



The Clark Fork Project FERC Project No. 2058

2019 Annual Implementation Plan Summaries Water and Terrestrial Resources



2019 ANNUAL IMPLEMENTATION PLAN SUMMARY – APPENDIX A

Clark Fork Project, FERC No. 2058 Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title

Idaho Tributary Habitat Acquisition and Fishery Enhancement Program

Implementation Staff Lead

Ken Bouwens, Idaho Department of Fish and Game, (208) 770-3766,
ken.bouwens@idfg.idaho.gov

Background

The purpose of this program is to offset the impacts of the power peaking operation of the Cabinet Gorge Project to native salmonids through the restoration and enhancement of lower Clark Fork River and Lake Pend Oreille (LPO) tributary watersheds, fishery monitoring and management support, and a public education and enforcement initiative focused on Bull Trout and their associated habitats in Idaho.

Outlined below is the 2019 annual implementation plan for Idaho Tributary Habitat Acquisition and Enhancement and Fish Resource Monitoring, Enhancement, and Management portions of this program. The public education and enforcement component of this program is described in Appendix D of the Clark Fork Settlement Agreement (CFSA). In addition, other CFSA appendices also support watershed and native salmonid protection, restoration, and enhancement (e.g., Fish Passage/Native Salmonid Restoration Plan, Watershed Council Program), and thereby augment the efforts to be initiated under this program.

2019 Project Plans

Tributary Habitat Acquisition and Enhancement

1. Habitat Restoration Scoping Allocation
2. Habitat Restoration and Acquired Property Maintenance and Monitoring Allocation
3. Priority Native Salmonid Habitat Acquisition and Conservation Allocation
4. Lightning Creek Rootwad Salvage
5. Habitat Prioritization Evaluation for Trestle Creek
6. Habitat Prioritization Evaluation for Caribou and Hellroaring Creeks
7. Spring and Mosquito Creeks Pathogen Survey
8. Idaho Field Station Planning
9. Habitat Prioritization Evaluation for the Upper Pack River and McCormick Creek
10. Pack River Watershed Management Plan Addendum
11. Johnson Creek Fish Passage Improvement Design and Construction
12. Lower Clark Fork River Minimum Flow and Water Temperature Monitoring

Fishery Resource Monitoring, Enhancement, and Management

13. Fish Resource Monitoring, Enhancement, and Management Plan

Work Products

Habitat Restoration Scoping Allocation

- Annual Work Summary; due December 1, 2019
- Designs and cost estimates for specific projects will be reported in the form of a Technical Memorandum or other appropriate documentation

Habitat Restoration and Acquired Property Maintenance and Monitoring Allocation

- Annual Work Summary; due December 1, 2019

Priority Native Salmonid Habitat Acquisition and Conservation Allocation

- Annual Work Summary; due December 1, 2019

Lightning Creek Rootwad Salvage

- Annual Work Summary; due December 1, 2019
- Project Completion Report (U.S. Forest Service); due December 1, 2019

Habitat Prioritization Evaluation for Trestle Creek

- Project Completion Report; due July 1, 2019
- Annual Work Summary; due December 1, 2019

Habitat Prioritization Evaluation for Caribou and Hellroaring Creeks

- Project Completion Report; due July 1, 2019
- Annual Work Summary; due December 1, 2019

Spring and Mosquito Creeks Pathogen Survey

- A project completion report will be written upon project completion; due date: November 1, 2019
- Annual Work Summary; due December 1, 2019

Idaho Field Station Planning

- A technical memorandum or other appropriate work product summarizing work from Objective 2 will be produced including but not limited to building plans, cost estimates, as well as associated permitting requirements; due date: October 1, 2019
- All work performed for this project plan in 2019 will be documented in an Annual Work Summary; due December 1, 2019

Habitat Prioritization Evaluation for the Upper Pack River and McCormick Creek

- Annual Work Summary: due December 1, 2019
- Project Completion Report: due July 1, 2020
- Annual Work Summary: due December 1, 2020

Pack River Watershed Management Plan Addendum

- Annual Work Summary; due December 1, 2019
- Addendum to the Pack River Watershed Management and TMDL Implementation Plan; final due November 1, 2020
- Annual Work Summary: due December 1, 2020

Johnson Creek Fish Passage Improvement Design and Construction

- All aspects of this project will be documented in the Appendix A Annual Work Summary (2019); due December 1, 2019
- Before and after photo points taken from each bank at the upstream end of the project looking downstream, the downstream end of the project looking upstream, and at the midpoint of the project; due December 1, 2019

Lower Clark Fork River Minimum Flow and Water Temperature Monitoring

- Project Sampling and Analysis Plan; final due April 30, 2019

- Project Quality Assurance Project Plan; final due April 30, 2019
- Cross-section Technical Memorandum; final due November 1, 2019
- Annual Project Update; due November 1, 2019
- Annual Project Update; due November 1, 2020
- Annual Project Update; due November 1, 2021
- Annual Project Update; due November 1, 2022
- Annual Project Update; due November 1, 2023
- Project Completion Report; Five-Year Report, (all data); final due November 1, 2024

Fish Resource Monitoring, Enhancement, and Management Plan

- Annual Project Update; 2017 tributary monitoring data; final due March 1, 2019
- Comprehensive Project Report; Lower Clark Fork River salmonid abundance estimates, (including the 2018 data); final due November 1, 2019
- Annual Project Update; 2018 Bull Trout redd count data; final due November 1, 2019
- Comprehensive Project Report; report summarizing 2009 – 2018 tributary monitoring data; final Due November 1, 2019
- Annual Work Summary; due December 1, 2019
- Annual Project Update; 2019 tributary monitoring data; final due November 1, 2020
- Annual Project Update; 2019 Bull Trout redd count data; final due November 1, 2020

Appendix A 2019 Budget

Project	Carryover ¹	2019
Tributary Habitat Acquisition and Enhancement Fund (including GDP infl. rate)		\$566,132
Unexpended funds w/interest		\$1,991,808
Transfer to Fish Resource Monitoring, Enhancement, and Management Fund		<u>-\$41,554</u>
Total Available		\$2,516,386
Habitat Restoration Scoping Allocation	\$0	\$15,000
Habitat Restoration and Acquired Property Maintenance and Monitoring Allocation	\$0	\$15,000
Priority Native Salmonid Habitat Acquisition and Conservation Allocation	\$0	\$60,000
Lightning Creek Rootwad Salvage	\$17,744	\$0
Habitat Prioritization Evaluation for Trestle Creek	\$17,416	\$0
Habitat Prioritization Evaluation for Caribou and Hellroaring Creeks	\$32,388	\$0
Spring and Mosquito Creeks Pathogen Survey	\$12,746	\$0
Idaho Field Station Planning	\$33,387	\$16,614
Habitat Prioritization Evaluation for the Upper Pack River and McCormick Creek	\$0	\$65,000
Pack River Watershed Management Plan Addendum	\$0	\$6,600
Johnson Creek Fish Passage Improvement Design and Construction	\$0	\$75,000
Lower Clark Fork River Minimum Flow and Water Temperature Monitoring	\$0	\$10,000
Total	\$113,681	\$263,214
MC Approved Budget		\$376,895
Unobligated Funds		\$2,139,491

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

Appendix A 2019 Budget (continued)

Project	Carryover¹	2019
Fish Resource Monitoring, Enhancement, and Management Fund (including GDP inflation rate)		\$48,879
Unexpended funds w/interest		\$5,267
Transfer from Tributary Habitat Acquisition and Enhancement Fund²		\$41,554
Total Available		\$95,700
Fish Resource Monitoring, Enhancement, and Management Plan	\$0	\$95,700
Total	\$0	\$95,700

MC Approved Budget **\$95,700**

Unobligated Funds \$0

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

² In 2019 the MC approved that the allocation for the Fishery Resource Monitoring, Enhancement and Management Plan be permanently increased to \$96,000. The funding for this plan will continue to be transferred from the Tributary Habitat Acquisition and Enhancement Program under Appendix A. These transferred funds will revert back to the Tributary Habitat Acquisition and Enhancement Fund if not spent in a given year.

2019 ANNUAL IMPLEMENTATION PLAN SUMMARY – APPENDIX B

Clark Fork Project, FERC No. 2058

Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title

Montana Tributary Habitat Acquisition and Recreational Fishery Enhancement Program

Implementation Staff Lead

Jason Blakney, Montana Fish, Wildlife and Parks (MFWP), (406) 827-9282, jblakney@mt.gov

Background

The purpose of this program is to offset the impacts of the power peaking operation of the Cabinet Gorge and Noxon Rapids Projects to native salmonids and recreational fisheries in Montana. This program is a multiple component effort that includes the restoration and enhancement of Clark Fork River tributary watersheds, support of recreational fishery monitoring and management, and evaluation and implementation of recreational fishery enhancement projects. This program is comprised of two primary components: Tributary Habitat Acquisition and Enhancement; and, Fish Resource Monitoring, Enhancement, and Management (including Sub-impoundment Fisheries).

2019 Project Plans

Tributary Habitat Acquisition and Enhancement

1. Habitat Restoration Monitoring and Native Salmonid Abundance Monitoring Plan
2. Miners Gulch Stream and Riparian Restoration Project
3. Vermilion River Sims Reach Restoration Survey and Design
4. Mainstem Bull River Reforestation on Forest Service Lands and NEPA Process
5. Match Funds for Outreach in Bull River Revegetation (Section 319 Project)
6. Stream Gage Monitoring
7. Cabinet Ranger District Automated Snow Recording Site Operation and Maintenance
8. Crow Creek Bull Trout Investigation
9. Lolo National Forest Priority Native Salmonid Habitat Restoration Assessment and Planning
10. Graves Creek Pilot Habitat Enhancement Project
11. Lower Clark Fork Watershed Group Project Coordination
12. Habitat Restoration Monitoring, Maintenance and Contingency Allocation
13. Habitat Restoration, Property Acquisition, and Conservation Easement Contingency Allocation
14. Phase II Crow Creek Stream and Riparian Restoration Project

Recreational Fishery Enhancement

15. Cabinet Gorge and Noxon Reservoir Fisheries Monitoring Plan
16. Eurasian Watermilfoil Literature Review and Noxon Reservoir Existing Data Analysis
17. Mountain Lake Fisheries Monitoring Project
18. Lower Clark Fork River Pathogen/Disease Survey of Montana Tributaries
19. Thompson Falls Field Station Facility Feasibility Study

20. Thompson Falls Field Station Phase II
21. Lower Bull River Day Use Boat Access Site Management Plan and Construction
22. Noxon Reservoir Boat Ramp Improvements

Work Products

Habitat Restoration Monitoring and Native Salmonid Abundance Monitoring Plan

- Comprehensive Project Report (2014–2016 data); final due April 1, 2019
- Annual Project Update; 2017 activities; final due April 1, 2019
- Annual Project Update; 2018 activities; final due August 1, 2019
- Annual Work Summary; from APL to Avista; due December 1, 2019

Miners Gulch Stream and Riparian Restoration Project

- Quarterly reports; due to Appendix B APL March 30, June 30, September 30, and November 15, 2019
- Annual Work Summary; from APL to Avista; due December 1, 2019
- Project Completion Report, including Vermilion River Miners Gulch Restoration Post runoff monitoring report; final due June 1, 2019
- Annual fixed point photo-documentation

Vermilion River Sims Reach Restoration Survey and Design

- Quarterly reports; due to Appendix B APL March 30, June 30, September 30, and November 15, 2019
- Annual Work Summary; from APL to Avista; due December 1, 2019
- Project Completion Report, including survey results and design recommendations; due June 1, 2019
- Annual fixed point photo-documentation

Mainstem Bull River Reforestation on Forest Service Lands and NEPA Process

- Quarterly reports; due to Appendix B APL March 30, June 30, September 30, and November 15, 2019
- Annual Work Summary; from APL to Avista; due December 1, 2019
- Project Completion Report; final due October 1, 2019
- Annual fixed point photo-documentation

Match Funds for Outreach in Bull River Revegetation (Section 319 Project)

- Quarterly reports; due to Appendix B APL March 30, June 30, and September 30, 2019.
- Project Completion Report; final due June 30, 2019
- Annual Work Summary; from APL to Avista; due December 1, 2019
- Annual fixed point photo-documentation

