDFW, CDWR

Related Programs: AFRP

Authority

Provision	Percentage	Comment
Modeling (g)	100.0%	

Metrics

Name	Value	Units	Comment
g: # of Eco Models developed	0	number of models complete	

Deliverables

Date	Title
Aug. 2016	CalSim 3.0 Technical Support
Aug. 2020	CalSim ii and CalSim 3.0 that includes the San Joaquin system

Narrative

The CalSim model can be used to support water planners' and managers' decisions, screen and analyze the long-term effects of various water operations on water quality, maximize the beneficial and diversified water uses, and restore the ecosystem in the Central Valley region.

In addition to the Reclamation, water users in the Central Valley region and public entities such as the: (1) San Luis and Delta-Mendota Water Authority; (2) Westlands Water District; (3) Metropolitan Water Districts; (4) Contra Costa Water District; (5) Santa Clara Valley Water Agency; (6) California Department of Water Resources; (7) California Department of Fish and Game; and (8) U.S. Fish and Wildlife Service, etc. also use CalSim for their planning and operations .

The CalSim Model project accomplishes modeling activities required for the development, application, and adoptive management of the CalSim model according to changes in the laws, climate, reservoir operations priorities, ecosystem hydrology, and water users' demands and priorities.

This FY16 work is for model maintenance, adding of new capabilities of new dam operations etc. and refinement of model with recent data and operation rules.

Data Management

Information for the charter including relevant protocols for understanding the information, will be permanently housed at Mid-Pacific Regional Office MP-700 of Reclamation at 2800 Cottage Way, Sacramento CA 95618.

Risks

Risk	Likelihood	Impact
Lack of Funding	1	3
Stake holders do not accept results from the model	1	2

Cost Estimate

Year	Fund	Total	BOR	FWS	Local
2016	CVPRF	$25,000	$1,000	$0	$24,000
2017	CVPRF	$25,000	$25,000	$0	$0
2018	CVPRF	$25,000	$25,000	$0	$0

Total Cost: $75,000

Activities and Resources

Type	Total	Agency	Fund	Description
2016				
Implementation - CalSim contract and supporting works that will be performed by BOR Project Requisition. Local consultants will perform the work. *The labor rate showing is actually the total contract amount that is being expected to be funded by CVP RF.*				
Agreement	$24,000	Local	CVPRF	To update the CalSim model with new water operation rules, maintain the model and improve the logics.
Labor	$1,000	BOR	CVPRF	To award and manage the contract. CalSim contract and supporting works that will be performed by BOR Project Requisition. Local consultants will perform the work under a contract agreement.
2017				
Implementation - CalSim contract and supporting works that will be performed by BOR Project Requisition. Local consultants will perform the work. *The labor rate showing is actually the total contract amount that is being expected to be funded by CVP RF.*				
Agreement	$24,000	BOR	CVPRF	To update the CalSim model with new water operation rules, maintain the model and improve the logics.
Labor	$1,000	BOR	CVPRF	To award and manage the contract
2018				
Implementation - CalSim contract and supporting works that will be performed by BOR Project Requisition. Local consultants will perform the work. *The labor rate showing is actually the total contract amount that is being expected to be funded by CVP RF.*				
Agreement	$24,000	BOR	CVPRF	To update the CalSim model with new water operation rules, maintain the model and improve the logics.
Labor	$1,000	BOR	CVPRF	To award and manage the contract

FY16 Temperature and Fisheries Model Technical Support

To develop water temperature and fisheries models and improve model of San Joaquin River and to extend Sacramento River Water Quality Model to include the American and Feather Rivers.

This project is authorized by P.L. 3406(g).

Classification: Improvement, Water Operations

Location: , Central Valley Project Improvement Act

Funding Years: 2009 - 2025

Benefits Start Year: 2011

Priority: 3 - 1 is program salary, 2 is highest priority restoration action,

3 is high priority that can wait a year

Partners: FWS, CDFW, CDWR

Related Programs: AFRP

Authority

Provision	Percentage	Comment
Modeling (g)	100.0%	

Metrics

Name	Value	Units	Comment
g: # of Eco Models developed	0	number of models complete	

Deliverables

Date	Title
Aug. 2016	integrated temperature model that includes the San Joaquin system
Aug. 2018	Temperature and fisheries models

Narrative

The temperature models can be used to support water planners' and managers' decisions, screen and analyze the long-term effects of various water operations on water temperature, maximize the beneficial and diversified water uses, and restore the ecosystem and fisheries in the Central Valley region.

The temperature model project accomplishes modeling activities required for the development, application, and adoptive management of the temperature model according to changes in the

laws, climate, reservoir operations priorities, ecosystem hydrology, and water users' demands and priorities.

This Charter is for that portion of CalSim contract and supporting works that will be performed by the local consultants.

Data Management

Information for the charter including relevant protocols for understanding the information, will be permanently housed at Mid-Pacific Regional Office MP-700 of Reclamation at 2800 Cottage Way, Sacramento CA 95618.

Risks

Risk	Likelihood	Impact
Stake holders do not accept results from the temperature and or fisheries model	1	2

Cost Estimate

Year	Fund	Total	BOR	FWS
2016	CVPRF	$25,000	$25,000	$0
2017	CVPRF	$25,000	$25,000	$0
2018	CVPRF	$25,000	$25,000	$0

Total Cost: $75,000

Activities and Resources

Type	Total	Agency	Fund	Description
2016				
Implementation - Temperature and fisheries model contract and supporting works. *This Charter is for that portion of modeling support works that will be performed by the local consultants.* *The labor rate showing is actually the total contract amount that is being expected to be funded by CVP RF.*				
Agreement	$24,000	BOR	CVPRF	To update the temperature and fisheries models. This Charter is for that portion of modeling support works

Type	Total	Agency	Fund	Description
				that will be performed by the local consultants. The labor rate showing is actually the total contract amount that is being expected to be funded by CVP RF.
Labor	$1,000	BOR	CVPRF	To award and manage the contract
2017				
Implementation - Temperature and fisheries model contract and supporting works. *This Charter is for that portion of modeling support works that will be performed by the local consultants.* *The labor rate showing is actually the total contract amount that is being expected to be funded by CVP RF.*				
Labor	$1,000	BOR	CVPRF	To award and manage the contract.
Agreement	$24,000	BOR	CVPRF	To update and improve the temperature and fisheries model. This Charter is for that portion of modeling support works that will be performed by the local consultants. The labor rate showing is actually the total contract amount that is being expected to be funded by CVP RF.
2018				
Implementation - Temperature and fisheries model contract and supporting works. *This Charter is for that portion of modeling support works that will be performed by the local consultants.* *The labor rate showing is actually the total contract amount that is being expected to be funded by CVP RF.*				
Agreement	$24,000	BOR	CVPRF	To update and improve the temperature and fisheries models. This Charter is for that portion of modeling support works that will be performed by the local consultants. The labor rate showing is actually the total contract amount that is being expected to be funded by CVP

Type	Total	Agency	Fund	Description
				RF.
Labor	$1,000	BOR	CVPRF	To award and manage the contract. This Charter is for that portion of modeling support works that will be performed by the local consultants. The labor rate showing is actually the total contract amount that is being expected to be funded by CVP RF.

FY16 CalLite Technical Support

CalLite is an open source and freely available water operations and screening model for the Central Valley region. It is currently being developed by both Reclamation and the California Department of Water Resources.

This project is authorized by P.L. 3406(g).

Classification: Improvement, Water Operations

Location: , Central Valley Project Improvement Act

Funding Years: 2009 - 2025

Benefits Start Year: 2011

Priority: 3 - 1 is program salary, 2 is highest priority restoration action,

3 is high priority that can wait a year

Partners: FWS, CDFW, CDWR

Related Programs: AFRP

Authority

Provision	Percentage	Comment
Modeling (g)	100.0%	

Metrics

Name	Value	Units	Comment
g: # of Eco Models developed	0	number of models complete	

Deliverables

Date	Title
Aug. 2016	integrated CalLite that includes the San Joaquin system
Aug. 2020	CalLite Model

Narrative

The CalLite model can be used to support water planners' and managers' decisions, screen and analyze the long-term effects of various water operations on water quality, maximize the beneficial and diversified water uses, and restore the ecosystem in the Central Valley region.

