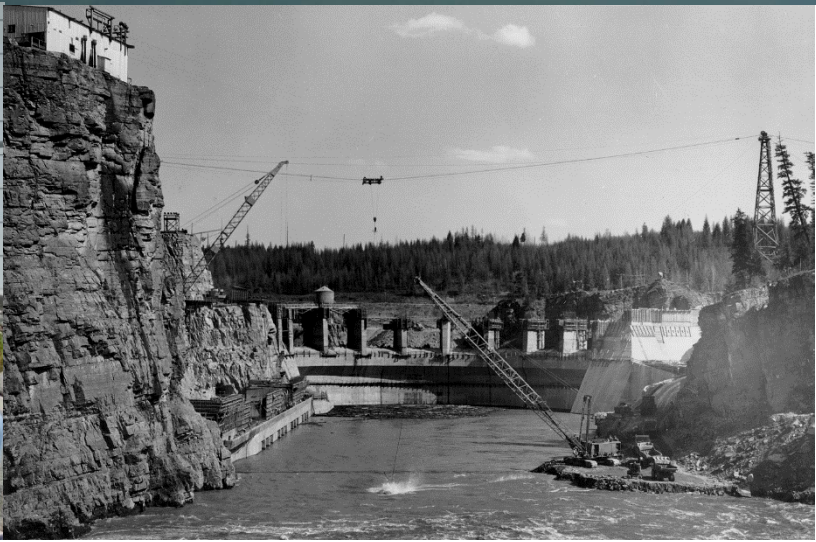




The Clark Fork Project

FERC Project No. 2058

2017 Implementation Plans
Water and Terrestrial Resource



2017 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 2017 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.

2017 Project Plans

Tributary Habitat Acquisition and Enhancement Fund

1. Habitat Restoration Scoping Allocation
2. Idaho Land Conservation Strategy
3. Habitat Restoration Maintenance and Monitoring Allocation
4. Grouse Creek Resurvey
5. Lightning Creek Large Woody Debris and Recruitment Project
6. Twin Creek Restoration Revegetation
7. Pack River Restoration Maintenance
8. Pack River Temperature Monitoring
9. Spring and Mosquito Creeks Pathogen Survey
10. Priority Bull Trout Habitat Acquisition and Conservation Allocation
11. Operation and Maintenance of Acquired Property Allocation
12. Idaho Field Station Planning

Fishery Resource Monitoring, Enhancement, and Management Fund

13. Fish Resource Monitoring, Enhancement, and Management Plan

Work Products

Habitat Restoration Scoping and Contingency Fund

- All work associated with this Project Plan will be documented in the 2017 Annual Work Summary. Final due December 1, 2017
- Designs for specific projects will be reported in the form of technical memoranda

Idaho Land Conservation Strategy

- Report titled "Land Conservation Strategy for Noxon Rapids and Cabinet Gorge Hydroelectric Projects" including supporting maps and other documents. Final due November 1, 2017

Habitat Restoration Maintenance and Monitoring Allocation

- All work associated with this Project Plan will be documented in the 2017 Annual Work Summary. Final due December 1, 2017

Grouse Creek Resurvey

- Project Completion Report; final due November 1, 2017

Lightning Creek Large Woody Debris and Recruitment Project

- An 80% design plan will be submitted to Avista for review; final due May 30, 2017
- A final stamped design will be submitted to Avista prior to construction
- Project Completion Report; final due December 1, 2017
- Photos; final due December 1, 2017

Twin Creek Restoration Revegetation

- Annual Work Summary; final due December 1, 2017

Pack River Restoration Maintenance

- Annual Work Summary; final due December 1, 2017
- Photos; final due December 1, 2017

Pack River Temperature Monitoring

- Raw data in excel spreadsheets; final due November 1, 2017
- Annual Project Update; final due November 1, 2017