Stream Gage Monitoring

- Excel spreadsheet of temperature and discharge data in 30-minute intervals of Rock and Graves creeks for each calendar year (2019–2021); or for Vermilion, East Fork Bull (both channels), and Bull rivers, and Trout Creek, each calendar year (2019–2022), by February 1 of each subsequent year
- Annual Water Year Data Report – Rock and Graves creeks; January 1, 2019–2021; Vermilion, East Fork Bull, and Bull rivers, and Trout Creek; due January 1, 2019–2022
- 2018 Annual Water Year Data Report – Rock Creek; due 2019 (carryover from 2018)
- Quarterly reports; due to Appendix B APL March 30, June 30, September 30, and November 15, 2019

- Annual Work Summary; from APL to Avista; due December 1, 2019

Cabinet Ranger District Automated Snow Recording Site Operation and Maintenance

- Quarterly reports; due to Appendix B APL March 30, June 30, September 30, and November 15, 2019
- Annual Work Summary; from APL to Avista; due December 1, 2019
- Data is available in real-time via the internet:
(<http://www.wrh.noaa.gov/mesowest/getobext.php?wfo=mso&sid=CHIM8&num=48&raw=0&dbn=m>)
- Project Completion Report; final due January 1, 2020

Crow Creek Bull Trout Investigation

- Annual Work Summary; from APL to Avista; due December 1, 2019
- Project Completion Report; final due November 30, 2019

Lolo National Forest Priority Native Salmonid Habitat Restoration Assessment and Planning

- Quarterly reports; due to Appendix B APL March 30, June 30, September 30, and November 15, 2019
- Annual Work Summary; from APL to Avista; due December 1, 2019
- Summary and design report for Graves Creek; final due August 1, 2019
- NEPA analysis completed for upper Prospect Drainage and Graves Creek; due May 1, 2018

Graves Creek Pilot Habitat Enhancement Project

- Quarterly reports; due to Appendix B APL March 30, June 30, September 30, and November 15, 2019
- Design Report; review draft to AIT; due April 30, 2019
- Annual Work Summary; from APL to Avista; due December 1, 2019
- Review of substrate changes in a technical memo following two years of spring runoff; due December 15, 2021
- Annual fixed point photo-documentation

Lower Clark Fork Watershed Group Project Coordination

- Project Completion Report; Updated and EPA/DEQ-approved LCF Tributaries WRP (June 2019)
- Comprehensive Report; Updated Lower Clark Fork Stream Restoration Summary 2011-2018; review draft (4th Quarter 2019)
- Quarterly reports; due to Appendix B APL March 30, June 30, and September 30, 2019
- Annual Work Summary to Appendix B APL; November 15, 2019

Habitat Restoration Monitoring, Maintenance and Contingency Allocation

- Annual Work Summary; from APL to Avista; due December 1, 2019
- Designs for specific projects would be reported in the form of a Technical Memorandum

Habitat Restoration, Property Acquisition, and Conservation Easement Contingency Allocation

- Annual Work Summary; from APL to Avista; due December 1, 2019
- Designs for specific projects would be reported in the form of a Technical Memorandum

Phase II Crow Creek Stream and Riparian Restoration Project

- Finalized design-build contract with RDG; June 2019
- As-built monitoring report; Final due March 2020
- Annual Work Summary; from APL to Avista; due December 1, 2019

Cabinet Gorge and Noxon Reservoir Fisheries Monitoring Plan

- Annual Project Update; 2017 activities; final due March 31, 2019
- Annual Project Update; 2018 activities; final due October 31, 2019
- Annual Work Summary; from APL to Avista; due December 1, 2019

Eurasian Watermilfoil Literature Review and Noxon Reservoir Existing Data Analysis

- Quarterly Reports; due to Appendix B APL by March 30, June 30, September 30, and November 15, 2019
- Annual Work Summary; from APL to Avista; due December 1, 2019
- Project Completion Report: Review: Eurasian Watermilfoil as Fish Habitat; final due December 1, 2019

Mountain Lake Fisheries Monitoring Project

- Annual Work Summary; from APL to Avista; due December 1, 2019
- Comprehensive Project Report; final due November 30, 2020

Lower Clark Fork River Pathogen/Disease Survey of Montana Tributaries

- Project Completion Report; final due December 31, 2019

Thompson Falls Field Station Facility Feasibility Study

- Annual Work Summary; from APL to Avista; due December 1, 2019

Thompson Falls Field Station Phase II

- Annual Work Summary; from APL to Avista; due December 1, 2019

Lower Bull River Day Use Boat Access Site Management Plan and Construction

- Site Management Plan; due May 31, 2019
- Annual Work Summary; from APL to Avista; due December 1, 2019

Noxon Reservoir Boat Ramp Improvements

- Technical memorandum or other appropriate work product listing associated development options, including site plan(s) and cost estimates; due August 1, 2019
- Annual Work Summary; from APL to Avista; due December 1, 2019

As approved by the Management Committee on 3/12/2019

Appendix B 2019 Budget

Project	Carryover ¹	2019
Tributary Habitat Acquisition and Enhancement Fund (including GDP inflation rate)		\$403,370
Unexpended funds w/interest		\$2,011,037
Total Available		\$2,414,407
Habitat Restoration Monitoring and Native Salmonid Abundance Monitoring Plan	\$4,000	\$85,700
Miners Gulch Stream and Riparian Restoration Project	\$0	\$0
Vermilion River Sims Reach Restoration Survey and Design	\$0	\$0
Mainstem Bull River Reforestation on Forest Service Lands and NEPA Process	\$0	\$0
Match Funds for Outreach in Bull River Revegetation (Section 319 Project)	\$0	\$0
Stream Gage Monitoring (cost share with App C)	\$10,779	\$0
Cabinet Ranger District Automated Snow Recording Site Operation and Maintenance	\$0	\$0
Crow Creek Bull Trout Investigation	\$2,726	\$0
Lolo National Forest Priority Native Salmonid Habitat Restoration Assessment and Planning	\$0	\$0
Graves Creek Pilot Habitat Enhancement Project	\$26,000	\$0
Lower Clark Fork Watershed Group Project Coordination	\$0	\$18,150
Habitat Restoration Monitoring, Maintenance and Contingency Allocation	\$4,000	\$13,000
Habitat Restoration, Property Acquisition, and Conservation Easement Contingency Allocation	\$0	\$60,000
Phase II Crow Creek Stream and Riparian Restoration Project	\$0	\$40,000
Total	\$47,505	\$216,850
MC Approved Budget		\$264,355
Unobligated Funds		\$2,150,052

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

Appendix B 2019 Budget (continued)

Project	Carryover¹	2019
Recreational Fishery Enhancement Fund (including GDP inflation rate)		\$268,911
Unexpended funds w/interest		<u>\$1,099,564</u>
<i>Total Available</i>		<u>\$1,368,475</u>
Cabinet Gorge and Noxon Reservoir Fisheries Monitoring Plan	\$0	\$68,000
Eurasian Watermilfoil Literature Review and Noxon Reservoir Existing Data Analysis	\$4,226	\$0
Mountain Lake Fisheries Monitoring Project	\$35,869	\$0
Lower Clark Fork River Pathogen/Disease Survey of Montana Tributaries (cost share with App C)	\$0	\$12,134
Thompson Falls Field Station Facility Feasibility Study	\$48,811	\$0
Thompson Falls Field Station Phase II	\$0	\$35,250
Lower Bull River Day Use Boat Access Site Management Plan and Construction	\$66,283	\$0
Noxon Reservoir Boat Ramp Improvements	\$55,000	\$0
Total	\$210,189	\$115,384

MC Approved Budget **\$325,573**

Unobligated Funds \$1,042,902

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

2019 ANNUAL IMPLEMENTATION PLAN SUMMARY – APPENDIX C

Clark Fork Project, FERC No. 2058 Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title

Fish Passage/Native Salmonid Restoration Plan

Implementation Staff Lead

Shana Bernall, Avista, (406) 847-1293, Shana.Bernall@avistacorp.com

Background

The purpose of the Fish Passage/Native Salmonid Restoration Plan is “...to mitigate the continuing effects of the project as obstructions to fish passage, and to achieve the goal of increasing the long term population viability of native salmonids in the Lake Pend Oreille-lower Clark Fork River system” (FERC Order, Article 406). This goal is to be accomplished through the aggressive implementation of the Clark Fork River Native Salmonid Restoration Plan (NSRP).

The NSRP addresses a number of issues influencing availability of native fish stocks suitable for fish passage. Genetics, pathogens, exotic fish species, fish abundance and tributary and mainstem habitat are all discussed in the NSRP. Consideration of these factors is important in determining if fish passage is the most effective tool to increase native salmonid populations. A number of projects have been identified as activities needed for implementation in 2019 to achieve the goals of the Fish Passage/Native Salmonid Restoration Plan. The locations where all program components will be implemented are within the Avista project area, located downstream of Thompson Falls Dam, Montana proceeding downstream to Lake Pend Oreille, Idaho.

2019 Project Plans

Annual Operations

1. Upstream Fish Passage Program
2. Tributary Trapping and Downstream Juvenile Bull Trout Transport Program
3. Bull Trout Emigration Study
4. PIT-Monitoring Station Operation and Maintenance
5. East Fork Bull River Bedload Sediment Sampling 2016–2020
6. Redd Surveys in Montana Tributaries
7. Non-Native Fish Suppression Project in the East Fork Bull River

Facilities

8. Fish Capture Facilities Operation, Development, and Testing

Work Products

Upstream Fish Passage Program

- Annual Work Summary; due December 31, 2019
- Comprehensive Project Report; Upstream Fish Passage Program – Bull Trout (2001–2018 data); final due December 1, 2019
- Annual Project Update; Upstream Fish Passage Program (2019 data); final due November 1, 2020
- Comprehensive Project Report; Clark Fork River Westslope Cutthroat Trout Experimental Transport Program (2015 – 2018 data); final due December 1, 2019
- Annual Project Update; Abernathy Fish Technology Center Genetics Report (2018 data); final due August 1, 2019
- Annual Project Update; Abernathy Fish Technology Center Genetics Report (2019 data); final due August 1, 2020
- Annual Project Update; Idaho Fish Health Center Pathogen Report (2019 data); final due September 1, 2019
- Project Completion Report; Hormone Analysis, Bozeman Fish Health Center; final due December 1, 2019
- Draft lower Clark Fork River fish capture database prepared by January 31, 2021

Tributary Trapping and Downstream Juvenile Bull Trout Transport Program

- Comprehensive Project Report; Downstream Program (2018 data); final due November 1, 2019
- Annual Project Update; Downstream Program (2019 data); final due September 1, 2020
- Annual Project Update; Graves Creek M&E Plan (2018 data); final due November 1, 2019
- Annual Project Update; Graves Creek M&E Plan (2019 data); due September 1, 2020
- Annual Work Summary; Downstream Program; due December 31, 2019

Bull Trout Emigration Study

- Project Proposal; draft due March 1, 2019 (final due prior to commencing field work)
- Annual Work Summary; 2019; due December 1, 2019
- Annual Work Summary; 2020; due December 1, 2020
- Annual Work Summary; 2021; due December 1, 2021
- Master's Thesis; due December 1, 2021

PIT-Monitoring Station Operation and Maintenance

- Annual Work Summary; PIT Technology (2019); due December 1, 2019

East Fork Bull River Bedload Sediment Sampling 2016-2020

- Annual Water Year Data Report – East Fork Bull River; due January 1 of 2019–2021 (note, this is the same work product required under the Appendix B Stream Gage Monitoring Project Plan and includes sediment transport information)

Redd Surveys in Montana Tributaries

- Annual Project Update; Redd Survey (2018 data); final due April 1, 2019
- Annual Work Summary; due December 31, 2019
- Annual Project Update; Redd Survey (2019 data); final due April 1, 2020

Non-Native Fish Suppression Project in the East Fork Bull River

- Annual Project Update; Non-Native Fish Suppression (2019 data); final due June 1, 2020
- Present key findings of the Non-Native Fish Suppression Project in the East Fork Bull