In addition to the Reclamation, water users in the Central Valley region and public entities such as the: (1) San Luis and Delta-Mendota Water Authority; (2) Westlands Water District; (3) Metropolitan Water Districts; (4) Contra Costa Water District; (5) Santa Clara Valley Water Agency; (6) California Department of Water Resources; (7) California Department of Fish and

Game; and (8) U.S. Fish and Wildlife Service, etc. also use CalLite for their planning and operations .

The CalLite Model project accomplishes modeling activities required for the development, application, and adoptive management of the CalLite model according to changes in the laws, climate, reservoir operations priorities, ecosystem hydrology, and water users' demands and priorities.

This Charter is for that portion of modeling support works that will be performed by the local consultants.

The labor rate showing is actually the total contract amount that is being expected to be funded by CVP RF.

Data Management

Information for the charter including relevant protocols for understanding the information, will be permanently housed at Mid-Pacific Regional Office MP-700 of Reclamation at 2800 Cottage Way, Sacramento CA 95618.

Risks

Risk	Likelihood	Impact
Stake holders do not accept results from the CalLite model	1	2

Cost Estimate

Year	Fund	Total	BOR	FWS
2016	CVPRF	$25,000	$25,000	$0
2017	CVPRF	$25,000	$25,000	$0
2018	CVPRF	$25,000	$25,000	$0

Total Cost: $75,000

Activities and Resources

Type	Total	Agency	Fund	Description
2016				
Implementation - CalLite contract and supporting works . This Charter is for that portion of modeling support works that will be performed by the local consultants. *The labor rate showing is actually the total contract amount that is being expected to be funded by CVP RF.*				
Labor	$1,000	BOR	CVPRF	To award and manage the contract
Agreement	$24,000	BOR	CVPRF	To update the CalLite model and CalLite GUI . This Charter is for that portion of modeling support works that will be performed by the local consultants. The labor rate showing is actually the total contract amount that is being expected to be funded by CVP RF.
2017				
Implementation - CalLite contract and supporting works . This Charter is for that portion of modeling support works that will be performed by the local consultants. *The labor rate showing is actually the total contract amount that is being expected to be funded by CVP RF.*				
Labor	$1,000	BOR	CVPRF	To award and manage the contract
Agreement	$24,000	BOR	CVPRF	To update and improve the CalLite model and CalLite GUI. This Charter is for that portion of modeling support works that will be performed by the local consultants. The labor rate showing is actually the total contract amount that is being expected to be funded by CVP RF.
2018				
Implementation - CalLite contract and supporting works . This Charter is for that portion of modeling support works that will be performed by the local consultants. *The labor rate showing is actually the total contract amount that is being expected to be funded by CVP RF.*				
Labor	$1,000	BOR	CVPRF	To award and manage the contract

Type	Total	Agency	Fund	Description
Agreement	$24,000	BOR	CVPRF	To update the CalLite model and CalLite GUI . This Charter is for that portion of modeling support works that will be performed by the local consultants. The labor rate showing is actually the total contract amount that is being expected to be funded by CVP RF.

SJRRP - Mendota Pool Bypass and Reach 2B Project

Construction of Mendota Pool Bypass for flow routing and fish passage

Classification: Improvement, Habitat Restoration

Location: , San Joaquin Upper Mainstem

Funding Years: 2014 - 2018

Benefits Start Year: 2015

Priority: 1 - All CVPIA funds will be applied to this project. Additional funding will come from other sources.

Partners: No Data.

Related Programs: No Data.

Authority

Provision	Percentage	Comment
SJRRP (PL111-11)	100.0%	

Metrics

Name	Value	Units	Comment
c1: Restore and maintain fish populations	0	acre-feet	

Deliverables

Date	Title
Oct. 2016	FY 2016 - Land Acquisition of 2 Properties in Bypass Route in Preparation for Construction

Narrative

Begin activities related to the construction of the Mendota Pool Bypass to ensure flow conveyance of 4,500 cubic feet per second from river Reach 2B downstream to river Reach 3 and allow fish passage downstream. Project location is on San Joaquin River from RM 216 to RM 203. Total project cost is $174 million.

Data Management

Data will be retained by the San Joaquin River Restoration Program office in Mid-Pacific Region.

Risks

Risk	Likelihood	Impact
Construction delay	2	2

Cost Estimate

Year	Fund	Total	BOR	FWS
2016	CVPRF	$0	$0	$0
2015	CVPRF	$0	$0	$0

Total Cost: $0

Activities and Resources

Type	Total	Agency	Fund	Description
2015				
Environmental Compliance and Permitting - Environmental contract to document NEPA compliance, perform biological surveys and obtain environmental permits from external agencies.				
	$0	BOR	CVPRF	
2016				
Construction - Land acquisition. Purchase of 2 properties in the bypass to allow for construction actions to begin.				
Agreement	$0	BOR	CVPRF	

This One_ Trinity River Restoration Program CVPIA Section 3406(b)(1)/(b)(23)

Trinity River Restoration

Classification: Administration, Administration

Location: , Central Valley Project Improvement Act

Funding Years: 2015 - 2016

Benefits Start Year: 2015

Priority: - Program Priority Comments:

Administration, Implementation, Monitoring

Partners: Yurok Tribe, Trinity County, CDFW, CDWR, NMFS, USFS, TCRCD, Hoopa Tribe

Related Programs: No Data.

Authority

Provision	Percentage	Comment
TRRP (b)(1)	60.0%	
TRRP (b)(23)	40.0%	

Metrics

Name	Value	Units	Comment
b1(other): Channel Rehabilitation	0	number of improvements	
b1(other): Coarse Sediment Placement (annual) (CU. YDS.)	0	cubic yards	
b1(other): Fine sediment reduction (annual) (CU. YDS.)	0	cubic yards	
b1(other): Fine Sediment annual mass (volume) balance (CU. YDS.)	0	cubic yards	
b1(other): Riparian Corridor Improvements	0	acres	
b23: # Fall-run Chinook Hatchery Escapement	0	percentage of fish	
b23: # Fall-run Chinook Natural Escapement	0	percentage of fish	
b23: # Spring-run Chinook Hatchery Escapement	0	percentage of fish	
b23: # Spring-run Chinook Natural Escapement	0	percentage of fish	
b23: # Coho Salmon Hatchery Escapement	0	percentage of fish	
b23: # Coho Salmon Natural Escapement	0	percentage of fish	
b23: # Steelhead Hatchery Escapement	0	percentage of fish	

Name	Value	Units	Comment
b23: #Steelhead Natural Escapement	0	percentage of fish	
b23: ROD (369 TAF - 815 TAF) and Minimum Annual Flow	0	cfs	

Deliverables

Date	Title
May. 2014	Annual Report
May. 2014	Annual Work Plan
May. 2014	Monitoring Reports
May. 2014	Implement Flows
May. 2014	Implement Coarse Sediment Management
May. 2014	Implement Watershed Restoration Projects

Narrative

The Trinity River Restoration Program (TRRP) was founded in 2000 based on three comprehensive foundational documents: the Trinity River Flow Evaluation Final Report (TRFEFR; U.S. Fish and Wildlife Service and Hoopa Valley Tribe 1999); the Trinity River Environmental Impact Statement (TREIS/EIR; USFWS et al. 2000); and the Record of Decision (ROD; U.S. Department of the Interior 2000). These documents established a comprehensive science-based adaptive management program to restore the Trinity River's fishery resources.