Spring and Mosquito Creeks Pathogen Survey

- Project Completion Report; final due April 1, 2018

Priority Bull Trout Habitat Acquisition and Conservation Allocation

- Annual Work Summary; final due December 1, 2017

Operation and Maintenance of Acquired Property Allocation

- All work associated with this Project Plan will be documented in the 2017 Annual Work Summary. Final due December 1, 2017

Idaho Field Station Planning

- A technical memorandum or other appropriate work product will be produced including site plans and cost estimates, by location, as well as an alternatives analysis. Final due November 2017

Fish Resource Monitoring, Enhancement, and Management Plan

- Appendix A. Annual Project Update listing 2016 Tributary Monitoring Data (Objective 1), 2016 Bull Trout Redd Count Data (Objective 3); final due November 1, 2017
- Appendix A. Annual Project Update listing 2017 Tributary Monitoring Data (Objective 1), 2017 Bull Trout Redd Count Data (Objective 3); final due November 1, 2018
- Comprehensive report summarizing 2008-2017 Tributary Monitoring Data (Objective 2); final due November 1, 2019.

As approved by the Management Committee on 3/14/2017

- Project Update listing 2017 Lower Clark Fork River salmonid abundance estimates (Objective 4); final due November 1, 2018
- Other tasks completed using this fund will be described in the 2017 Annual Work Summary; final due December 1, 2017

Appendix A 2017 Budget

Project	Carryover¹	2017
Tributary Habitat Acquisition and Enhancement Fund (including GDP inflation rate)		550,092
Unexpended funds w/interest		856,897
MC Approved 3/14/17 transfer to Fish Resource Monitoring, Enhancement, and Management Fund		<u>-8,464</u>
Total Available		1,398,525
Habitat Restoration Scoping Allocation		15,000
Idaho Land Conservation Strategy		11,400
Habitat Restoration Maintenance and Monitoring Allocation		15,000
Grouse Creek Resurvey		30,000
Lightning Creek Large Woody Debris and Recruitment Project		17,800
Twin Creek Restoration Revegetation		23,500
Pack River Restoration Maintenance		7,000
Pack River Temperature Monitoring		0
Spring and Mosquito Creeks Pathogen Survey	16,131	0
Priority Bull Trout Habitat Acquisition and Conservation Allocation		60,000
Operation and Maintenance of Acquired Property Allocation		5,000
Idaho Enforcement (cost-share App G)		5,000
Idaho Field Station Planning		13,900
Total Request	16,131	203,600
Total 2017 Funding Request		219,731
Unobligated Funds		1,178,794
Fish Resource Monitoring, Enhancement, and Management Fund (including GDP inflation rate)		47,494
Unexpended funds w/interest		13,043
MC Approved 3/14/17 transfer from Tributary Habitat Acquisition and Enhancement Fund		<u>8,464</u>
Total Available		69,000
Fish Resource Monitoring, Enhancement, and Management Fund		69,000
Total Request		69,000
Total 2017 Funding Request		69,000
Unobligated Funds		0

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

2017 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, (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. This annual implementation plan includes projects specific to the Tributary Habitat Acquisition and Enhancement and Recreational Fish Resource Monitoring, Enhancement, and Management (including Sub-impoundment Fisheries).

2017 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. Rock and Graves Creek 2016–2020 Stream Gage Maintenance
7. Stream Gage Replacement and 2017–2021 Maintenance
8. Cabinet Ranger District Automated Snow Recording Site Operation and Maintenance
9. Crow Creek Bull Trout Investigation
10. Lolo National Forest Priority Native Salmonid Habitat Restoration Assessment and Planning
11. EF Blue Reach 2 Survey and Design – Phase I
12. Dry Creek Sediment Reduction, National Environmental Policy Act (NEPA) Compliance
13. Lower Clark Fork Watershed Group Project Coordination
14. Montana Land Conservation Strategy
15. Habitat Restoration Monitoring and Maintenance Allocation
16. Habitat Restoration, Property Acquisition, and Conservation Easement Allocation