River (2007–2018 data) to the AIT by October 1, 2019

- Project Completion Report; Non-Native Fish Suppression Project in the East Fork Bull River; (2007–2018 data) final due December 1, 2019
- Annual Work Summary; due December 31, 2019

Fish Capture Facilities Operation, Development, and Testing

- Annual Work Summary; Fish Capture Facilities (2019); final due December 1, 2019

Appendix C 2019 Budget

Project	Carryover ¹	2019
Annual Operations Fund (including GDP inflation rate)		\$779,846
Unexpended funds w/interest		\$1,989,223
Total Available		\$2,769,069
Upstream Fish Passage Program	\$40,000	\$345,500
Tributary Trapping and Downstream Juvenile Bull Trout Transport Program	\$132,980	\$419,738
Bull Trout Emigration Study	\$132,967	\$0
PIT-Monitoring Station Operation and Maintenance	\$0	\$35,950
East Fork Bull River Bedload Sediment Sampling 2016-2020	\$0	\$0
Redd Surveys in Montana Tributaries	\$0	\$53,200
Non-Native Fish Suppression Project in the East Fork Bull River	\$0	\$71,800
Cost share for Stream Gage Monitoring (see Appendix B project plan)	\$10,779	\$0
Cost share for LCFR Pathogen/Disease Survey (see Appendix B project plan)	\$0	\$12,133
Total	\$316,726	\$938,321

MC Approved Budget **\$1,255,047**

Unobligated Funds **\$1,514,022**

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

Project	Carryover ¹	2019
Facilities Fund (including GDP inflation rate)		\$566,134
Unexpended funds w/interest		<u>-\$2,527,124</u>
Total Available		<u>-\$1,960,990</u>
Fish Capture Facilities Operation, Development, and Testing	\$0	\$12,365,000
Total	\$0	\$12,365,000

MC Approved Budget **\$12,365,000**

Unobligated Funds **-\$14,325,990**

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

2019 ANNUAL IMPLEMENTATION PLAN SUMMARY – APPENDIX D

Clark Fork Project, FERC No. 2058 Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title

Bull Trout Protection and Public Education Project

Implementation Staff Lead

Sean Moran, Avista, (406) 847-1291, sean.moran@avistacorp.com

Background

The purpose of this project is to protect Bull Trout, a federally listed species (threatened), through a combination of enhanced law enforcement efforts by the states of Idaho and Montana, coupled with a public education outreach program. This will increase the numbers and population viability of Bull Trout by reducing intentional and incidental illegal harvest and increased public awareness concerning Bull Trout life history, habitat needs, identifying characteristics, and the potential for adverse impacts due to land use and other human activities.

Bull Trout are a key-target resource associated with the Lake Pend Oreille – lower Clark Fork River system. Widespread declines in numbers and distribution resulted in the 1998 listing of the species as threatened under the Endangered Species Act. During the consultation process for the relicensing of the Cabinet Gorge and Noxon Rapids projects, the State of Idaho identified illegal harvest of the highly vulnerable Bull Trout spawning run as a significant threat to the Lake Pend Oreille (LPO) population(s).

Given the immediate and ongoing threat that illegal harvest represented to the LPO Bull Trout populations, Idaho requested and the Clark Fork Relicensing Team agreed that an enhanced and focused law enforcement effort be supported and funded by Avista in 1998, and be considered as a relicensing Protection, Mitigation, and Enhancement (PM&E) measure. Avista subsequently provided Idaho Department of Fish and Game (IDFG) with funding which, along with additional funds provided by other groups, allowed for two years (1998 and 1999) of enhanced law enforcement effort focused on protecting LPO Bull Trout. It was also agreed that a plan should be developed for continuing this enforcement effort on a long-term basis, and it should include a specific public education and outreach component. Therefore, in addition to the second year of enhanced law enforcement effort that IDFG implemented in 1999, Avista also supported the development of a plan for a longer-term Bull Trout Protection and Public Education Project that was approved by the Management Committee (MC) and began implementation in the year 2000.

In 2004, IDFG, Montana Fish, Wildlife and Parks (MFWP), Panhandle Chapter Trout Unlimited (PCTU), and Avista began the revision of the 2000 Implementation Plan for the Bull Trout Protection and Public Education Project while incorporating aspects of the 2000 Cooperative Action Plan for the Bull Trout Protection and Public Education Project in the Lower Clark Fork – Pend Oreille Basin. In March of 2005, March 2010 and again in 2015, the MC approved updated Five-year Implementation Plans for the Bull Trout Protection and Public Education Project. In preparation for the next iteration of the Five-Year Implementation Plan, IDFG,

MFWP, PCTU, and Avista will develop a final draft in 2019 for MC approval in the spring of 2020.

Previously grouped components of each of the three implementers of the Bull Trout Enforcement and Public Education Project (i.e., MFWP, IDFG, and PCTU) annual Project Plans have been broken-out as individual Project Plans in 2019 to better account for cost-by-task associated with each and of the Program as a whole.

2019 Project Plans

1. Idaho Bull Trout Officer Support
2. Montana Bull Trout Education Communication and Website Support
3. Montana Bull Trout Education Outreach Support
4. Montana Game Warden Support
5. Bull Trout Booth Events
6. Fly Fishing Film Tour Support
7. Summerfest Support
8. Trout and About Festival Support
9. Trout Unlimited Website and Social Media Support
10. Bull Trout Education Promotional Items
11. Interpretive Signs and Kiosk Component for Trestle Creek Education Center
12. Draft Five-Year Implementation Plan (2020-2024)

Work Products

Idaho Bull Trout Officer Support

- Quarterly reports; due to Avista; March 30, June 30, and September 30, 2019
- Annual Work Summary; to Avista; due December 1, 2019
- River Enforcement Action Plan update, to IDFG; due February 1, 2019
- LPO Enforcement Action Plan update, to IDFG; due February 1, 2019
- Update Standard Operating Procedure, to IDFG; due July 1, 2019

Montana Bull Trout Education Communication and Website Support

- Quarterly reports; due to Avista; March 30, June 30, and September 30, 2019
- Annual Work Summary; to Avista; due December 1, 2019

Montana Bull Trout Education Outreach Support

- Quarterly reports; due to Avista; March 30, June 30, and September 30, 2019
- Annual Work Summary; to Avista; due December 1, 2019

Montana Game Warden Support

- Quarterly reports; due to Avista; March 30, June 30, and September 30, 2019
- Annual Work Summary; to Avista; due December 1, 2019

Bull Trout Booth Events

- Quarterly reports; due to Avista; March 30, June 30, and September 30, 2019
- Annual Work Summary; to Avista; due December 1, 2019

Fly Fishing Film Tour Support

- Quarterly reports; due to Avista; March 30, June 30, and September 30, 2019
- Annual Work Summary; to Avista; due December 1, 2019

Summerfest Support

- Quarterly reports; due to Avista; March 30, June 30, and September 30, 2019
- Annual Work Summary; to Avista; due December 1, 2019

Trout and About Festival Support

- Quarterly reports; due to Avista; March 30, June 30, and September 30, 2019
- Annual Work Summary; to Avista; due December 1, 2019

Trout Unlimited Website and Social Media Support

- Quarterly reports; due to Avista; March 30, June 30, and September 30, 2019
- Annual Work Summary; to Avista; due December 1, 2019

Bull Trout Education Promotional Items

- Quarterly reports; due to Avista; March 30, June 30, and September 30, 2019
- Annual Work Summary; to Avista; due December 1, 2019

Interpretive Signs and Kiosk Component for Trestle Creek Education Center

- Contract between Avista and a local contractor to be finalized describing work to be done and agreed upon budget; due May 15, 2019
- Cultural Resource Survey will be produced prior to finalization of the site plan to ensure compatibility with existing cultural requirements
- Construction will be completed prior to August 15, 2019 to prevent conflicts with autumn field trips and fish viewing opportunities

Draft Five-Year Implementation Plan (2020-2024)

- Working draft edits to be submitted with quarterly reports; due to Avista March 30, June 30, September 30, and November 15, 2019
- A final draft suitable for MC review; due December 1, 2019

Appendix D 2019 Budget

Project	Carryover ¹	2019
Bull Trout Protection and Public Education (includes GDP inflation rate)		\$174,559
Unexpended funds w/interest		\$36,197
Total Available		\$210,756
Idaho Bull Trout Officer Support	\$0	\$133,008
Montana Bull Trout Education Communication and Website Support	\$0	\$5,226
Montana Bull Trout Education Outreach Support	\$0	\$14,555
Montana Game Warden Support	\$0	\$11,290
Bull Trout Booth Events	\$0	\$3,105
Fly Fishing Film Tour Support	\$0	\$4,393
Summerfest Support	\$0	\$2,993
Trout and About Festival Support	\$0	\$7,471
Trout Unlimited Website and Social Media Support	\$0	\$4,163
Bull Trout Education Promotional Items	\$0	\$2,392
Interpretive Signs and Kiosk Component for Trestle Creek Education Center	\$0	\$0
Draft Five-Year Implementation Plan (2020-2024)	\$0	\$0
Total	\$0	\$188,596

MC Approved Budget **\$188,596**

Unobligated Funds \$22,160

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

2019 ANNUAL IMPLEMENTATION PLAN SUMMARY – APPENDIX E

Clark Fork Project, FERC No. 2058 Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title

Watershed Councils Program

Implementation Staff Lead

Sean Moran, Avista, (406) 847-1291, sean.moran@avistacorp.com

Background

The purpose of this program is to facilitate the protection and restoration of tributary stream habitat in the Lake Pend Oreille – lower Clark Fork River watershed. This will improve conditions for aquatic life, including macroinvertebrate communities and the native fish species (i.e., Bull Trout, Westslope Cutthroat Trout, and Mountain Whitefish) most affected by the construction and continued operation of the Clark Fork Projects.

Prior to 1999, two watershed councils (WCs) already existed within the lower Clark Fork River drainage, one in the Elk Creek drainage (tributary to Cabinet Gorge Reservoir) and one in the Prospect Creek drainage (tributary to Noxon Reservoir). The Elk Creek WC had already implemented a number of stream assessment, protection and enhancement measures. The degree of local stakeholder interest and success of this WC was a catalyst for developing and establishing this Watershed Council Program. The Prospect Creek WC began on-the-ground restoration in 1999, in part through funds from the Montana Tributary Habitat Acquisition and Recreational Fishery Enhancement Program (Appendix B of the Clark Fork Settlement Agreement [CFSA]).

This Watershed Council Program was initiated in 1999. In the initial year of implementation for this program, efforts focused on developing and disseminating informational materials about WCs and this program, designing a decision making process for reviewing WC related funding needs and requests and new WC formation. Since 1999, Rock Creek, Whitepine Creek, Trout Creek, Pilgrim Creek, Little Beaver Creek, and the Bull River WCs were formed. Beginning in 2000, Avista entered into an agreement with the Green Mountain Conservation District (GMCD), which allowed GMCD to directly administer these program funds in Montana.

In 2001, the Pack River WC formed in Idaho. Subsequently in 2002, Avista entered into an agreement with Bonner Soil and Water Conservation District (BSWCD), which allowed BSWCD to directly administer these program funds for the Pack River WC.

The Lower Clark Fork Watershed Group (LCFWG, an umbrella and organizational group for the Montana WCs) was officially formed early in 2004, and received its 501-3C status from the IRS in 2005. The LCFWG now facilitates all activities for the Montana WCs, helps coordinate Avista's restoration efforts with other state and/or federal activities, as well as seeking non-CFSA funding for watershed activities.

If needed, developed ranking criteria can be utilized to prioritize providing administrative funding or other support to facilitate the formation and initial development of new WC and to support existing WC.