Program Goals and Objectives for FY 2016

The TRRP is designed to restore the attributes of a healthy, alluvial river system by implementing variable annual instream flows, physical channel rehabilitation, sediment management, and watershed restoration. The Program's overarching goal is to restore and sustain natural production of adult anadromous fish populations downstream of Lewiston Dam to pre-dam levels, to facilitate dependent tribal, commercial and sport fisheries full participation in the benefits of restoration via enhanced harvest opportunities. The TRRP strategy for accomplishing this goal restores and perpetually maintains fish and wildlife resources (including T&E species) by restoring the processes that produce a healthy alluvial river system.

Fiscal Year 2016 (FY 2016) restoration activities include the continued implementation of the TRRP's restoration strategy. The Program will plan and implement restoration flow releases, construct up to three channel rehabilitation projects, augment coarse sediment, execute watershed restoration activities to manage fine sediment, and continue to implement a Fish Production Model and Decision Support System to integrate monitoring and evaluation results to inform future restoration efforts. Annual restoration flow releases will be based on water year type. Channel rehabilitation projects will include a combination of habitat improvement projects that will focus on side channel construction, floodplain lowering, woody debris placement, spawning gravel processing and augmentation, and juvenile fish habitat enhancements. Annual

coarse sediment augmentations will be based on water year type, results of past augmentations, and two-dimensional modeling runs. Watershed restoration projects will seek to reduce fine sediment contributions to the Trinity River. In addition to the various restoration actions, multiple activities from the TRRP's Integrated Assessment Plan are proposed under six CVPIA Annual Work Plan categories: Environmental Compliance, Pre-Project Monitoring, Post-Project Monitoring, Monitoring (Programmatic), Research (Evaluations, Studies, Investigations), and Modeling. These activities are generally intended to (1) evaluate long-term progress toward achieving Program goals and objectives; and (2) provide short-term feedback to improve Program management actions by testing key hypotheses, and reducing management uncertainties. The activities relate to the influence of restoration actions on fish, wildlife, vegetation and the physical environment.

To achieve these goals, the program does

•Adaptive Management

•Mechanical Channel Rehabilitation

•Flow Management

•Sediment Management

•Watershed Restoration

Data Management

TRRP has a Data Management and Utility Plan (http://odp.trrp.net/Data/Documents/Details.aspx?document=1510) that outlines the role of data in the program, partner agency responsibilities, data sharing, and final deposition of data. In brief:

-The multiple partner agencies are held responsible for proper management and documentation of draft data they collect or process.

-All data funded by the Department of Interior must be provided to DOI in final, documented form upon completion of funded projects.

-USFWS takes the lead on data review for fisheries data while USBR takes the lead on all other data.

-All final data, fisheries included, are to be stored in a repository at the TRRP office for management by the TRRP Data Steward.

-To promote data access for TRRP Partners and stakeholders, a subset of the repository with final, reviewed, public data is provided at http://odp.trrp.net

-TRRP data is the foundation of the analyses, syntheses and models that inform adaptive management of restoration efforts.

-All data are collected under peer reviewed protocols on file on the TRRP repository.

Risks

Risk	Likelihood	Impact
Lack of Funding	2	3
Program Funding Constraints	2	3
Permitting Constraints	2	2
Access Constraints	2	2
Environmental Constraints	2	2

Cost Estimate

Year	Fund	Total	BOR	FWS
2015	FWSA	$1,653,373	$72,000	$1,581,373
2015	WRR	$11,121,386	$10,987,759	$133,627
2016	FWSA	$1,855,214	$176,932	$1,678,282
2016	WRR	$11,862,455	$11,862,455	$0
2017	WRR	$11,855,255	$11,855,255	$0
2017	FWSA	$1,855,844	$1,395,034	$460,810
2018	FWSA	$1,855,214	$1,395,034	$460,180
2018	WRR	$11,862,455	$11,862,455	$0
2015	CVPRF	$2,000,000	$2,000,000	$0
2016	CVPRF	$1,500,000	$1,500,000	$0
2017	CVPRF	$1,500,000	$1,500,000	$0
2018	CVPRF	$1,500,000	$1,500,000	$0

Total Cost: $60,421,196

Activities and Resources

Type	Total	Agency	Fund	Description
2015				
Administration - Management				
Labor	$65,000	BOR	FWSA	(FWS-Arcata Fund) The Trinity Adaptive Management Working Group (TAMWG) is a group of stakeholders providing an opportunity for stakeholders to give policy and management advice about restoration activities to the TMC.
Labor	$602,810	BOR	WRR	Development and maintenance of Tribal capacity to fully and meaningfully participate in the

Type	Total	Agency	Fund	Description
				TRRP technical and Adaptive Environmental Assessment and Management (AEAM) activities and the restoration of Trinity River Tribal Trust resources. Funds Tribals participation in TRRP implementation.
Labor	$389,408	BOR	WRR	Members and alternates of the eight TRRP partner Federal, State, Tribe and local agencies (Reclamation, Service, NOAA, Forest Service, Hoopa Valley Tribe, Yurok Tribe, California Resources Agencies (DWR, CDFG) and Trinity County participate in four quarterly meetings and monthly teleconferences.
Labor	$152,000	BOR	WRR	Public meetings and informational materials for information transfer about rehabilitation projects, environmental assessment and compliance, monitoring and evaluation, and partnership activities.
Labor	$75,000	BOR	WRR	Serves as data manager for TRRP ensuring QA/QC and metadata for all data. GIS applications of data.
Labor	$70,000	BOR	WRR	Regional charges to process purchase requests: assessment is based on number of purchase requests, contracts, grants and agreements processed.
Labor	$395,108	FWS	FWSA	(FWS-Arcata Fund) Participation of Arcata Fish and Wildlife Office Fisheries and Conservation Partnership Program staff in the Trinity Management Council, in support of the Trinity River Adaptive Management Working Group, and in science program administration. (A1R)
Labor	$651,520	BOR	WRR	Program Manager, USBR co-lead: Management of TRRP program budget, activities, Reclamation staff. Secretary: Carries out all office administrative duties for TRRP. Acquisition Support Specialist: Processes all acquisitions, agreements, contracts for TRRP and monitors TRRP budget. (A30)
Implementation - RIG				
Labor	$50,000	BOR	WRR	
Labor	$2,000,000	BOR	CVPRF	Implementation of large scale channel rehabilitation projects along the mainstem Final selection of projects is dependent on cultural resources, environmental compliance, landowner

Type	Total	Agency	Fund	Description
				access agreements, and other factors.
Labor	$200,000	BOR	WRR	DWR will participate in design meeting and site visit, prepare detailed civil engineering designs for rehabilitation projects, survey sites in preparation for project designs and implementation, participate in value engineering studies for planned projects, and develop HEC-RAS models for flows.
Labor	$327,000	BOR	WRR	Support the Yurok Tribe and their consultant team to participate in the Design Team and other implementation tasks.
Labor	$373,000	BOR	WRR	Funds full participation of Hoopa Valley Tribe consultants participation in technical work group meetings and project design activities.
Labor	$276,000	BOR	WRR	Digital orthorectified aerial photography on the Trinity River; aircraft-based LiDAR terrestrial topography data and true-color aerial photography for the full 42 mile project area; site specific aircraft-based LiDAR; and ground or sonar based terrestrial and bathymetric topographic surveys.
Labor	$100,000	BOR	WRR	Completes all right of access and realty actions necessary to implement rehabilitation projects, prepares and presents project realty/mitigation updates at public meetings, assist TRRP Environmental Specialist with meeting all permit application submission requirements.
Labor	$50,000	BOR	WRR	USFS collaborates with TRRP on watershed projects on USFS land in Trinity River restoration corridor, develops environmental documents for permitting of projects, conducts surveys of cultural resources and indicator species, conducts wild and scenic river consultations and impact analyses.
Labor	$12,000	BOR	WRR	BLM coordinates with TRRP rehabilitation projects to identify trees for removal for large wood structures for rehabilitation projects, coordinates NEPA and permitting for tree harvest
Labor	$55,000	BOR	WRR	
Labor	$475,000	BOR	WRR	Develop Environmental Assessments (NEPA/CEQA) to support rehabilitation implementation projects
Labor	$70,000	BOR	WRR	TC DOT works with TRRP staff in project planning and design development including