Recreational Fishery Enhancement

17. Cabinet Gorge and Noxon Reservoir Fisheries Monitoring Plan
18. Managing Aquatic Invasive Plants on Noxon and Cabinet Gorge Reservoirs
19. Eurasian Watermilfoil Literature Review and Noxon Reservoir Existing Data Analysis
20. Mountain Lake Fisheries Monitoring Project
21. Thompson Falls Field Station Facility Feasibility Study
22. Thompson Falls State Park Improvement Project
23. Noxon Reservoir Boat Ramp Improvements

Work Products

Habitat Restoration Monitoring and Native Salmonid Abundance Monitoring Plan

- Comprehensive Project Report (2014–2016); final due November 30, 2017.
- Annual Project Update Report; (2017 data); final due May 30, 2018.

Miners Gulch Stream and Riparian Restoration Project

- Vermilion River Miners Gulch Restoration post runoff monitoring report (January 1, 2018).
- Annual fixed point photo-documentation.

Vermilion River Sims Reach Restoration Survey and Design

- Annual Work Summary (December 1, 2017).
- Project Completion Report; with incorporated survey results and design recommendations (July 1, 2018).
- Annual fixed point photo-documentation.

Mainstem Bull River Reforestation on Forest Service Lands and NEPA Process

- Project Completion Report; includes one year survival evaluation of planted stock (October 1, 2019).
- Annual fixed point photo-documentation.

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

- Project Completion Report (March 1, 2019).
- Annual fixed point photo-documentation.

Rock and Graves Creek 2016–2020 Stream Gage Maintenance

- Spreadsheet of temperature and discharge data in 30-minute intervals of both streams for each calendar year (2017–2020) by February 1 of each subsequent year.
- Annual Water Year Data Report – Rock and Graves creeks; January 1, 2018–2021.

Stream Gage Replacement and 2017–2021 Maintenance

- Spreadsheet of temperature and discharge data in 30-minute intervals of each stream for each calendar year (2017–2021) by February 1 of each subsequent year.
- Annual Water Year Data reports – Vermilion, East Fork Bull, and Bull rivers, and Trout Creek; due January 1, 2018–2022.

Cabinet Ranger District Automated Snow Recording Site Operation and Maintenance

- Annual Work Summary (December 1, 2017).
- 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 (January 1, 2020).

Crow Creek Bull Trout Investigation

- Project Completion Report (November 30, 2018).

Lolo National Forest Priority Native Salmonid Habitat Restoration Assessment and Planning

- Summary and design report for Graves Creek (December 1, 2017)
- NEPA analysis completed for Upper Prospect Drainage and Graves Creek (May 1, 2018)

EF Blue Reach 2 Survey and Design – Phase I

- Survey and preliminary design (completion date pending, although existing condition map with preliminary design by November 1, 2017).
- Annual Work Summary (December 1, 2017).

Dry Creek Sediment Reduction, National Environmental Policy Act (NEPA) Compliance

- Environmental Assessment Decision Memo (May 1, 2017).
- Annual Work Summary (December 1, 2017).

Lower Clark Fork Watershed Group Project Coordination

- Annual Work Summary (December 1, 2017)
- Updated and EPA-approved Watershed Restoration Plan for LCF tributaries (2018).

Land Conservation Strategy for Noxon Rapids and Cabinet Gorge Hydroelectric Projects

- Project Completion Report (November 1, 2017).

Habitat Restoration Monitoring and Maintenance Allocation

- Annual Work Summary (December 1, 2017).

Habitat Restoration, Property Acquisition, and Conservation Easement Allocation

- Annual Work Summary (December 1, 2017).
- Designs for specific projects in a Technical Memorandum.

Cabinet Gorge and Noxon Reservoir Fisheries Monitoring Plan

- Annual Project Update Report of 2016 activities (August 1, 2017).
- Annual Project Update Report of 2017 activities (August 1, 2018).