2019 Project Plans

1. Pack River Watershed Council, Bonner Soil and Water Conservation District
2. Lower Clark Fork Watershed Council Projects

Work Products

Pack River Watershed Council, Bonner Soil and Water Conservation District

- Semi-Annual Newsletters (Spring and Fall 2019)
- Annual Work Summary (including financial report) to Avista; due December 1, 2019

Lower Clark Fork Watershed Council Projects

- Quarterly reports to Avista; due March 30, June 30, and September 30, 2019
- Annual Work Summary to Avista; due December 1, 2019

Appendix E 2019 Budget

Project	Carryover ¹	2019
Watershed Councils Program Fund (including GDP inflation rate)		\$13,965
Unexpended funds w/interest		<u>\$8,843</u>
Total Available		\$22,808
Pack River Watershed Council, Bonner Soil and Water Conservation District	\$0	\$4,100
Lower Clark Fork Watershed Council Projects	\$0	\$12,100
Total	\$0	\$16,200

MC Approved Budget **\$16,200**

Unobligated Funds \$6,608

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

2019 ANNUAL IMPLEMENTATION PLAN SUMMARY– APPENDIX F1

Clark Fork Project, FERC No. 2058 Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title

Clark Fork River Water Quality Monitoring Program

Implementation Staff Lead

Paul Kusnierz, Avista, (406) 847-1274, paul.kusnierz@avistacorp.com

Background

The purpose of this measure is to provide for the systematic, long-term monitoring of nutrients and metals in the lower Clark Fork River as part of the former Tri-State Water Quality Council (TSWQC) Monitoring Program. Excessive nutrient loading and metals contamination in the middle and upper portions of the lower Clark Fork River were cause for water quality concerns in the lower Clark Fork River - Lake Pend Oreille (LCFR-LPO) system. Interest in monitoring long-term trends in the quality of water entering and exiting the reservoirs, and a desire for a better understanding of how the reservoirs may be functioning as nutrient or metals “sinks” led to consensus that a systematic, long-term, and coordinated nutrient and metals monitoring program for the lower Clark Fork waters should be implemented.

During the collaborative relicensing process and development of the Settlement Agreement, it was agreed that support and use of the TSWQC program to meet the long-term water quality monitoring needs associated with the Clark Fork projects would facilitate a coordinated approach to long-term water quality monitoring of the LCFR-LPO system.

As part of the overall TSWQC program, Appendix F1 supported data collection, analysis and reporting of nutrient and metals data at three sampling locations on the lower Clark Fork River. This included: monthly sampling above Noxon Reservoir, downstream of Noxon Rapids Dam and downstream of Cabinet Gorge Dam, and additional peak flow sampling (six samples during the peak flow period each year) at the Cabinet Gorge site. This data, along with data generated at 29 other sites on the Clark Fork River, was used to assess the status of and trends in water quality (utilizing concentrations and loads) basin-wide. A monitoring program report was prepared annually that summarizes data collection and analysis for each field season (calendar year), and at every five-year interval an evaluation of the data was conducted to assess water quality trends and the effectiveness of water quality measures in the watershed.

In addition, data collected at the Cabinet Gorge site was used to estimate nutrient loading to Lake Pend Oreille from the Clark Fork (Montana) watershed. The Montana/Idaho Border Nutrient Load Agreement (2002) sets a target for total phosphorus to protect open lake water quality of Lake Pend Oreille and also sets load allocations for Montana and local Idaho sources to meet that target. For the purposes of determining that the allocation for Montana (259,500 kg/year total phosphorus) is not being exceeded, the Agreement sets forth monitoring objectives for evaluating nutrient data from the Clark Fork River at the border (i.e., the Cabinet Gorge site).

Therefore, the samples collected below Cabinet Gorge Dam are integral to achieving key objectives of the Clark Fork-Pend Oreille watershed management plan.

At every five-year interval, a review of data is conducted to evaluate water quality trends and the effectiveness of water quality measures in the watershed. These ‘trend reports’ were completed in 2004 and 2008. These evaluations resulted in an analysis of spatial trends in concentration and load, time series trends, statistical comparisons with applicable water quality targets, and an overall interpretation of the water quality health of the three-state basin. Avista staff participated on the TSWQC Monitoring Committee and assisted in the design and scope of work of the five-year evaluations to ensure consistency with the long-term water quality monitoring needs of the Clark Fork projects.

Because of past exceedances of water quality standards, Idaho Department of Environmental Quality (DEQ) developed and adopted Total Maximum Daily Loads (TMDL) for the Lower Clark Fork River sub-basin in 2007. In order to support TMDL-related data needs as well as monitor potential impacts of future activities that could impact the water quality of the Lower Clark Fork River, Idaho DEQ and other members of the TSWQC Monitoring Committee, including Avista staff, identified metals of concern as copper, zinc, and cadmium to be included in the 2008–2012 monitoring program.

In October 2012 TSWQC officially closed its doors. This closure was due in large part to decreasing administrative dollars as well as state and federal grants, and also affected the 2012 monitoring program with no monthly sampling occurring in September through November. Without the coordination and facilitation functions once provided by the TSWQC, it was now incumbent upon those active monitoring participants to continue the three state water quality monitoring activities.

In December 2012, Montana DEQ, Idaho DEQ, Missoula Wastewater Treatment Facility, University of Montana, and Avista met to review the previous monitoring program and to devise a more sustainable program. The Washington Department of Ecology continued to maintain their two monitoring sites on the Pend Oreille River. Plum Creek Timber Company and the U.S. Forest Service no longer contribute funds to the program. This group continues to meet annually to review the previous year’s sampling efforts, review annual work products, coordinate the upcoming monitoring season, and plan future activities. Beginning in 2015, through a contractual agreement between Montana DEQ and the Clark Fork Coalition (CFC), the CFC has now taken the lead for the group’s coordination, facilitation, and the production of the annual water quality reports.

In recent years, irregularities in the discharge hydrograph have occurred in the lower Clark Fork River at the Montana-Idaho border as measured at U.S. Geological Survey (USGS) Gaging Station 12391950 Clark Fork River below Cabinet Gorge Dam. The irregularities include runoff beginning earlier than historically “normal” and a stunted peak flow. These irregularities have spurred discussion among the group regarding the number and timing of sample collection during peak flow monitoring. In 2016, the group requested the contractor conduct an analysis to review historical data to address concerns and provide recommendations on how to move forward with the peak flow monitoring. In 2017 the Clark Fork Water Quality Monitoring

Committee agreed to the following changes in Avista's sampling plan: 1) water quality sampling downstream of Thompson Falls Dam (site number CFR 28) and Noxon Rapids Dam (site number CFR 29) will only occur July-September, and 2) the annual field quality control review will be discontinued. These changes were implemented in a manner to reduce costs to a level that are congruent to Avista's Appendix F1 obligation without the loss of important water quality data. The MC was made aware that such changes may occur at the March 14, 2017 MC meeting and was informed of these changes on May 16, 2017.

2019 Project Plans

1. Clark Fork River Water Quality Monitoring Program

Work Products

- Annual Project Update: 2018 monitoring report to be prepared by the Clark Fork Coalition; final due July 30, 2019
- Annual Work Summary; final due December 1, 2019
- Comprehensive Project Report: 2013–2017 5-year Trends Analysis; final due December 1, 2019

Appendix F1 2019 Budget

Project	Carryover ¹	2019
Clark Fork Water Quality Monitoring Program (including GDP inflation rate)		\$20,949
Unexpended funds w/interest		\$18,821
2023 Funding Obligation (5-year trends analysis)		<u>\$0</u>
<i>Total Available</i>		\$39,770
Clark Fork River Water Quality Monitoring Program	\$11,594	\$20,925
Total	\$11,594	\$20,925

MC Approved Budget **\$32,519**

Unobligated Funds \$7,251

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

2019 ANNUAL IMPLEMENTATION PLAN SUMMARY – APPENDIX F2

Clark Fork Project, FERC No. 2058 Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title

Monitoring of Noxon Reservoir Stratification and Mobilization of Sediment Nutrients/Metals

Implementation Staff Lead

Paul Kusnierz, Avista, (406) 847-1274, paul.kusnierz@avistacorp.com

Background

The purpose of this monitoring effort is to collect data concerning the potential for nutrients or metals deposited in Noxon Reservoir sediments to remobilize back into the water column during periods of reservoir stratification.

Elevated nutrient levels and metals contamination are high-priority water quality concerns within the Clark Fork River – Lake Pend Oreille (CFR-LPO) system. The available information on sediment, nutrient, and metals transport and deposition in the CFR-LPO system indicates that Noxon Reservoir acts as a beneficial sediment, nutrient, and metals “sink” of varying efficiency, limiting the degree to which they are transported downstream into Lake Pend Oreille. The Water Resources Work Group, now known as the Water Resources Technical Advisory Committee (WRTAC), identified an information need related to whether low oxygen conditions in deeper waters of the reservoir during the rare periods of reservoir stratification might allow for the remobilization of nutrients or metals previously deposited and retained in reservoir sediments. Therefore, it was decided that, in conjunction with the Tri-State Water Quality Council (TSWQC) monitoring program, a better understanding of the stratification related limnologic processes in Noxon Reservoir would further improve the overall understanding and management of water quality issues, concerns, and needs in the CFR-LPO system. Appendix F2 called for the monitoring to be conducted three times during the term of the FERC license.

As per this appendix, average daily inflows to Noxon Reservoir are monitored, via the USGS website, during the July 1 through September 30 period. If outflow from Noxon is equal to or less than 8,000 cfs for at least 4 out of 7 consecutive days during the noted time period, water column monitoring will commence. This monitoring “trigger” was first reached on August 22, 2000. Avista contracted with PBS&J, Inc. (formerly Land & Water Consulting, Inc.), the same contractor involved in the overall TSWQC monitoring program, to: a) monitor reservoir stratification, b) develop water sampling protocols, c) perform analytical quality assurance and quality controls, and d) perform data management and reporting. Reservoir water column monitoring continued throughout the month of September 2000. The reservoir did thermally stratify; however, low dissolved oxygen conditions were not detected at depth, the trigger for intensive nutrient and metals sampling.

Based upon the 2000 sampling effort, and considering the low flow situation in 2001, a similar sampling effort began on July 26, 2001, before the predetermined flow trigger was met. This

2001 sampling effort detected both thermal and oxygen stratification, and therefore nutrient and metals samples were taken, and subsequently analyzed (Noxon Rapids Reservoir, Fall 2001 Stratification Monitoring Results, September 2002, Land & Water Consulting, Inc.). Listed below are several of PBS&J's conclusions:

- The potential for widespread mobilization of nutrients or metals from reservoir sediments due to reducing conditions associated with stratification appeared to be low.
- Ongoing monthly surface water monitoring by the Tri-State Water Quality Council will continue to document upstream and downstream differences in nutrient concentrations at the Noxon HED, thus independent summer stratification monitoring by Avista for nutrient components is probably unnecessary.
- Metals mobilization from reservoir sediments did not appear to be an issue of concern in Noxon Rapids HED. Consequently, further sampling for metals does not appear justified and the Avista stratification monitoring for metals effects should be discontinued.

As per this appendix, collection of additional data, concerning the potential for nutrients or metals deposited in Noxon Reservoir sediments to remobilize back into the water column during periods of reservoir stratification, was to occur as many as three different years of stratified reservoir conditions over the term of the new license. Reservoir sampling has occurred in 2000 and 2001. In 2019, stratification sampling will occur in Noxon Reservoir if outflow from Noxon Rapids Dam is less than or equal to 8,000 cfs on 2 out of 7 consecutive days when inflow and flow forecasts indicate that the average daily outflow of equal to or less than 8,000 cfs for 4 out of 7 consecutive days will be met. The trigger must be met between July 1 and August 7.

2019 Project Plans

1. Monitoring of Noxon Reservoir Stratification and Mobilization of Sediment Nutrients/Metals

Work Products

- 2019 Annual Work Summary; due December 1, 2019
- Comprehensive Project Report (if stratification sampling occurs); due May 1, 2020

Appendix F2 2019 Budget

Project	Carryover ¹	2019
Monitoring Noxon Reservoir Stratification		\$51,827
Unexpended funds w/interest		\$0
Total Available		\$51,827
Monitoring of Noxon Reservoir Stratification and Mobilization of Sediment Nutrients/Metals	\$51,827	\$0
Total	\$51,827	\$0
MC Approved Budget		\$51,827
Unobligated Funds		\$0

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

2019 ANNUAL IMPLEMENTATION PLAN SUMMARY – APPENDIX F3

Clark Fork Project, FERC No. 2058 Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title

Aquatic Organism Tissue Analysis

Implementation Staff Lead

Paul Kusnierz, Avista, (406) 847-1274, paul.kusnierz@avistacorp.com

Background

The purpose of this measure is to provide for a commitment on the part of Avista to fund the collection and analysis of fish or other aquatic organism tissue samples from Noxon Rapids or Cabinet Gorge reservoirs for the presence of heavy metals or other substances of concern. While the WRTAC agreed that tissue analysis was not warranted in reservoir waters on a routine basis, they were interested in seeing metals analysis included in the former Tri-State Water Quality Council's monitoring along the lower Clark Fork River (provided for in Appendix F1). Therefore, this appendix retains a commitment from Avista to fund tissue analysis should public health or other concerns arise in the future.