Type	Total	Agency	Fund	Description
				baseline infrastructure inventories , cultural resource evaluations, geological/mining input Management Indicator Species evaluations, ESA and Sensitive Species report writing, recreation management, impact analyses.
Labor	$50,000	BOR	WRR	
Labor	$20,000	BOR	WRR	
Labor	$920,000	BOR	WRR	
Labor	$41,000	BOR	WRR	Harvest and supply of native grass seeds to support restoration projects for mitigation of disturbance or removal of riparian vegetation as required by permitting agencies.
Labor	$181,002	BOR	WRR	Restoration-associated changes in fish abundance and riparian habitat complexity are expected to affect riparian and riverine bird communities on the Trinity River. This project includes a multi-scale, multiple methodology monitoring program designed to meet and assess compliance requirements.
Labor	$86,000	BOR	WRR	Map and quantify changes in riparian floodplain vegetation (e.g., species, age-class, initiation success, structural attributes) at channel rehabilitation sites and system-wide. The TRRP is required to replace riparian vegetation that is removed during channel rehabilitation project implementation.
Labor	$357,191	BOR	WRR	Implementation of large scale channel rehabilitation projects along the mainstem Final selection of projects is dependent on cultural resources, environmental compliance, landowner access agreements, and other factors.
Labor	$657,000	BOR	WRR	Construction of Watershed Restoration Project Sites
Labor	$150,000	BOR	WRR	Implementation of revegetation materials at channel rehabilitation projects along the mainstem Trinity River. Final selection of projects is dependent on cultural resources, environmental compliance, landowner access.
Labor	$50,000	BOR	WRR	Support Services/Equipment/Software
Labor	$200,000	BOR	WRR	Material processing of floodplain terraces to produce appropriate size class of gravels. This product will support gravel augmentation along the Trinity River mainstem during high flow releases in May-April timeframe
Labor	$100,000	BOR	WRR	On-site gravel augmentation along the Trinity

Type	Total	Agency	Fund	Description
				River to promote geomorphic processes and habitat development. Gravel augmentation takes place during high flow events.
Labor	$200,000	BOR	WRR	
Labor	$75,000	BOR	WRR	
Labor	$100,000	BOR	WRR	Inspectors
Labor	$40,000	BOR	WRR	
Monitoring - Science				
Labor	$216,000	BOR	WRR	Stream Gaging network to provide real-time and final, quality controlled data for the Trinity River and tributaries
Labor	$93,519	BOR	WRR	Monitor spring and fall Chinook salmon spawning in the mainstem Trinity River
Labor	$140,000	BOR	WRR	Five scientists, recognized as experts in the disciplines of fisheries biology, fluvial geomorphology, hydraulic engineering, hydrology, riparian ecology, wildlife biology, or aquatic ecology, form a Scientific Advisory Board (SAB). They are currently evaluating channel rehabilitation actions.
Labor	$10,000	BOR	WRR	External peer review of investigation plans or reports.
Labor	$177,674	FWS	FWSA	(FWS-Arcata Fund) Assessing effects of restoration on Chinook Salmon and Coho Salmon rearing and spawning habitat. Model the effects of restoration on Chinook Salmon and Coho Salmon habitat at future channel rehabilitation sites to help guide project design.
Labor	$294,151	FWS	FWSA	(FWS-Arcata Fund) Assessing effects of restoration on Chinook Salmon and Coho Salmon rearing and spawning habitat. Evaluate the effects of restoration on Chinook Salmon and Coho Salmon habitat at multiple spatial and temporal scales.
Labor	$714,440	FWS	FWSA	(FWS-Arcata Fund) Quantitative assessment of juvenile salmonid production in the Trinity River
Labor	$7,000	BOR	FWSA	(FWS-Arcata Fund) Annual Trinity River Division (TRD) operations are reviewed in the context of providing suitable water temperatures in the Trinity River throughout the year. Reservoir and river temperature models use forecast TRD operations, river flow, and meteorology.
Labor	$133,627	FWS	WRR	Monitor spring and fall Chinook salmon

Type	Total	Agency	Fund	Description
				spawning in the mainstem Trinity River
Labor	$938,806	BOR	WRR	Monitor adult escapement of hatchery and naturally produced spring and fall Chinook, coho and fall steelhead. Spring and fall Chinook and coho salmon and fall-run steelhead run-size estimation using mark-recapture methods. Includes Trinity River Hatchery Chinook Coded Wire Tagging.
Labor	$401,900	BOR	WRR	Includes the following fall Chinook harvest monitoring projects: Yurok Tribal Harvest, Hoopa Tribal Harvest, Lower Trinity River Sport Harvest Survey, Lower Klamath River Creel Census.
Labor	$89,150	BOR	WRR	Monitoring activities needed to support a comprehensive evaluation of gravel augmentation activities.
Labor	$337,929	BOR	WRR	Map and quantify changes in riparian floodplain vegetation (e.g., species, age-class, initiation success, structural attributes) system-wide.
Labor	$310,000	BOR	WRR	Sediment transport monitoring to develop total sediment load estimates (for gravel and sand) associated with the annual high flow releases.
Labor	$1,294,524	BOR	WRR	Physical Scientist: Provides physical science support to TRRP: Conducts sediment and geomorphic sampling, analysis and modeling. Hydraulic Engineer: Provides hydraulic engineering expertise to TRRP: Participates in planning and implementation. Fishery Biologist
2016				
Administration - Management				
Labor	$65,000	BOR	FWSA	(FWS-Arcata Fund) The Trinity Adaptive Management Working Group (TAMWG) is a group of stakeholders providing an opportunity for stakeholders to give policy and management advice about restoration activities to the TMC.
Labor	$662,964	BOR	WRR	Development and maintenance of Tribal capacity to fully and meaningfully participate in the TRRP technical and Adaptive Environmental Assessment and Management (AEAM) activities and the restoration of Trinity River Tribal Trust resources. Funds Tribals participation in TRRP implementation.

Type	Total	Agency	Fund	Description
Labor	$452,273	BOR	WRR	Members and alternates of the eight TRRP partner Federal, State, Tribe and local agencies (Reclamation, Service, NOAA, Forest Service, Hoopa Valley Tribe, Yurok Tribe, California Resources Agencies (DWR, CDFG) and Trinity County participate in four quarterly meetings and monthly teleconferences.
Labor	$114,000	BOR	WRR	Public meetings and informational materials for information transfer about rehabilitation projects, environmental assessment and compliance, monitoring and evaluation, and partnership activities.
Labor	$50,000	BOR	WRR	Serves as data manager for TRRP ensuring QA/QC and metadata for all data. GIS applications of data.
Labor	$80,000	BOR	WRR	Regional charges to process purchase requests: assessment is based on number of purchase requests, contracts, grants and agreements processed.
Labor	$395,180	FWS	FWSA	(FWS-Arcata Fund) Participation of Arcata Fish and Wildlife Office Fisheries and Conservation Partnership Program staff in the Trinity Management Council, in support of the Trinity River Adaptive Management Working Group, and in science program administration.
Equipment or Materials	$550,000	BOR	WRR	
Labor	$576,213	BOR	WRR	Program Manager, USBR co-lead: Management of TRRP program budget, activities, Reclamation staff. Secretary: Carries out all office administrative duties for TRRP. Acquisition Support Specialist: Processes all acquisitions, agreements, contracts for TRRP and monitors TRRP budget.
Implementation - RIG				
Labor	$12,000	BOR	WRR	BLM coordinates with TRRP rehabilitation projects to identify trees for removal for large wood structures for rehabilitation projects, coordinates NEPA and permitting for tree harvest.
Labor	$55,000	BOR	WRR	
Labor	$591,740	BOR	WRR	Develop Environmental Assessments