Managing Aquatic Invasive Plants on Noxon and Cabinet Gorge Reservoirs

- Quarterly Reports (Due the last day of each quarter).
- Annual Project Update reports (Due the first full week following the end of the year).
- Annual Work Summary to MFWP Appendix B Biologist (November 15, 2017).
- Comprehensive Project Report (December 1, 2018).

Eurasian Watermilfoil Literature Review and Noxon Reservoir Existing Data Analysis

- Project Completion Report: Overlap of Fall Gillnetting Sites and Eurasian Watermilfoil Plots in Noxon Reservoir 2007-2016; final due July 1, 2017.
- Project Completion Report: The Effect of Herbicide Treatment of Eurasian Watermilfoil on Gillnet Catch in Noxon, Reservoir; final due December 1, 2018 (if sufficient data).
- Project Completion Report: Review: Eurasian Watermilfoil as Fish habitat; final due February 1, 2018

Mountain Lake Fisheries Monitoring Project

- Comprehensive Project Report; (November 30, 2020).
- Annual Work Summary (December 1, 2017).

Thompson Falls Field Station Facility Feasibility Study

- Annual Work Summary (December 1, 2017).

Thompson Falls State Park Improvement Project

- Annual Work Summary (December 1, 2017).

Noxon Reservoir Boat Ramp Improvements

- Annual Work Summary (December 1, 2017).

Appendix B 2017 Budget

Project	Carryover¹	2017
Tributary Habitat Acquisition and Enhancement Fund (Including GDP inflation rate)		391,941
Unexpended funds w/ interest		1,386,747
Total Available		1,778,688
Habitat Restoration Monitoring and Native Salmonid Abundance Monitoring Plan		83,000
Miners Gulch Stream and Riparian Restoration Project	9,410	0
Vermilion River Sims Reach Restoration Survey and Design		15,500
Mainstem Bull River Revegetation on Forest Service Lands and NEPA Process		0
Match Funds for Outreach in Bull River Revegetation (Section 319 Project)	11,200	0
Rock & Graves Creek 2016-2020 Stream Gage Maintenance	19,045	0
Stream Gage Replacement and 2017-2021 Maintenance		9,100
Cabinet Ranger District Automated Snow Recording Site Operation and Maintenance		0
Crow Creek Bull Trout Investigation	18,500	0
Lolo National Forest Priority Native Salmonid Habitat Restoratin Assesment and Planning		31,000
EF Blue Reach 2 Survey and Design - Phase I	2,200	0
Dry Creek Sediment Reduction, National Environmental Policy Act (NEPA) Compliance	11,300	0
Lower Clark Fork Watershed Group Project Coordination		16,500
Montana Land Conservation Stratetgy		11,400
Habitat Restoration Monitoring and Maintenance Allocation		12,750
Habitat Restoration, Propert Acquisition, and Conservation Easement Allocation		60,000
Total Request	71,655	239,250
Total 2017 Funding Request		310,905
		Unobligated Funds 1,467,783

Recreational Fishery Enhancement Fund (Including GDP inflation rate)		261,292
Unexpended funds w/ interest		1,210,838
Total Available		1,472,130
Cabinet Gorge and Noxon Reservoir Fisheries Monitoring Plan		55,000
Thompson River Technical Assistance		6,000
Managing Aquatic Invasive Plants in Noxon and Cabinet Gorge Reservoirs		97,000
Eurasian Watermilfoil Literature Review and Noxon Reservoir Existing Data Analysis		11,340
Mountain Lakes Fisheries Monitoring Project	54,750	0
Thompson Falls Field Station Facility Feasibility Study	15,000	0
Thompson Falls State Park Improvement Project	155,835	0
Noxon Reservoir Boat Ramp Improvements		55,000
Total Request	225,585	224,340
Total 2017 Funding Request		449,925
		Unobligated Funds 1,022,205

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

2017 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 2017 to achieve the goals of the Fish Passage/Native Salmonid Restoration Program. 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.