In 2004, and in response to a previous WRTAC request, an annotated bibliography on Clark Fork River-Lake Pend Oreille bed sediment and fish tissue information was produced and distributed. Information from the state of Montana pertaining to acceptable toxin levels in fish tissue was also made available. Also in 2004, fish were collected during the fall Noxon Reservoir sampling conducted through Appendix B activities and the 2003/2004 experimental trap netting operations on Lake Pend Oreille conducted through Appendix F5 activities. Based upon results (non-Clark Fork Settlement Agreement funded) obtained in 2005, both Montana Fish, Wildlife, and Parks (MFWP) and Idaho Department of Health and Welfare issued fish consumption advisories to the angling public based upon fish tissue mercury and/or PCB levels.

During the fall 2010 reservoir sampling conducted through Appendix B activities, MFWP staff collected fish and crayfish tissue samples from both Noxon and Cabinet Gorge reservoirs for mercury analysis. Based upon results (non-Clark Fork Settlement Agreement funded) obtained in 2011, MFWP updated fish consumption advisories (see: fwp.mt.gov) to the angling public based upon fish and crayfish tissue mercury and/or PCB levels.

During spring 2014, MFWP and Avista staff collected Northern Pike *Esox lucius*, Walleye *Sander vitreus*, Smallmouth Bass *Micropterus dolomieu*, and Yellow Perch *Perca flavescens* tissue samples from Noxon Reservoir for PCB's dioxin and furan analysis, with a final report produced by MFWP in 2015.

During the spring and fall 2015 reservoir sampling, MFWP and Avista staff again collected Northern Pike, Walleye, Smallmouth Bass and Yellow Perch tissue samples from both Noxon and Cabinet Gorge reservoirs for mercury (Hg) analysis, with a final report being produced in December, 2017.

2019 Project Plans

None.

Work Products

None.

Appendix F3 2019 Budget

Project	Carryover ¹	2019
Aquatic Organism Tissue Analysis		\$0
Unexpended funds w/interest		\$0
<i>Total Available</i>		\$0
	\$0	\$0
Total	\$0	\$0

MC Approved Budget \$0

Unobligated Funds \$0

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

2019 ANNUAL IMPLEMENTATION PLAN SUMMARY – APPENDIX F4

Clark Fork Project, FERC No. 2058 Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title

Water Quality Protection and Monitoring Plan for Maintenance, Construction, and Emergency Activities

Implementation Staff Lead

Eric Oldenburg, Avista, (406) 847-1290, eric.oldenburg@avistacorp.com

Background

In the past, greater than normal reservoir drawdown and/or restricted discharge at the Cabinet Gorge Project have occasionally been required during emergency situations (e.g., drowning or a vehicle in the river) or for maintenance purposes (e.g., tailrace and dam inspections). In discussing the types of activities that have required unusual project operations in the past or that might require them in the future, the WRTAC agreed that a standardized set of policies and procedures for dealing with these activities would help to ensure that impacts to water quality or aquatic resources are minimized or avoided.

The purpose of this measure was to provide for the development and implementation of a Water Quality Protection and Monitoring Plan for Maintenance, Construction, and Emergency Activities (Plan). The goal of the Plan is to minimize or eliminate negative effects associated with project related maintenance, construction, and emergency activities on Clark Fork River water quality and associated resources. The intent was to have clearly defined policies and plans for notification of, and consultation with, resource agencies prior to undertaking planned maintenance or construction activities that require a change from normal project discharge or reservoir levels (i.e., other than as provided for in the General Operating Limits for Noxon Rapids, and Cabinet Gorge, Project Operations Package PM&E, Settlement Agreement Appendix T). The Plan was also to include standardized agency notification guidelines, as well as water quality and resource protection and monitoring actions that will be implemented in the event of unforeseen and sudden changes to project operations due to emergency or other unforeseen circumstances.

After nearly 16 months of work by Avista staff and involved WRTAC members, the Management Committee (MC) approved the final Plan in September of 2001. As part of Avista's required annual reporting process, the MC approved Plan was submitted to FERC on April 15, 2002, which also began Plan implementation.

In 2010, Avista believed it was time to revise the original 2002 Plan and the MC concurred at their March 2010 meeting. At their September 2010 meeting, the WRTAC decided to have the original WRTAC entities (USFS, Kalispel Tribe, IDFG, MFWP, Idaho DEQ, and Montana DEQ) that worked on producing the first plan review the 2010 final draft Plan. The MC approved the revised 2010 Plan via consent mail on December 3, 2010. FERC approved the 2010 Plan by Order dated June 23, 2011.

Implementation of the Water Quality Protection and Monitoring Plan for Maintenance, Construction, and Emergency Activities is limited to a small number of tasks and all costs are borne by Avista. Thus, all required elements are listed below and a formal Project Plan is not necessary.

2019 Project Plans

- Avista Hydro Generation & Production and Environmental Affairs staff will meet for their annual internal coordination meeting to review and discuss planned maintenance and/or construction activities that may affect Cabinet Gorge minimum flow and/or reservoir elevation general operating limits.
- As per the USFS 4(e) conditions, Avista will meet with the USFS to review planned 2019 construction and maintenance activities. Identify those activities which are of concern to the USFS and that could invoke implementation of the Plan.
- In the event that standard operating procedures for the Clark Fork Project (minimum flow and/or reservoir elevations) are interrupted, implement the MC approved, Water Quality Protection and Monitoring Plan for Maintenance, Construction, and Emergency Activities at the Cabinet Gorge and Noxon Rapids HEDs, including its protocol for agency notification, monitoring, and Best Management Practices.
- Annually update the designated contacts for the Plan, as needed.

Work Products

- There are no reports or work products associated with the Water Quality Protection and Monitoring Plan for Maintenance, Construction, and Emergency Activities.

Appendix F4 2019 Budget

- Should the Plan need to be implemented in 2019, the total actual costs associated with monitoring and Best Management Practices implementation will be borne by Avista.

Project	Carryover ¹	2019
Water Quality Protection and Monitoring Plan for Maintenance, Construction and Emergency Activities		\$0
Unexpended funds w/interest		\$0
<i>Total Available</i>		\$0
Costs associated with monitoring and best management practices implementation will be borne by Avista with no effect on funding of this program.	\$0	\$0
Total	\$0	\$0
MC Approved Budget		\$0
Unobligated Funds		\$0

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

2019 ANNUAL IMPLEMENTATION PLAN SUMMARY – APPENDIX F5

Clark Fork Project, FERC No. 2058 Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title

Dissolved Gas Supersaturation Control, Mitigation, and Monitoring

Implementation Staff Leads

Paul Kusnierz, Avista, (406) 847-1274, paul.kusnierz@avistacorp.com and
Ken Bouwens, Idaho Department of Fish and Game, (208) 770-3766,
ken.bouwens@idfg.idaho.gov

Background

The purpose of this measure is to provide for the study, control, mitigation, and monitoring of gas supersaturation and the associated impacts to biological resources in the lower Clark Fork-Lake Pend Oreille (LCFR-LPO) system related to spill at the Clark Fork Projects. In 1999, this measure committed Avista to multiple actions and activities for achieving this purpose, including: 1) selective use of specific spillways at both Noxon Rapids and Cabinet Gorge dams, 2) a comprehensive total dissolved gas (TDG) monitoring program, 3) intensive study of the effects of gas supersaturation to fish inhabiting the LCFR-LPO system, 4) a comprehensive feasibility analysis of structural alterations or other engineering alternatives for reducing excessive TDG levels due to spill at Cabinet Gorge Dam, and 5) development and implementation of a Gas Supersaturation and Control Program that addresses the issue of excessive TDG levels downstream of the Cabinet Gorge Dam.

Through 2002, Avista worked with IDFG, Idaho DEQ, Montana DEQ, Idaho Rivers United, the Kalispel Tribe and the USFWS on all aspects of this Program, including physical and biological TDG monitoring efforts and interpretation of results, engineering alternatives and subsequent engineering options, and continued efforts on the finalization of the Gas Supersaturation and Control Program (GSCP). As per the requirements of this Program, in December of 2002 Avista submitted a proposed GSCP to Idaho DEQ for their "... review, modification, and approval." As per other FERC requirements, the proposed GSCP was also submitted to the USFWS and FERC. Per an agreement dated February 10, 2004, Idaho DEQ approved the GSCP, as did the USFWS by letter dated February 25, 2004. Avista began implementation of the GSCP in 2004, even though FERC did not issue the order approving the GSCP until January 1, 2005.

The GSCP included the continued annual TDG monitoring and results reporting at the three permanent TDG monitoring locations, the phased construction of two water conveyance tunnels, and an associated annual mitigation program. The original river bypass tunnels used at the Cabinet Gorge site were planned to be reconstructed into the water conveyance tunnels, thus decreasing the level of spill.

At an August 2007 Workshop at ENSR's labs with the experts from the Project Design Team, the Gas Supersaturation Subcommittee (GSSC) determined by consensus that performance indicators demonstrated that the construction and operation of the bypass tunnel would not meet

the TDG performance levels in the Clark Fork River below Cabinet Gorge Dam anticipated in the GSCP. Design development results indicated there was a ‘fatal flaw’ in the ‘final control and default strategies’ and the tunnels should not be reconstructed. The September 2008 final Design Development Report for the Cabinet Gorge Bypass Tunnels Project documented these final results. The Management Committee agreed with the GSSC conclusion that the GSCP needed to be revised and directed the GSSC to amend the GSCP, such that alternatives were selected that incrementally reduced, offset, or otherwise mitigated TDG due to spill at Cabinet Gorge Dam. At their September 2009 meeting, the Management Committee approved the Final 2009 Addendum to the GSCP, with subsequent FERC approval by Order dated February 19, 2010.

The GSCP Addendum abandoned the original concept of reopening the two diversion tunnels and instead requires Avista to evaluate and, if feasible over the next few years, construct a variety of smaller-capacity options to abate TDG. Feasibility studies on the top five abatement alternatives were completed in 2011, and based upon those studies Avista initiated work on the top two alternatives, power generation on the existing bypass tunnels and spillway modifications. An engineering study for the power generation on the existing bypass tunnel was completed in 2013.

The spillway modification project involves modifying gate bays on the spillway by adding precast-concrete roughness elements (baffle blocks) on the spillway ogee downstream of the gate, configured for maximum effectiveness at a fixed gate opening of approximately 6,000 cfs. A five foot long flip bucket extension to the existing crest was also added. In 2013, a field prototype for the spillway 2 modifications was tested and confirmed a positive performance in reducing TDG downstream of the dam. Cavitation repairs were completed on spillway 2 in 2014. Modeling and engineering of refinements to the spillway 2 design were conducted in 2014.

Construction of modifications on spillways 4 and 5 was initiated in 2015 and completed in spring 2016. The performance of spillways 4 and 5 was tested and confirmed a positive performance in 4 reducing TDG downstream of the dam, but the results for 5 were inconclusive. The river depth is substantially shallower below spillway 5 than 1 through 4 and as a result there may be less of a reduction in TDG when there is minimal spill such as what occurred in 2016. Construction of modifications on spillways 1 and 3 was initiated in July 2017 and completed in October 2017. Performance testing of spillways 1 and 3 was completed in July 2018.

2019 Project Plans

Operations

1. There is no project plan for operations; however, Avista will continue to utilize spillway operations at Noxon Rapids and Cabinet Gorge dams as outlined in the GSCP, amended in 2009 to include operation of the Ice and Trash spillways, amended in 2013 to include operation of the modified spillway 2 during spill, amended in 2016 to include use of spillways 4 and 5, and amended in 2018 to include use of spillways 1 and 3. The results of the ongoing TDG monitoring program will be utilized to evaluate the effectiveness of the selective spillway usage for reducing TDG levels, and identify any potential changes in spillway usage.