Type	Total	Agency	Fund	Description
				(NEPA/CEQA) to support rehabilitation implementation projects.
Labor	$0	BOR	WRR	TC DOT works with TRRP staff in project planning and design development including baseline infrastructure inventories , cultural resource evaluations, geological/mining input Management Indicator Species evaluations, ESA and Sensitive Species report writing, recreation management, impact analyses.
Labor	$0	BOR	WRR	Flood compliance updates.
Labor	$180,000	BOR	WRR	Restoration-associated changes in fish abundance and riparian habitat complexity are expected to affect riparian and riverine bird communities on the Trinity River. This project includes a multi-scale, multiple methodology monitoring program designed to meet and assess compliance requirements.
Labor	$971,000	BOR	WRR	Personnel.
Labor	$41,820	BOR	WRR	Harvest and supply of native grass seeds to support restoration projects for mitigation of disturbance or removal of riparian vegetation as required by permitting agencies.
Labor	$86,000	BOR	WRR	Map and quantify changes in riparian floodplain vegetation (e.g., species, age-class, initiation success, structural attributes) at channel rehabilitation sites and system-wide. The TRRP is required to replace riparian vegetation that is removed during channel rehabilitation project implementation.
Labor	$807,863	BOR	WRR	Implementation of large scale channel rehabilitation projects along the mainstem Final selection of projects is dependent on cultural resources, environmental compliance, landowner access agreements, and other factors.
Labor	$500,000	BOR	WRR	Construction of Watershed Restoration Project Sites
Labor	$10,000	BOR	WRR	MP Regional Office Support.
Labor	$150,000	BOR	WRR	Implementation of revegetation materials at channel rehabilitation projects along the mainstem Trinity River. Final selection of projects is dependent on cultural resources, environmental compliance, landowner access.
Labor	$50,000	BOR	WRR	Support Services/Equipment/Software
Labor	$200,000	BOR	WRR	Material processing of floodplain terraces to

Type	Total	Agency	Fund	Description
				produce appropriate size class of gravels. This product will support gravel augmentation along the Trinity River mainstem during high flow releases in May-April timeframe .
Labor	$50,000	BOR	WRR	On-site gravel augmentation along the Trinity River to promote geomorphic processes and habitat development. Gravel augmentation takes place during high flow events.
Labor	$100,000	BOR	WRR	
Labor	$50,000	BOR	WRR	
Labor	$100,000	BOR	WRR	Inspectors
Labor	$1,500,000	BOR	CVPRF	Implementation of large scale channel rehabilitation projects along the mainstem Final selection of projects is dependent on cultural resources, environmental compliance, landowner access agreements, and other factors.
Labor	$50,000	BOR	WRR	
Labor	$218,000	BOR	WRR	DWR will participate in design meeting and site visit, prepare detailed civil engineering designs for rehabilitation projects, survey sites in preparation for project designs and implementation, participate in value engineering studies for planned projects, and develop HEC-RAS models for flows.
Labor	$40,000	BOR	WRR	
Labor	$277,400	BOR	WRR	Support the Yurok Tribe and their consultant team to participate in the Design Team and other implementation tasks.
Labor	$323,400	BOR	WRR	Funds full participation of Hoopa Valley Tribe consultants participation in technical work group meetings and project design activities.
Labor	$120,000	BOR	WRR	USFS collaborates with TRRP on watershed projects on USFS land in Trinity River restoration corridor, develops environmental documents for permitting of projects, conducts surveys of cultural resources and indicator species, conducts wild and scenic river consultations and impact analyses.
Labor	$100,000	BOR	WRR	Completes all right of access and realty actions necessary to implement rehabilitation projects, prepares and presents project realty/mitigation updates at public meetings, assist TRRP Environmental Specialist with meeting all permit application submission requirements.
Labor	$472,300	BOR	WRR	Digital orthorectified aerial photography on the

Type	Total	Agency	Fund	Description
				Trinity River; aircraft-based LiDAR terrestrial topography data and true-color aerial photography for the full 42 mile project area; site specific aircraft-based LiDAR; and ground or sonar based terrestrial and bathymetric topographic surveys.
Monitoring - Science				
Labor	$227,700	BOR	WRR	Stream Gaging network to provide real-time and final, quality controlled data for the Trinity River and tributaries
Labor	$1,190,482	BOR	WRR	Physical Scientist: Provides physical science support to TRRP: Conducts sediment and geomorphic sampling, analysis and modeling. Hydraulic Engineer: Provides hydraulic engineering expertise to TRRP: Participates in planning and implementation.
Labor	$300,000	FWS	FWSA	(FWS-Arcata Fund) Assessing effects of restoration on Chinook Salmon and Coho Salmon rearing and spawning habitat. Model the effects of restoration on Chinook Salmon and Coho Salmon habitat at future channel rehabilitation sites to help guide project design.
Labor	$90,000	BOR	WRR	Five scientists, recognized as experts in the disciplines of fisheries biology, fluvial geomorphology, hydraulic engineering, hydrology, riparian ecology, wildlife biology, or aquatic ecology, form a Scientific Advisory Board (SAB). They are currently evaluating channel rehabilitation actions.
Labor	$380,594	FWS	FWSA	(FWS-Arcata Fund) Assessing effects of restoration on Chinook Salmon and Coho Salmon rearing and spawning habitat. Evaluate the effects of restoration on Chinook Salmon and Coho Salmon habitat at multiple spatial and temporal scales.
Labor	$602,508	FWS	FWSA	(FWS-Arcata Fund) Quantitative assessment of juvenile salmonid production in the Trinity River
Labor	$89,150	BOR	WRR	Monitoring activities needed to support a comprehensive evaluation of gravel augmentation activities.
Labor	$608,918	BOR	WRR	Monitor adult escapement of hatchery and naturally produced spring and fall Chinook, coho and fall steelhead. Spring and fall Chinook and coho salmon and fall-run steelhead run-size

Type	Total	Agency	Fund	Description
				estimation using mark-recapture methods. Includes Trinity River Hatchery Chinook Coded Wire Tagging.
Labor	$411,786	BOR	WRR	Includes the following fall Chinook harvest monitoring projects: Yurok Tribal Harvest, Hoopa Tribal Harvest, Lower Trinity River Sport Harvest Survey, Lower Klamath River Creel Census.
Labor	$337,929	BOR	WRR	Map and quantify changes in riparian floodplain vegetation (e.g., species, age-class, initiation success, structural attributes) system-wide.
Labor	$325,500	BOR	WRR	Sediment transport monitoring to develop total sediment load estimates (for gravel and sand) associated with the annual high flow releases.
Labor	$227,146	BOR	WRR	Monitor spring and fall Chinook salmon spawning in the mainstem Trinity River
Agreement	$34,450	BOR	WRR	Development of a vegetation dynamics model for the Trinity River.
Agreement	$111,932	BOR	FWSA	(FWS-Arcata Fund) Quantitative assessment of juvenile salmonid production in the Trinity River
Labor	$223,421	BOR	WRR	Coded wire tags purchased from PSFMC, Trinity River Hatchery Coded Wire Tagging done by Hoopa Valley Tribe.
Labor	$54,000	BOR	WRR	Monitor herpetological species of concern, including FYL Frog and Western Pond Turtle.
2017				
Administration - Management				
Labor	$576,213	BOR	WRR	Program Manager, USBR co-lead: Management of TRRP program budget, activities, Reclamation staff. Secretary: Carries out all office administrative duties for TRRP. Acquisition Support Specialist: Processes all acquisitions, agreements, contracts for TRRP and monitors TRRP budget.
Labor	$550,000	BOR	WRR	Office operations.
Labor	$65,000	FWS	FWSA	(FWS-Arcata Fund) The Trinity Adaptive Management Working Group (TAMWG) is a group of stakeholders providing an opportunity for stakeholders to give policy and management advice about restoration activities to the TMC.
Labor	$662,964	BOR	WRR	Development and maintenance of Tribal capacity to fully and meaningfully participate in the