2017 Project Plans

1. Upstream Fish Passage Program
2. Tributary Trapping and Downstream Juvenile Bull Trout Transport Program
3. East Fork Bull River Bedload Sediment Sampling 2016-2020
4. Non-Native Suppression Project in the East Fork Bull River
5. Fish Abundance Monitoring
6. Fish Capture Facilities Operation, Development and Testing

Work Products

Upstream Fish Passage Program

- Annual Project Update; Upstream Fish Passage Program – Bull Trout (2016 data); final due October 1, 2017
- Annual Project Update; Upstream Fish Passage Program – Bull Trout (2017 data); final due October 1, 2018
- Annual Project Update; Abernathy Fish Technology Center Genetics Report (2016 data); final due June 1, 2017
- Annual Project Update; Abernathy Fish Technology Center Genetics Report (2017 data);

final due June 1, 2018

- Annual Project Update; Idaho Fish Health Center Pathogen Report (2016 data); final due January 31, 2018

Tributary Trapping and Downstream Juvenile Bull Trout Transport Program

- Annual Project Update; Downstream Program (2016 data); final due November 1, 2017
- Annual Project Update; Downstream Program (2017 data); final due November 1, 2018
- Annual Project Update; Graves Creek M&E Plan (2017 data); final due September 1, 2018

Non-native Suppression Project in the East Fork Bull River

- Annual Project Update; Non-Native Fish Suppression (2016 data); final due June 1, 2017
- Annual Project Update; Non-Native Fish Suppression (2017 data); final due June 1, 2018
- Project Completion Report; Non-Native Fish Suppression Project in the East Fork Bull River; (2007 – 2018 data) final due October 1, 2019

Fish Abundance Monitoring

- Annual Project Update; Fish Abundance (2016 data); final due July 1, 2017
- Annual Project Update; Redd Survey (2016 data); final due April 1, 2017
- Annual Project Update; Fish Abundance (2017 data); final due July 1, 2018
- Annual Project Update; Redd Survey (2017 data); final due April 1, 2018

Fish Capture Facilities Operation, Development and Testing

- Annual Work Summary; Fish Capture Facilities (2017 data); final due December 1, 2017

Appendix C 2017 Budget

Project	Carryover¹	2017
Annual Operations Fund (including GDP Inflation rate)		757,750
Unexpended funds w/ interest		1,761,792
Total Available		2,519,542
Upstream Fish Passage Program		143,500
Rapid Response Genetic Analysis (Abermathy Lab Contract R-20413)		65,000
Tributary Trapping and Downstream Juvenile Bull Trout Transport Program		404,651
East Fork Bull River PIT array	40,000	59,500
Maintenance of Vermilion and EFBR Stream Flow Gages (USFS Contract - 5-years)		9,900
East Fork Bull River Bedload Sediment Sampling 2016-2020		0
Non-Native Fish Suppression Project in the East Fork Bull River		36,800
Fish Abundance Monitoring		165,500
Total Request	40,000	884,851
Total 2017 Funding Request		924,851
Unobligated Funds		1,594,691

Facilities Fund (including GDP inflation rate)		550,094
Unexpended funds w/interest		0
Total Available		550,094
Fish Capturing Facilities Operation, Development and Testing		
Cabinet Gorge Fishway Design (MWH R-36113-1 & AECOM R-35870)		500,000
Avista Engineering and Project Oversight		320,000
Cabinet Gorge Fishway Permitting and ESA Consultation		100,000
Total Request	0	920,000
Total 2017 Funding Request		920,000
Unobligated Funds		-369,906

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

2017 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 Corporation, (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 Corporation (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 an enhanced law enforcement effort focused on protecting LPO Bull Trout. It was also agreed that a plan should be developed for continuing this effort on a long-term basis, and it should include a specific public education and outreach component in addition to the enhanced law enforcement effort. 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, Panhandle Chapter Trout Unlimited, 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 March 2015, the MC approved revised version of the Implementation Plan for the Bull Trout Protection and Public Education Project.