TDG Monitoring

1. Total Dissolved Gas Monitoring

TDG Mitigation and Monitoring Program

2. Analysis of Gas Bubble Disease Monitoring Data
3. Lake Pend Oreille Stock Identification of Bull Trout
4. Lake Pend Oreille Experimental Walleye Angler Incentive Program
5. Lake Pend Oreille/Clark Fork River Walleye Population Assessment
6. Lake Pend Oreille Lake Trout Angler Incentive Program
7. Lake Pend Oreille Trap and Gill Net Program
8. Demography of Adfluvial Bull Trout in Lake Pend Oreille
9. LPO/Lower Clark Fork Strontium Isotope Baseline Collection
10. Lake Pend Oreille Bull Trout Survival Study
11. Lake Pend Oreille Nearshore Index Netting
12. Box Canyon Reservoir Northern Pike Suppression
13. Lake Pend Oreille Tributary Creel
14. Trophic and Phytoplankton Monitoring in Lake Pend Oreille Idaho
15. Temperature Monitoring Data Compilation

GSCP Alternative:

16. Gas Supersaturation Control Program Total Dissolved Gas Abatement

Work Products

Operations

- Annual Work Summary; final due December 1, 2019

Total Dissolved Gas Monitoring

- Annual Work Summary; final due December 1, 2019
- Annual Project Update; final due March 1, 2020

Analysis of Gas Bubble Disease Monitoring Data

- Annual Project Update; 2018 data; final due March 1, 2019
- Annual Work Summary; final due December 1, 2019
- Annual Project Update; 2019 data; final due March 1, 2020

Lake Pend Oreille Stock Identification of Bull Trout

- Comprehensive Project Report; Lake Pend Oreille Stock ID of Bull Trout; final due September 1, 2019

Lake Pend Oreille Experimental Walleye Angler Incentive Program

- Annual Work Summary; due December 1, 2019
- Annual Project Update – 2019; final due November 1, 2020

Lake Pend Oreille/Clark Fork River Walleye Population Assessment

- Annual Project Update – 2018 (this work product was a Project Completion Report in the 2018 project plan); final due November 1, 2019
- Annual Work Summary; due December 1, 2019
- Annual Project Update – 2019; final due November 1, 2020

Lake Pend Oreille Lake Trout Angler Incentive Program

- Annual Project Update – 2018; final due November 1, 2019

- Annual Work Summary; due December 1, 2019
- Comprehensive Report summarizing data through 2016; Due December 1, 2019
- Annual Project Update – 2019; final due November 1, 2020
- Comprehensive Report summarizing data through 2017; Due December 1, 2020

Lake Pend Oreille Trap and Gill Net Program

- Annual Project Update – 2018; final due November 1, 2019
- Annual Work Summary; due December 1, 2019
- Comprehensive Report summarizing data through 2016; Due December 1, 2019
- Annual Project Update – 2019; final due November 1, 2020
- Comprehensive Report summarizing data through 2017; Due December 1, 2020

Demography of Adfluvial Bull Trout in Lake Pend Oreille

- Code (in language for Program R or similar) for integrated population model; due July 1, 2019
- Project Completion Report; outlining the findings for Objectives 1-3; final due November 1, 2019
- Publication of model and results in peer reviewed literature; submission due April 2020

LPO/Lower Clark Fork Strontium Isotope Baseline Collection

- Project Completion Report; final due July 1, 2019
- Annual Work Summary; due December 1, 2019

Lake Pend Oreille Bull Trout Survival Study

- Annual Project Update; 2017 data; final due April 1, 2019
- Annual Project Update; 2018 data; final due November 1, 2019
- Annual Work Summary; due December 1, 2019
- Project Completion Report; final due November 1, 2020

Lake Pend Oreille Nearshore Index Netting

- Annual Work Summary; due December 1, 2019
- Project Completion Report; due December 1, 2020

Box Canyon Reservoir Northern Pike Suppression

- Comprehensive Project Report (2012 –2018 data); final due June 1, 2019
- Annual Project Update; final due November 30, 2019
- Comprehensive Project Report; final due November 30, 2021

Lake Pend Oreille Tributary Creel

- Project Completion Report; final due November 1, 2019
- Annual Work Summary; due December 1, 2019

Trophic and Phytoplankton Monitoring in Lake Pend Oreille Idaho

- Annual work summary; final due December 1, 2019

Temperature Monitoring Data Compilation

- Data entry template with final headers and qualifiers; final due July 1, 2019
- List of long-term monitoring sites; final due November 1, 2019
- Standard protocol for CFSA temperature monitoring; final due December 1, 2019
- Annual Work Summary; final due December 1, 2019
- Updated database; final due March 1, 2020

Gas Supersaturation Control Program Total Dissolved Gas Abatement

- Annual Work Summary; due December 1, 2019

Appendix F5 2019 Budget

Project	Carryover	2019
Total Dissolved Gas Monitoring		\$59,967
Unexpended funds w/interest		\$0
Total Available		\$59,967
Total Dissolved Gas Monitoring	\$8,567	\$51,400
Total	\$8,567	\$51,400

MC Approved Budget **\$59,967**

Unobligated Funds \$0

Project	Carryover ¹	2019
Mitigation (including GDP inflation rate)		\$845,354
Unexpended funds w/interest		\$1,850,353
Total Available		\$2,695,707
Analysis of Gas Bubble Disease Monitoring Data	\$1,257	\$14,000
Lake Pend Oreille Stock Identification of Bull Trout	\$0	\$0
Lake Pend Oreille Experimental Walleye Angler Incentive Program	\$75,250	\$2,000
Lake Pend Oreille/Clark Fork River Walleye Population Assessment	\$9,275	\$55,000
Lake Pend Oreille Lake Trout Angler Incentive Program	\$0	\$138,900
Lake Pend Oreille Trap and Gill Net Program	\$0	\$338,389
Demography of Adfluvial Bull Trout in Lake Pend Oreille	\$1,357	\$0
LPO/Lower Clark Fork Strontium Isotope Baseline Collection	\$8,994	\$0
Lake Pend Oreille Bull Trout Survival Study	\$0	\$26,500
Lake Pend Oreille Nearshore Index Netting	\$25,503	\$0
Box Canyon Reservoir Northern Pike Suppression	\$16,278	\$31,275
Lake Pend Oreille Tributary Creel	\$18,101	\$0
Trophic and Phytoplankton Monitoring in Lake Pend Oreille Idaho	\$0	\$8,100
Temperature Monitoring Data Compilation	\$0	\$10,300
Total	\$156,014	\$624,464

MC Approved Budget **\$780,478**

Unobligated Funds \$1,915,229

¹ This column denotes estimated carryover of unexpended, approved project funds as of January 1.

Project	Carryover	2019
GSCP Alternatives		\$2,103,000
Unexpended funds w/interest		\$0
Total Available		\$2,103,000
Gas Supersaturation Control Program Total Dissolved Gas Abatement		\$2,103,000
Total		\$2,103,000

MC Approved Budget **\$2,103,000**

Unobligated Funds \$0

2019 ANNUAL IMPLEMENTATION PLAN SUMMARY– APPENDIX G

Clark Fork Project, FERC No. 2058 Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title

Implementation of Land Use Management Plan (LUMP)

Implementation Staff Lead

Jason Pignanelli, Avista, (406) 847-1283, Jason.Pignanelli@avistacorp.com

Background

The purpose of this measure is to provide for the long-term protection and maintenance of sensitive and important resources on Avista owned project lands, including the existing rural and semi-remote character of the shoreline, through implementation of the Land Use Management Plan (LUMP). Avista project lands will be managed to protect these qualities while still allowing for reasonable public access and other compatible uses.

Year 2019 work efforts are a continuation of past efforts and remain focused on implementing the three distinct components of the LUMP:

2019 Project Plans

1. Administration of the Land Use Management Plan (LUMP)
2. Monitoring Associated with the Land Use Management Plan (LUMP)
3. Enforcement Associated with the Land Use Management Plan (LUMP)

Work Products

Administration

- Unless a specific document is created for a task, all work associated with this Project Plan will be documented in the 2019 Annual Work Summary. Due Date: December 1, 2019.
- Develop annual pesticide and herbicide report. Due Date: December 1, 2019.
- Quarterly reports from the Sanders County Aquatic Invasive Plants Task Force (APTIF) will be provided, including a specific breakdown of the coordinator's activities. Due Dates: March 31; June 30; September 30; December 1.

Monitoring

- All work associated with this Project Plan will be documented in the 2019 Annual Work Summary. Due Date: December 1, 2019.

Enforcement

- All work associated with this Project Plan will be documented in the 2019 Annual Work Summary. Due Date: December 1, 2019.
- Quarterly reports from Montana Fish Wildlife and Parks will be provided per the MOU agreement. Due Dates: March 31; June 30; September 30; December 1, 2019.
- Annual report from Idaho Fish and Game will be provided per the MOU agreement. Due Date: December 1, 2019.

Appendix G 2019 Budget

Project	Carryover ¹	2019
Land Use Management Plan (Estimate)²		\$177,500
Unexpended funds w/interest		\$0
Total Available		\$177,500
Administration of the Land Use Management Plan (LUMP)	\$0	\$75,000
Managing Aquatic Invasive Plants on Noxon and Cabinet Gorge Reservoirs	\$0	\$27,500
Monitoring Associated with the Land Use Management Plan (LUMP)	\$0	\$10,000
Enforcement Associated with the Land Use Management Plan (LUMP)	\$0	\$65,000
Total	\$0	\$177,500

MC Approved Budget **\$177,500**

Unobligated Funds \$0

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

² Estimated costs are projections made now however; Avista will pay the actual costs as approved by the Management Committee. The amount needed to implement this PM&E may vary greatly by year depending upon legal/survey needs to address issues related to the management of Avista owned Project lands.

2019 ANNUAL IMPLEMENTATION PLAN – APPENDIX H

Clark Fork Project, FERC No. 2058 Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title: Implementation of the Recreation Resource Management Plan (RRMP)

Implementation Staff Lead: Implementation Staff Lead:

Jason Pignanelli, Avista, (406) 847-1283, Jason.Pignanelli@avistacorp.com

Background: The purpose of this measure is to provide for appropriate and adequate recreational opportunities and facilities associated with the Clark Fork Project through implementation of the Recreation Resource Management Plan (RRMP). Seven goals to be met through its implementation include:

1. Manage existing recreation resource needs.
2. Manage future recreation resource needs.
3. Provide adequate and safe public access.
4. Preserve recreation resources.
5. Coordinate recreation planning and needs.
6. Provide cost-effective and desirable recreation opportunities.
7. Provide compatible recreation opportunities.

Year 2019 work efforts are a continuation past efforts and remain focused on implementing the five distinct components of the RRMP:

2019 Project Plans

1. RRMP Administration and Resource Integration
2. RRMP Recreation Facility Development
3. RRMP Monitoring
4. Operation and Maintenance of recreation facilities
5. Interpretation and Education Program

Work Products

Administration

- Unless a specific document is created for a task, all work associated with this Project Plan will be documented in the 2019 Annual Work Summary. Due Date: December 1, 2019.

Facility Development

- Unless a specific document is created for a task, all work associated with this Project Plan will be documented in the 2019 Annual Work Summary. Due Date: December 1, 2019.

Monitoring

- Unless a specific document is created for a task, all work associated with this Project Plan will be documented in the 2019 Annual Work Summary. Due Date: December 1, 2019.

- Report summarizing data from the 20 automated traffic counters to measure use at various developed and dispersed recreation sites and trails. January 2020
- Summary maps showing dispersed recreation areas along the projects and permitted dock locations (showing dock densities per 0.5 mile segments of shoreline). January 2020

Operation and Maintenance

- Unless a specific document is created for a task, all work associated with this Project Plan will be documented in the 2019 Annual Work Summary. Due Date: December 1, 2019.

Interpretation and Education

- Unless a specific document is created for a task, all work associated with this Project Plan will be documented in the 2019 Annual Work Summary. Due Date: December 1, 2019.