Type	Total	Agency	Fund	Description
				TRRP technical and Adaptive Environmental Assessment and Management (AEAM) activities and the restoration of Trinity River Tribal Trust resources. Funds Tribals participation in TRRP implementation.
Labor	$452,273	BOR	WRR	Members and alternates of the eight TRRP partner Federal, State, Tribe and local agencies (Reclamation, Service, NOAA, Forest Service, Hoopa Valley Tribe, Yurok Tribe, California Resources Agencies (DWR, CDFG) and Trinity County participate in four quarterly meetings and monthly teleconferences.
Labor	$114,000	BOR	WRR	Public meetings and informational materials for information transfer about rehabilitation projects, environmental assessment and compliance, monitoring and evaluation, and partnership activities.
Labor	$50,000	BOR	WRR	Serves as data manager for TRRP ensuring QA/QC and metadata for all data. GIS applications of data.
Labor	$80,000	BOR	WRR	Regional charges to process purchase requests: assessment is based on number of purchase requests, contracts, grants and agreements processed.
Labor	$395,810	FWS	FWSA	(FWS-Arcata Fund) Participation of Arcata Fish and Wildlife Office Fisheries and Conservation Partnership Program staff in the Trinity Management Council, in support of the Trinity River Adaptive Management Working Group, and in science program administration.
Implementation - RIG				
Labor	$0	BOR	WRR	TC DOT works with TRRP staff in project planning and design development including baseline infrastructure inventories , cultural resource evaluations, geological/mining input Management Indicator Species evaluations, ESA and Sensitive Species report writing, recreation management, impact analyses.
Labor	$55,000	BOR	WRR	
Labor	$12,000	BOR	WRR	BLM coordinates with TRRP rehabilitation projects to identify trees for removal for large wood structures for rehabilitation projects, coordinates NEPA and permitting for tree harvest.

Type	Total	Agency	Fund	Description
Labor	$120,000	BOR	WRR	USFS collaborates with TRRP on watershed projects on USFS land in Trinity River restoration corridor, develops environmental documents for permitting of projects, conducts surveys of cultural resources and indicator species, conducts wild and scenic river consultations and impact analyses.
Labor	$100,000	BOR	WRR	Completes all right of access and realty actions necessary to implement rehabilitation projects, prepares and presents project realty/mitigation updates at public meetings, assist TRRP Environmental Specialist with meeting all permit application submission requirements.
Labor	$472,300	BOR	WRR	Digital orthorectified aerial photography on the Trinity River; aircraft-based LiDAR terrestrial topography data and true-color aerial photography for the full 42 mile project area; site specific aircraft-based LiDAR; and ground or sonar based terrestrial and bathymetric topographic surveys.
Labor	$323,400	BOR	WRR	Funds full participation of Hoopa Valley Tribe consultants participation in technical work group meetings and project design activities.
Labor	$277,400	BOR	WRR	Support the Yurok Tribe and their consultant team to participate in the Design Team and other implementation tasks.
Labor	$40,000	BOR	WRR	
Labor	$218,000	BOR	WRR	DWR will participate in design meeting and site visit, prepare detailed civil engineering designs for rehabilitation projects, survey sites in preparation for project designs and implementation, participate in value engineering studies for planned projects, and develop HEC-RAS models for flows.
Labor	$50,000	BOR	WRR	
Labor	$1,500,000	BOR	CVPRF	Implementation of large scale channel rehabilitation projects along the mainstem Final selection of projects is dependent on cultural resources, environmental compliance, landowner access agreements, and other factors.
Labor	$100,000	BOR	WRR	Inspectors
Labor	$50,000	BOR	WRR	
Labor	$100,000	BOR	WRR	
Labor	$50,000	BOR	WRR	On-site gravel augmentation along the Trinity River to promote geomorphic processes and

Type	Total	Agency	Fund	Description
				habitat development. Gravel augmentation takes place during high flow events.
Labor	$200,000	BOR	WRR	Material processing of floodplain terraces to produce appropriate size class of gravels. This product will support gravel augmentation along the Trinity River mainstem during high flow releases in May-April timeframe .
Labor	$50,000	BOR	WRR	Support Services/Equipment/Software
Labor	$150,000	BOR	WRR	Implementation of revegetation materials at channel rehabilitation projects along the mainstem Trinity River. Final selection of projects is dependent on cultural resources, environmental compliance, landowner access.
Labor	$591,740	BOR	WRR	Develop Environmental Assessments (NEPA/CEQA) to support rehabilitation implementation projects.
Labor	$10,000	BOR	WRR	MP Regional Office Support.
Labor	$500,000	BOR	WRR	Construction of Watershed Restoration Project Sites
Labor	$807,863	BOR	WRR	Implementation of large scale channel rehabilitation projects along the mainstem Final selection of projects is dependent on cultural resources, environmental compliance, landowner access agreements, and other factors.
Labor	$86,000	BOR	WRR	Map and quantify changes in riparian floodplain vegetation (e.g., species, age-class, initiation success, structural attributes) at channel rehabilitation sites and system-wide. The TRRP is required to replace riparian vegetation that is removed during channel rehabilitation project implementation.
Labor	$41,820	BOR	WRR	Harvest and supply of native grass seeds to support restoration projects for mitigation of disturbance or removal of riparian vegetation as required by permitting agencies.
Labor	$971,000	BOR	WRR	Personnel.
Labor	$180,000	BOR	WRR	Restoration-associated changes in fish abundance and riparian habitat complexity are expected to affect riparian and riverine bird communities on the Trinity River. This project includes a multi-scale, multiple methodology monitoring program designed to meet and assess compliance requirements.
Labor	$0	BOR	WRR	Flood compliance updates.

Type	Total	Agency	Fund	Description
Monitoring - Science				
Labor	$227,700	BOR	WRR	Stream Gaging network to provide real-time and final, quality controlled data for the Trinity River and tributaries
Labor	$54,000	BOR	WRR	Monitor herpetological species of concern, including FYL Frog and Western Pond Turtle.
Labor	$223,421	BOR	WRR	Coded wire tags purchased from PSFMC, Trinity River Hatchery Coded Wire Tagging done by Hoopa Valley Tribe.
Agreement	$111,932	BOR	FWSA	(FWS-Arcata Fund) Quantitative assessment of juvenile salmonid production in the Trinity River
Agreement	$34,450	BOR	WRR	Development of a vegetation dynamics model for the Trinity River.
Labor	$227,146	BOR	WRR	Monitor spring and fall Chinook salmon spawning in the mainstem Trinity River
Labor	$325,500	BOR	WRR	Sediment transport monitoring to develop total sediment load estimates (for gravel and sand) associated with the annual high flow releases.
Labor	$337,929	BOR	WRR	Map and quantify changes in riparian floodplain vegetation (e.g., species, age-class, initiation success, structural attributes) system-wide.
Labor	$411,786	BOR	WRR	Includes the following fall Chinook harvest monitoring projects: Yurok Tribal Harvest, Hoopa Tribal Harvest, Lower Trinity River Sport Harvest Survey, Lower Klamath River Creel Census.
Labor	$608,918	BOR	WRR	Monitor adult escapement of hatchery and naturally produced spring and fall Chinook, coho and fall steelhead. Spring and fall Chinook and coho salmon and fall-run steelhead run-size estimation using mark-recapture methods. Includes Trinity River Hatchery Chinook Coded Wire Tagging.
Labor	$81,950	BOR	WRR	Monitoring activities needed to support a comprehensive evaluation of gravel augmentation activities.
Labor	$602,508	BOR	FWSA	(FWS-Arcata Fund) Quantitative assessment of juvenile salmonid production in the Trinity River
Labor	$380,594	BOR	FWSA	(FWS-Arcata Fund) Assessing effects of restoration on Chinook Salmon and Coho Salmon rearing and spawning habitat. Evaluate the effects of restoration on Chinook Salmon and Coho Salmon habitat at multiple spatial and temporal scales.

Type	Total	Agency	Fund	Description
Labor	$90,000	BOR	WRR	Five scientists, recognized as experts in the disciplines of fisheries biology, fluvial geomorphology, hydraulic engineering, hydrology, riparian ecology, wildlife biology, or aquatic ecology, form a Scientific Advisory Board (SAB). They are currently evaluating channel rehabilitation actions.
Labor	$300,000	BOR	FWSA	(FWS-Arcata Fund) Assessing effects of restoration on Chinook Salmon and Coho Salmon rearing and spawning habitat. Model the effects of restoration on Chinook Salmon and Coho Salmon habitat at future channel rehabilitation sites to help guide project design.
Labor	$1,190,482	BOR	WRR	Physical Scientist: Provides physical science support to TRRP: Conducts sediment and geomorphic sampling, analysis and modeling. Hydraulic Engineer: Provides hydraulic engineering expertise to TRRP: Participates in planning and implementation.
2018				
Administration - Management				
Labor	$65,000	FWS	FWSA	(FWS-Arcata Fund) The Trinity Adaptive Management Working Group (TAMWG) is a group of stakeholders providing an opportunity for stakeholders to give policy and management advice about restoration activities to the TMC.
Labor	$662,964	BOR	WRR	Development and maintenance of Tribal capacity to fully and meaningfully participate in the TRRP technical and Adaptive Environmental Assessment and Management (AEAM) activities and the restoration of Trinity River Tribal Trust resources. Funds Tribals participation in TRRP implementation.
Labor	$452,273	BOR	WRR	Members and alternates of the eight TRRP partner Federal, State, Tribe and local agencies (Reclamation, Service, NOAA, Forest Service, Hoopa Valley Tribe, Yurok Tribe, California Resources Agencies (DWR, CDFG) and Trinity County participate in four quarterly meetings and monthly teleconferences.
Labor	$114,000	BOR	WRR	Public meetings and informational materials for information transfer about rehabilitation projects, environmental assessment and compliance, monitoring and evaluation, and partnership

Type	Total	Agency	Fund	Description
				activities.
Labor	$550,000	BOR	WRR	Office operations.
Labor	$80,000	BOR	WRR	Regional charges to process purchase requests: assessment is based on number of purchase requests, contracts, grants and agreements processed.
Labor	$395,180	FWS	FWSA	(FWS-Arcata Fund) Participation of Arcata Fish and Wildlife Office Fisheries and Conservation Partnership Program staff in the Trinity Management Council, in support of the Trinity River Adaptive Management Working Group, and in science program administration.
Labor	$576,213	BOR	WRR	Program Manager, USBR co-lead: Management of TRRP program budget, activities, Reclamation staff. Secretary: Carries out all office administrative duties for TRRP. Acquisition Support Specialist: Processes all acquisitions, agreements, contracts for TRRP and monitors TRRP budget.
Labor	$50,000	BOR	WRR	Serves as data manager for TRRP ensuring QA/QC and metadata for all data. GIS applications of data.
Implementation - RIG				
Labor	$10,000	BOR	WRR	MP Regional Office Support.
Labor	$150,000	BOR	WRR	Implementation of revegetation materials at channel rehabilitation projects along the mainstem Trinity River. Final selection of projects is dependent on cultural resources, environmental compliance, landowner access.
Labor	$807,863	BOR	WRR	Implementation of large scale channel rehabilitation projects along the mainstem Final selection of projects is dependent on cultural resources, environmental compliance, landowner access agreements, and other factors.
Labor	$86,000	BOR	WRR	Map and quantify changes in riparian floodplain vegetation (e.g., species, age-class, initiation success, structural attributes) at channel rehabilitation sites and system-wide. The TRRP is required to replace riparian vegetation that is removed during channel rehabilitation project implementation.
Labor	$41,820	BOR	WRR	Harvest and supply of native grass seeds to support restoration projects for mitigation of disturbance or removal of riparian vegetation as

Type	Total	Agency	Fund	Description
				required by permitting agencies.
Labor	$971,000	BOR	WRR	Personnel
Labor	$180,000	BOR	WRR	Restoration-associated changes in fish abundance and riparian habitat complexity are expected to affect riparian and riverine bird communities on the Trinity River. This project includes a multi-scale, multiple methodology monitoring program designed to meet and assess compliance requirements.
Labor	$0	BOR	WRR	Flood compliance updates.
Labor	$0	BOR	WRR	TC DOT works with TRRP staff in project planning and design development including baseline infrastructure inventories , cultural resource evaluations, geological/mining input Management Indicator Species evaluations, ESA and Sensitive Species report writing, recreation management, impact analyses.
Labor	$591,740	BOR	WRR	Develop Environmental Assessments (NEPA/CEQA) to support rehabilitation implementation projects.
Labor	$55,000	BOR	WRR	
Labor	$12,000	BOR	WRR	BLM coordinates with TRRP rehabilitation projects to identify trees for removal for large wood structures for rehabilitation projects, coordinates NEPA and permitting for tree harvest.
Labor	$120,000	BOR	WRR	USFS collaborates with TRRP on watershed projects on USFS land in Trinity River restoration corridor, develops environmental documents for permitting of projects, conducts surveys of cultural resources and indicator species, conducts wild and scenic river consultations and impact analyses.
Labor	$100,000	BOR	WRR	Completes all right of access and realty actions necessary to implement rehabilitation projects, prepares and presents project realty/mitigation updates at public meetings, assist TRRP Environmental Specialist with meeting all permit application submission requirements.
Labor	$472,300	BOR	WRR	Digital orthorectified aerial photography on the Trinity River; aircraft-based LiDAR terrestrial topography data and true-color aerial photography for the full 42 mile project area; site specific aircraft-based LiDAR; and ground or sonar based terrestrial and bathymetric

Type	Total	Agency	Fund	Description
				topographic surveys.
Labor	$323,400	BOR	WRR	Funds full participation of Hoopa Valley Tribe consultants participation in technical work group meetings and project design activities.
Labor	$277,400	BOR	WRR	Support the Yurok Tribe and their consultant team to participate in the Design Team and other implementation tasks.
Labor	$40,000	BOR	WRR	
Labor	$218,000	BOR	WRR	DWR will participate in design meeting and site visit, prepare detailed civil engineering designs for rehabilitation projects, survey sites in preparation for project designs and implementation, participate in value engineering studies for planned projects, and develop HEC-RAS models for flows.
Labor	$50,000	BOR	WRR	
Labor	$1,500,000	BOR	CVPRF	Implementation of large scale channel rehabilitation projects along the mainstem Final selection of projects is dependent on cultural resources, environmental compliance, landowner access agreements, and other factors.
Labor	$100,000	BOR	WRR	Inspectors
Labor	$50,000	BOR	WRR	
Labor	$100,000	BOR	WRR	
Labor	$50,000	BOR	WRR	On-site gravel augmentation along the Trinity River to promote geomorphic processes and habitat development. Gravel augmentation takes place during high flow events.
Labor	$200,000	BOR	WRR	Material processing of floodplain terraces to produce appropriate size class of gravels. This product will support gravel augmentation along the Trinity River mainstem during high flow releases in May-April timeframe .
Labor	$50,000	BOR	WRR	Support Services/Equipment/Software
Labor	$500,000	BOR	WRR	Construction of Watershed Restoration Project Sites
Monitoring - Science				
Labor	$111,932	BOR	FWSA	(FWS-Arcata Fund) Quantitative assessment of juvenile salmonid production in the Trinity River
Labor	$227,146	BOR	WRR	Monitor spring and fall Chinook salmon spawning in the mainstem Trinity River
Labor	$325,500	BOR	WRR	Sediment transport monitoring to develop total sediment load estimates (for gravel and sand) associated with the annual high flow releases.