Appendix H 2019 Budget

Project	Carryover ¹	2019
Recreation Resource Management Plan (Estimate)²		\$212,157
Unexpended funds w/interest		\$0
Total Available		\$212,157
RRMP Administration and Resource Integration	\$0	\$0
RRMP Monitoring	\$0	\$10,000
Operation and Maintenance of recreation facilities		
Avista Sites	\$0	\$150,000
USFS Sites ³	\$0	\$31,657
MFWP - Flat Iron FAS and Thompson Falls State Park	\$0	\$15,000
Interpretation & Education	\$0	\$5,500
Total	\$0	\$212,157

MC Approved Budget **\$212,157**

Unobligated Funds \$0

Facilities Fund (including GDP inflation rate)		\$215,907
Unexpended funds w/interest		\$362,518
Total Available		\$578,425
RRMP Recreation Facility Development	\$0	\$564,700
Total	\$0	\$564,700

MC Approved Budget **\$564,700**

Unobligated Funds \$13,725

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

² Estimated costs are projections made now however; Avista will pay the actual costs as approved by the Management Committee.

³ Annual contribution is adjusted by percentage of change of the Gross Domestic Product-Implicit Price Deflator.

2019 ANNUAL IMPLEMENTATION PLAN - APPENDIX I

Clark Fork Project, FERC No. 2058 Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title

Implementation of the Aesthetics Management Plan

Implementation Staff Lead

Jason Pignanelli, Avista, (406) 847-1283, Jason.Pignanelli@avistacorp.com

Background

The purpose of this measure is to provide for the protection and enhancement of aesthetic resources associated with Avista's Clark Fork Projects and to mitigate for project related impacts to those resources through the implementation of the Aesthetics Management Plan (AMP). Aesthetic guidelines and considerations of the AMP are implemented by permit standards and land use classifications of the Land Use Management Plan, site design and monitoring in the Recreation Resource Management Plan, and shoreline stabilization guidelines of the Shoreline Stabilization Guidelines Program. Ongoing coordination with other interest groups and agencies will occur as described for in the AMP.

2019 Project Plans

1. Monitor recreation, land management, erosion, and facility construction programs to ensure AMP guidelines are considered.
2. Continue to investigate measures to restore views and remove vegetation as needed, also addressing any identified issue from the 2018 re-inventory of 41 key viewpoints. Sites will be revisited again in 2023 to take photos to compare to past inventories.

Work Products

- Unless a specific document is created for a task, all work associated with this Project Plan will be documented in the 2019 Annual Work Summary. Due Date: December 1, 2019.

Appendix I 2019 Budget

Project	Carryover ¹	2019
Aesthetics Management Plan (Estimate) ²		\$7,000
Unexpended funds w/interest		\$0
<i>Total Available</i>		\$7,000
Vegetation management at various viewpoints	\$0	\$7,000
Total	\$0	\$7,000
MC Approved Budget		\$7,000
Unobligated Funds		\$0

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

² Estimated costs are projections made now; however, Avista will pay the actual costs as approved by the Management Committee.

2019 ANNUAL IMPLEMENTATION PLAN APPENDIX J

Clark Fork Project, FERC No. 2058 Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title: Implementation of the Wildlife, Botanical and Wetland Management Plan

Implementation Staff Lead:

Nate Hall, Avista, (406) 847-1281, nate.hall@avistacorp.com

Background

The purpose of this resource protection, mitigation, and enhancement measure is to provide for the organization and presentation of the various wildlife, botanical and wetland management activities and site-specific plans within a single, comprehensive management plan document. The goal is to have a dynamic reference document that the in-field staff, technical advisory committees, and Management Committee (MC) can utilize and refer to for guidance in implementing the required PM&Es and overall wildlife, botanical, and wetland resource management program for the Clark Fork Project. When the management plan was developed, it did not fully account for the detailed annual reports that are developed for each of the PM&E's. As a result the update to the plan has changed direction in primarily being a summary of accomplishments related to habitat protection. These updates will be made available to the various committees and Management Committee as they are completed. Also with the removal of Appendix N1-N3, it was approved by the Management Committee in 2016 that observations of bald eagles, peregrine falcons and common loons would be included in the annual summary associated with this PM&E.

2019 Project Plans

- Utilize the Wildlife, Botanical and Wetland Management Plan to help guide implementation of Wildlife, Botanical, and Wetland Protection, Mitigation, and Enhancement programs.
- Continue to update the habitat protection spreadsheet as acquisitions are completed.
- As approved by the Management Committee at their March 15, 2016 meeting, observations regarding bald eagles, peregrine falcons, and common loons will be reported here annually.

Work Products

- Update and provide copies of Habitat Protection Spreadsheet at annual fall Management Committee meeting. Includes discussion of future management of any parcel owned by Avista for more than 10 years, and if continues in Avista ownership after that, each parcel will be revisited every five years after that.
- Unless a specific document is created for a task, all work associated with this Project Plan will be documented in the 2019 Annual Work Summary. Due Date: December 1, 2019.

Appendix J 2019 Budget

Project	Carryover ¹	2019
Wildlife, Botanical and Wetland Management Plan (Estimate)²		\$5,000
Unexpended funds w/interest		\$0
<i>Total Available</i>		\$5,000
Update Habitat Protection Spreadsheet and provide updates on bald eagles, Peregrine falcon, and common loon nesting activity.	\$0	\$5,000
Total	\$0	\$5,000

MC Approved Budget **\$5,000**

Unobligated Funds \$0

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

² Estimated costs are projections made now; however, Avista will pay the actual costs as approved by the Management Committee

2019 ANNUAL IMPLEMENTATION PLAN SUMMARY– APPENDIX K

Clark Fork Project, FERC No. 2058 Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title

Wildlife Habitat Acquisition, Enhancement and Management Program

Implementation Staff Lead

Nate Hall, Avista, (406) 847-1281, nate.hall@avistacorp.com

Background

The purpose of this program is to mitigate for the potential effects to wildlife resources and habitat due to the continued operation of the Clark Fork Project. The program will focus on the types of habitat most significantly affected, such as wetland and riparian habitat. The goal is to provide for a continuing source of financial resources that will be used to acquire, protect, enhance, and/or manage important wildlife habitat in the vicinity of the projects.

2019 Project Plans

1. Operation and Maintenance of Acquired Property and Contingency Fund
2. Habitat Acquisition and Conservation and Contingency Fund

Work Products

Operation and Maintenance of Acquired Property and Contingency Fund

- All work associated with this Project Plan will be documented in the 2019 Annual Work Summary. Due Date: December 1, 2019.

Habitat Acquisition and Conservation and Contingency Fund

- All work associated with this Project Plan will be documented in the 2019 Annual Work Summary. Due Date: December 1, 2019.

Appendix K 2019 Budget

Project	Carryover ¹	2019
Wildlife Habitat Acquisition and Enhancement Plan (including GDP inflation rate)		\$281,254
Unexpended funds w/interest		<u>\$194,679</u>
Total Available		\$475,933
Operation and Maintenance of Acquired Property and Contingency Fund	\$0	\$90,000
Habitat Acquisition and Conservation and Contingency Fund	\$0	\$60,000
Total	\$0	\$150,000

MC Approved Budget **\$150,000**

Unobligated Funds **\$325,933**

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

2019 ANNUAL IMPLEMENTATION PLAN SUMMARY– APPENDIX L

Clark Fork Project, FERC No. 2058 Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title

Black Cottonwood Habitat Protection and Enhancement

Implementation Staff Lead

Nate Hall, Avista, (406) 847-1281, nate.hall@avistacorp.com

Background

The purpose of this measure is to provide for the protection of black cottonwood trees and stands on Avista owned project lands through the development of site-specific management and enhancement plans for three specific cottonwood sites identified by the Wildlife, Botanical, and Wetlands Work Group (WBWWG). Additionally, existing stands and trees will be protected through the implementation of land use classifications in the Land Use Management Plan (LUMP).

Site-specific management plans were developed in 2000. Efforts in 2019 will focus on the continued protection of black cottonwood stands and trees through the implementation of land use classifications in the LUMP. The site-specific enhancement efforts at Hereford Slough (completed in early 2003 and treated again in 2007) will continue to be monitored to determine response, and implement additional management efforts as needed.

An 80 x 80 foot woven wire enclosure was built in the spring of 2015 at the Hereford Slough cottonwood site. Even though the spring and summer of 2015 through 2017 were unseasonably hot and dry, cottonwood generation was good within the enclosure. Regeneration occurred from exposed roots, cutoff stumps and seed germination. Efforts in 2019 will include continued monitoring of the enclosure and conduct any needed maintenance to the fence that is needed.

2019 Project Plans

- Continue to protect black cottonwood stands along the Clark Fork Project through the implementation of the Land Use Management Plan.
- Continue to monitor and maintain the enclosure at Hereford Slough.
- Based on success of the Hereford Slough enclosure, construct additional enclosure within this stand (continuation of 2018 efforts).

Work Products

- All work associated with this Project Plan will be documented in the 2019 Annual Work Summary. Due Date: December 1, 2019.

Benefit to the Resource

Benefits are protecting and managing existing black cottonwood stands. These stands provide high wildlife value, but are relatively limited in distribution along the Clark Fork Project.

Cultural Resource Survey Needs

Ground and vegetation disturbance will take place in an area already surveyed for original enclosure construction in 2015. Therefore no additional cultural resource surveys will be required.

Appendix L 2019 Budget

Project	Carryover ¹	2019
Black Cottonwood Habitat & Enhancement Fund (including GDP inflation rate)		\$6,860
Unexpended funds w/interest		<u>\$80,637</u>
Total Available		\$87,497
Construct new exclosures at Hereford Slough site	\$15,000	\$0
Total	\$15,000	\$0

MC Approved Budget **\$15,000**

Unobligated Funds \$72,497

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

2019 ANNUAL IMPLEMENTATION PLAN SUMMARY– APPENDIX M

Clark Fork Project, FERC No. 2058 Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title

Wetland Protection and Enhancement Program

Implementation Staff Lead

Nate Hall, Avista, (406) 847-1281, nate.hall@avistacorp.com

Background

The purpose of this measure is to provide for the protection of wetlands occurring on Avista owned project lands, and for the evaluation and potential enhancement of selected wetland areas. The overall goal is to ensure no net loss of wetlands, or of wetland function and values in certain high-priority wetland areas while also evaluating opportunities for enhancements.

2019 Project Plans.

- Continue to investigate the potential for a wetland enhancement project on the 2016 Twin Creek acquisition.
- Monitor enhancements previously completed at Hereford Slough, McKay Creek, Finley Flats, and Blacktail Bay/Islands.

Work Products

- All work associated with this Project Plan will be documented in the 2019 Annual Work Summary. Due Date: December 1, 2019.
- If it appears the Twin Creek project is feasible, a specific proposal will be developed for MC review.

Benefit to the Resource

Benefits are preserving or enhancing of certain high value wetland habitat, including their function and values.

Cultural Resource Survey Needs

No ground or vegetation disturbance is planned for 2019, therefore no cultural resource surveys will be required.

Appendix M 2019 Budget

Project	Carryover ¹	2019
Wetlands on Avista Property		\$0
Unexpended funds w/interest		<u>\$133,678</u>
<i>Total Available</i>		<u>\$133,678</u>
Investigation and proposal development (if appropriate) of wetland enhancement project on Twin Creek property.	\$10,000	\$0
Total	\$10,000	\$0

MC Approved Budget **\$10,000**

Unobligated Funds \$123,678

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

2019 ANNUAL IMPLEMENTATION PLAN SUMMARY– APPENDIX P

Clark Fork Project, FERC No. 2058 Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title

Forest Habitat Protection and Enhancement

Implementation Staff Lead

Jason Pignanelli, Avista, (406) 847-1283, Jason.Pignanelli@avistacorp.com

Background

The purpose of this measure is to provide for the protection and enhancement of specific forest habitat parcels of Avista project land along the reservoirs. The Wildlife, Botanical, and Wetland Work Group identified these parcels as having significant wildlife habitat value.