Type	Total	Agency	Fund	Description
Labor	$337,929	BOR	WRR	Map and quantify changes in riparian floodplain vegetation (e.g., species, age-class, initiation success, structural attributes) system-wide.
Labor	$411,786	BOR	WRR	Includes the following fall Chinook harvest monitoring projects: Yurok Tribal Harvest, Hoopa Tribal Harvest, Lower Trinity River Sport Harvest Survey, Lower Klamath River Creel Census.
Labor	$608,918	BOR	WRR	Monitor adult escapement of hatchery and naturally produced spring and fall Chinook, coho and fall steelhead. Spring and fall Chinook and coho salmon and fall-run steelhead run-size estimation using mark-recapture methods. Includes Trinity River Hatchery Chinook Coded Wire Tagging.
Labor	$89,150	BOR	WRR	Monitoring activities needed to support a comprehensive evaluation of gravel augmentation activities.
Labor	$602,508	BOR	FWSA	(FWS-Arcata Fund) Quantitative assessment of juvenile salmonid production in the Trinity River
Labor	$380,594	BOR	FWSA	(FWS-Arcata Fund) Assessing effects of restoration on Chinook Salmon and Coho Salmon rearing and spawning habitat. Evaluate the effects of restoration on Chinook Salmon and Coho Salmon habitat at multiple spatial and temporal scales.
Labor	$90,000	BOR	WRR	Five scientists, recognized as experts in the disciplines of fisheries biology, fluvial geomorphology, hydraulic engineering, hydrology, riparian ecology, wildlife biology, or aquatic ecology, form a Scientific Advisory Board (SAB). They are currently evaluating channel rehabilitation actions.
Labor	$300,000	BOR	FWSA	(FWS-Arcata Fund) Assessing effects of restoration on Chinook Salmon and Coho Salmon rearing and spawning habitat. Model the effects of restoration on Chinook Salmon and Coho Salmon habitat at future channel rehabilitation sites to help guide project design.
Labor	$1,190,482	BOR	WRR	Physical Scientist: Provides physical science support to TRRP: Conducts sediment and geomorphic sampling, analysis and modeling. Hydraulic Engineer: Provides hydraulic engineering expertise to TRRP: Participates in planning and implementation.

Type	Total	Agency	Fund	Description
Labor	$227,700	BOR	WRR	Stream Gaging network to provide real-time and final, quality controlled data for the Trinity River and tributaries
Labor	$223,421	BOR	WRR	Coded wire tags purchased from PSFMC, Trinity River Hatchery Coded Wire Tagging done by Hoopa Valley Tribe.
Labor	$54,000	BOR	WRR	Monitor herpetological species of concern, including FYL Frog and Western Pond Turtle.
Agreement	$34,450	BOR	WRR	Development of a vegetation dynamics model for the Trinity River.

TRRP 2016 Project 1 charter

Trinity River Restoration

Classification: Administration, Administration

Location: , Central Valley Project Improvement Act

Funding Years: 2015 - 2016

Benefits Start Year: 2015

Priority: - Program Priority Comments:

Administration, Implementation, Monitoring

Partners: Hoopa Tribe, Yurok Tribe, Trinity County, CDFW, CDWR, NMFS, USFS, TCRCD

Related Programs: No Data.

Authority

Provision	Percentage	Comment
TRRP (b)(23)	100.0%	

Metrics

Name	Value	Units	Comment
b23: ROD (369 TAF - 815 TAF) and Minimum Annual Flow	0	cfs	

Deliverables

No Data.

Narrative

The Trinity River Restoration Program (TRRP) was founded in 2000 based on three comprehensive foundational documents: the Trinity River Flow Evaluation Final Report (TRFEFR; U.S. Fish and Wildlife Service and Hoopa Valley Tribe 1999); the Trinity River Environmental Impact Statement (TREIS/EIR; USFWS et al. 2000); and the Record of Decision (ROD; U.S. Department of the Interior 2000). These documents established a comprehensive science-based adaptive management program to restore the Trinity River's fishery resources.

Program Goals and Objectives for FY 2016

The TRRP is designed to restore the attributes of a healthy, alluvial river system by implementing variable annual instream flows, physical channel rehabilitation, sediment management, and watershed restoration. The Program's overarching goal is to restore and sustain natural production of adult anadromous fish populations downstream of Lewiston Dam to pre-

dam levels, to facilitate dependent tribal, commercial and sport fisheries full participation in the benefits of restoration via enhanced harvest opportunities. The TRRP strategy for accomplishing this goal restores and perpetually maintains fish and wildlife resources (including T&E species) by restoring the processes that produce a healthy alluvial river system.

Fiscal Year 2016 (FY 2016) restoration activities include the continued implementation of the TRRP's restoration strategy. The Program will plan and implement restoration flow releases, construct up to three channel rehabilitation projects, augment coarse sediment, execute watershed restoration activities to manage fine sediment, and continue to implement a Fish Production Model and Decision Support System to integrate monitoring and evaluation results to inform future restoration efforts. Annual restoration flow releases will be based on water year type. Channel rehabilitation projects will include a combination of habitat improvement projects that will focus on side channel construction, floodplain lowering, woody debris placement, spawning gravel processing and augmentation, and juvenile fish habitat enhancements. Annual coarse sediment augmentations will be based on water year type, results of past augmentations, and two-dimensional modeling runs. Watershed restoration projects will seek to reduce fine sediment contributions to the Trinity River. In addition to the various restoration actions, multiple activities from the TRRP's Integrated Assessment Plan are proposed under six CVPIA Annual Work Plan categories: Environmental Compliance, Pre-Project Monitoring, Post-Project Monitoring, Monitoring (Programmatic), Research (Evaluations, Studies, Investigations), and Modeling. These activities are generally intended to (1) evaluate long-term progress toward achieving Program goals and objectives; and (2) provide short-term feedback to improve Program management actions by testing key hypotheses, and reducing management uncertainties. The activities relate to the influence of restoration actions on fish, wildlife, vegetation and the physical environment.

To achieve these goals, the program does

•Adaptive Management

•Mechanical Channel Rehabilitation

•Flow Management

•Sediment Management

•Watershed Restoration

Data Management

TRRP has a Data Management and Utility Plan (http://odp.trrp.net/Data/Documents/Details.aspx?document=1510) that outlines the role of data in the program, partner agency responsibilities, data sharing, and final deposition of data. In brief:

-The multiple partner agencies are held responsible for proper management and documentation of draft data they collect or process.

-All data funded by the Department of Interior must be provided to DOI in final, documented form upon completion of funded projects.

-USFWS takes the lead on data review for fisheries data while USBR takes the lead on all other data.

-All final data, fisheries included, are to be stored in a repository at the TRRP office for management by the TRRP Data Steward.

-To promote data access for TRRP Partners and stakeholders, a subset of the repository with final, reviewed, public data is provided at http://odp.trrp.net

-TRRP data is the foundation of the analyses, syntheses and models that inform adaptive management of restoration efforts.

-All data are collected under peer reviewed protocols on file on the TRRP repository.

Risks

Risk	Likelihood	Impact
Lack of Funding	2	3
Program Funding Constraints	2	2
Permitting Constraints	2	2
Access Constraints	2	2
Environmental Constraints	2	2

Cost Estimate

Year	Fund	Total	BOR	FWS
2016	WRR	$270,000	$270,000	$0
2016	CVPRF	$1,500,000	$1,500,000	$0

Total Cost: $1,770,000

Activities and Resources

Type	Total	Agency	Fund	Description
2016				
Construction - Construction of 2016 Rehabilitation Project 1.				
Labor	$270,000	BOR	WRR	Construction of TRRP 2016 Rehabilitation Project 1.
Labor	$1,500,000	BOR	CVPRF	Construction of 2016 Rehabilitation Project 1.