2019 Project Plans

1. Continue to manage these areas that have been classified as Conservation 1, and as such are afforded the maximum protection provided through the Land Use Management Plan.
2. Honey Flats is being managed to minimize impacts to the site (e.g., no motorized vehicles, no timber harvest, and minimize human use of site). The Confederated Salish and Kootenai Tribe and CRMG have expressed an interest in having this site managed for traditional plants and uses. Continue to work with the Confederated Salish and Kootenai Tribe to define management options.
3. Continue to monitor and enforce the road closure to Stevens Creek Point (closure was instituted in 2001).
4. Continue to prohibit motorized use of Finley Flats Point.
5. Continue to utilize the Montana Fish Wildlife and Parks Block Management Program to provide hunter access to the Tuscor, South Fork Bull River, and Wood Duck properties.
6. Continue weekly patrols of the forested lands surrounding the State Shop property, and continue to reduce the amount of disturbance and litter in this area.
7. Initiate timber stand improvement efforts in stands that have disease (beetle kill, root rot, mistletoe, etc.), high fire danger or other problems. This work will be evaluated on a case by case basis and specific proposals will be presented to the TRTAC and MC as they are developed.

Work Products

- All work associated with this Project Plan will be documented in the 2019 Annual Work Summary. Due Date: December 1, 2019.

Benefit to the Resource

Benefits include the protection, and where appropriate, enhancement of timber stands on specific Avista owned project lands.

Cultural Resource Survey Needs

If a specific proposal is developed in 2019, it will be evaluated by CRMG to determine cultural resource survey needs.

Appendix P 2019 Budget

Project	Carryover ¹	2019
Forest Habitat for Selected Avista Lands Annual Fund (Periodic)²		\$5,000
Unexpended funds w/interest		\$0
Total Available		\$5,000
Monitoring and ongoing management activities	\$0	\$5,000
Total	\$0	\$5,000

MC Approved Budget **\$5,000**
Unobligated Funds \$0

Improvement Fund		\$0
Unexpended funds w/interest		\$0
Total Available		\$0
Total	\$0	\$0

MC Approved Budget **\$0**
Unobligated Funds \$0

Timber Revenue		\$0
Unexpended funds		\$175,103
Total Available		\$175,103
Total	\$0	\$0

MC Approved Budget **\$0**
Unobligated Funds \$175,103

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

² Periodic costs are one-time costs. Avista will pay the actual costs as approved by the Management Committee.

2019 ANNUAL IMPLEMENTATION PLAN SUMMARY– APPENDIX Q

Clark Fork Project, FERC No. 2058 Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title

Reservoir Island Protection

Implementation Staff Lead

Nate Hall, Avista, (406) 847-1281, nate.hall@avistacorp.com

Background

The purpose of this measure is to provide for the protection of islands owned by Avista in the project reservoirs. The goal is to maintain the unique and high quality wildlife habitat functions and values of these islands.

2019 Project Plans

- Continue to ensure restrictions developed for the protection of these areas utilizing the land use classifications described in the Land Use Management Plan.

Work Products

- All work associated with this Project Plan will be documented in the 2019 Annual Work Summary. Due Date: December 1, 2019.

Benefit to the Resource

Protect and maintain the unique and high quality wildlife habitat functions and values of these islands.

Cultural Resource Survey Needs

No cultural resource surveys will be needed for this PM&E.

Appendix Q 2019 Budget

Costs covered through implementation of Appendix G.

Project	Carryover ¹	2019
Reservoir Island Protection (Periodic) ²		\$0
Unexpended funds w/interest		\$0
<i>Total Available</i>		\$0
Costs for this measure are covered in the implementation of the Land Use Management Plan (Appendix G)	\$0	\$0
Total	\$0	\$0
MC Approved Budget		\$0
Unobligated Funds		\$0

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

² Periodic costs are one-time costs, Avista will pay the actual costs as approved by the Management Committee.

2019 ANNUAL IMPLEMENTATION PLAN SUMMARY – APPENDIX R

Clark Fork Project, FERC No. 2058 Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title

Clark Fork Heritage Resource Program

Implementation Staff Lead

Lisa Vollertsen, Avista, (406) 847-1288, lisa.vollertsen@avistacorp.com

Background

The Heritage Resource Program was an interim program developed in collaboration with the Cultural Resource Management Group (CRMG) during the Clark Fork relicensing process. The program emphasized specific cooperative stewardship strategies for the management of cultural and historic resources, to be implemented by the CRMG following the development of the Clark Fork Heritage Resource Management Plan (HRMP). In 2000, the CRMG developed the HRMP in accordance with the Clark Fork Heritage Resource Program, Clark Fork Settlement Agreement (CFSA), and Programmatic Agreement, to guide the management and mitigation of effects to historic and/or cultural resources associated with the Clark Fork Project. The HRMP was developed to ensure coordination of the protection, mitigation, and enhancement (PM&E) measures associated with the Clark Fork Project with representatives from Coeur d'Alene, Kootenai, Confederated Salish and Kootenai, and Kalispel Tribes, Idaho and Montana State Historic Preservation offices, U.S. Forest Service, and Avista, which collectively make up the CRMG. Implementation of the Plan also ensures compliance with Section 106 of the National Historic Preservation Act.

2019 Project Plans

1. Clark Fork Heritage Resource Management Program

Work Products

- Annual Work Summary*; final due December 1, 2019

**Due to potential confidentiality issues associated with cultural resources, some or all of the information collected may not be available to the Management Committee and/or the general public.*

Appendix R 2019 Budget

Project	Carryover ¹	2019
Clark Fork Heritage Resource Program (Estimate)²		\$50,500
Unexpended funds w/interest		\$0
<i>Total Available</i>		\$50,500
Clark Fork Heritage Resource Program	\$25,000	\$25,500
Total	\$25,000	\$25,500

MC Approved Budget **\$50,500**

Unobligated Funds \$0

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

² Estimated costs are projections made now; however, Avista will pay the actual costs as approved by the Management Committee.

2019 ANNUAL IMPLEMENTATION PLAN SUMMARY– APPENDIX S

Clark Fork Project, FERC No. 2058 Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title

Erosion Fund and Shoreline Stabilization Guidelines Program

Implementation Staff Lead

Nate Hall, Avista, (406) 847-1281, nate.hall@avistacorp.com

Background

The purpose of this measure is to provide funds to ameliorate adverse impacts to resources of interest caused by the continued operation of the Clark Fork Projects. Resources of interest include important cultural or natural resources, and private or public property not covered by applicable easement. The PM&E measure also calls for the distribution of the Erosion Control Guidelines Manual, developed in 2000, to interested individuals.

A geotechnical firm will be retained for review of proposals Avista receives from adjacent landowners for erosion control projects.

2019 Project Plans

- Address erosion concerns identified by the CRMG.
- Continue to evaluate and provide technical assistance for an erosion control project being undertaken by an adjacent landowner on Noxon Reservoir (Vermilion Point Area). This is a continuation of a 2017 project. The ability to complete this project will depend upon the adjacent landowner's availability.
- Utilize a geotechnical contractor to assist with evaluating erosion control proposals received by Avista.

Work Products

- Due to the confidential nature of cultural sites, CRMG directed work will not be reported on as part of the public reporting process.
- Work with the adjacent landowner on Noxon Reservoir to complete the project, although completion of this project will be based on the landowner's availability to do the work. November 1, 2019.
- All work associated with this Project Plan will be documented in the 2019 Annual Work Summary. Due Date: December 1, 2019.

Benefit to the Resource

Benefits are provided by addressing impacts to resources of interest caused by erosion attributed to the continued operation of the Clark Fork Project. Resources of interest include important cultural or natural resources, and private or public property not covered by applicable easement.

Cultural Resource Survey Needs

Work proposed under this fund will be addressed by the Cultural Resource Management Group for each project as they are identified.

Appendix S 2019 Budget

Project	Carryover ¹	2019
Erosion Fund and Shoreline Stabilization Annual Fund (Fund with Cap)²		\$0
Unexpended funds w/interest		<u>\$200,000</u>
Total Available		\$200,000
Address erosion concerns identified by CRMG	\$0	\$50,000
Geotechnical support and working with adjacent landowner on Noxon Reservoir	\$8,000	\$0
Total	\$8,000	\$50,000
MC Approved Budget		\$58,000
Unobligated Funds		\$142,000

¹ This column denotes estimated carryover of unexpended, approved funds as of January 1.

² Funds are dollars made available annually.

2019 ANNUAL IMPLEMENTATION PLAN SUMMARY – APPENDIX T

Clark Fork Project, FERC No. 2058 Cabinet Gorge and Noxon Rapids Hydroelectric Developments

Title

Project Operations Package

Implementation Staff Lead

Eric Oldenburg, Avista, (406) 847-1290, eric.oldenburg@avistacorp.com

Background

The Project Operations Package outlines the General Operating Limits (minimum flow below the Cabinet Gorge Dam and water level fluctuation limits in both project reservoirs) that were agreed to in the Clark Fork Settlement Agreement (CFSA). Within these limits, Avista utilizes peaking operations at Noxon Rapids and Cabinet Gorge dams. Mitigation for any negative effects of peaking operations within the General Operating Limits is carried out within other Protection, Mitigation, and Enhancement (PM&E) programs (e.g., the Montana and Idaho tributary enhancement programs, the Bull Trout Protection and Public Education Project, and the Watershed Council Program). Therefore, historically, the Project Operations Package has only encompassed maintenance of the General Operating Limits and the requirement to coordinate project operations with the operators of the Albeni Falls Project.

Prior to the CFSA, the minimum discharge requirement through Cabinet Gorge Dam was 3,000 cubic feet per second (cfs). Through the CFSA, this minimum discharge requirement was increased to 5,000 cfs. However, the CFSA also defined a 10-year period of study to evaluate any effects of the change in minimum flow. This evaluation was completed in 2011 and concluded that the increased minimum discharge requirement provided no measurable benefit to fish populations in the lower Clark Fork River when compared to the previous minimum flow of 3,000 cfs (Ryan and Jakubowski 2012). Thus in 2017, as part of the first amendment to the CFSA, the Management Committee (MC) agreed to reinstate the 3,000 cfs minimum flow requirement for Cabinet Gorge Dam from November 1 through September 14 and the minimum flow will remain at 5,000 cfs from September 15 to October 31. An order issued by FERC on December 18, 2017 approved the new minimum flows which are now effective. Along with this agreement, Avista made an additional funding commitment to address any remaining uncertainty over any question of potential effects of the reduced minimum flow. The funding commitment was a one-time addition of \$1,000,000 (not subject to escalation) to the CFSA Appendix T fund, which Avista holds in trust. Use of these dollars is restricted to capital projects and may not be used for operations or maintenance of existing or new sites or facilities. Further, any use of these funds shall be approved by the MC pursuant to the Annual Implementation Plan process.

2019 Project Plans

1. Project Operations and Coordination
2. Priest River Coldwater Bypass Alternatives Assessment
3. Cabinet Gorge Fish Hatchery Spring Collection System Upgrade

Work Products

Project Operation and Coordination

- Annual Work Summary; due December 1, 2019

Priest River Coldwater Bypass Alternatives Assessment

- Alternatives Analysis; includes conceptual design for at least three alternatives based on existing data, and evaluation matrix with pros and cons, engineering cost estimates, and access and easement requirements; due May 30, 2019
- Annual Work Summary; due December 1, 2019

Cabinet Gorge Fish Hatchery Spring Collection System Upgrade

- Annual Work Summary; Cabinet Gorge Fish Hatchery Spring Collection System Upgrade Evaluation (2019); due December 31, 2019

Appendix T 2019 Budget

Project	Carryover ¹	2019
Project Operations Package²		\$0
Unexpended funds		<u>\$978,387</u>
Total Available		<u>\$978,387</u>
Project Operations and Coordination	\$0	\$0
Priest River Coldwater Bypass Alternatives Assessment ³	\$65,519	\$0
Cabinet Gorge Fish Hatchery Spring Collection System Upgrade	\$147,421	\$15,000
Total	\$212,940	\$15,000

MC Approved Budget **\$227,940**

Unobligated Funds \$750,447

¹ This column denotes estimated carryover of unexpended, approved funds as January 1.

² A one-time \$1 million allocation made available beginning in 2018 and not subject to interest.

³ Appendix T expenditures must be for capital projects. If it is determined that these costs cannot be capitalized, the costs associated with this project will be transferred to Appendix A.