2017 Project Plans

1. Bull Trout Protection and Public Education Project, Idaho Department of Fish and Game
2. Bull Trout Protection and Public Education Project, Panhandle Chapter Trout Unlimited
3. Bull Trout Protection and Public Education Project, Montana Fish, Wildlife and Parks
4. Lake Pend Oreille Boater's Guide
5. Trestle Creek Education Center Planning

Work Products

Bull Trout Protection and Public Education Project, Idaho Department of Fish and Game

- Annual Work Summary Report to Avista (December 1, 2017).
- River Enforcement Action Plan update (February 1, 2018).
- LPO Enforcement Action Plan update (February 1, 2018).

Bull Trout Protection and Public Education Project, Panhandle Chapter Trout Unlimited

- Annual Work Summary (December 1, 2017).

Bull Trout Protection and Public Education Project, Montana Fish, Wildlife and Parks

- Annual Work Summary (December 1, 2017).
- Analysis of angler interview data (2017) to monitor the progress of continuing educational efforts (included in Annual Work Summary).

Lake Pend Oreille Boater's Guide

- Annual Work Summary (December 1, 2017).

Trestle Creek Education Center Planning

- Technical memorandum or other appropriate work product listing the development goal and associated development options, including a site plan and cost estimates (August, 2017).
- A Cultural Resource Survey will be produced prior to finalization of the site plan to ensure compatibility with existing cultural requirements.

Appendix D 2017 Budget

Project	Carryover ¹	2017
Bull Trout Protection & Public Education (Includes GDP inflation rate)		169,613
Unexpended funds w/ interest		<u>107,693</u>
Total Available		277,306
Bull Trout Protection & Public Education		
Idaho Department of Fish and Game		131,166
Panhandle Chapter Trout Unlimited		33,350
Montana Fish, Wildlife and Parks with 66% (no cost share) of new patrol boat		55,316
Lake Pend Oreille Boater's Guide		1,500
Trestle Creek Education Center Planning		13,500
Total Request	0	234,832
Total 2017 Funding Request		234,832
Unobligated Funds		42,474

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

2017 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 Corporation, (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 (WSCs) 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 Rapids Reservoir). The Elk Creek WSC had already implemented a number of stream assessment, protection and enhancement measures. The degree of local stakeholder interest and success of this WSC was a catalyst for developing and establishing this Watershed Council Program. The Prospect Creek WSC began on-the-ground restoration in 1999, in part through funds from the Montana Tributary Habitat Acquisition and Recreational Fishery Enhancement Program (CFSA Appendix B).

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 WSCs and this program, designing a decision making process for reviewing watershed council related funding needs and requests and new WSC formation. Since 1999, Rock Creek, Whitepine Creek, Trout Creek, Pilgrim Creek, Little Beaver Creek, and the Bull River WSCs 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 WSC 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 WSC.

The Lower Clark Fork Watershed Group (LCFWG, an umbrella and organizational group for the Montana WSCs) 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 WSCs, helps coordinate Avista's restoration efforts with other state and/or federal activities, as well as seeking non-Clark Fork Settlement Agreement 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 WSC and to support existing WSC.

2017 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

- Annual Work Summary (December 1, 2017)
- Financial Report (December 1, 2017)
- Semi-Annual Newsletters (Spring and Fall 2017)

Lower Clark Fork Watershed Council Projects

- Annual Work Summary (December 1, 2017)

Appendix E 2017 Budget

Project	Carryover¹	2017
Watershed Councils Fund (Including GDP inflation rate)		13,569
Unexpended funds w/interest		9,455
<i>Total Available</i>		23,025
Pack River Watershed Council, Bonner Soil and Water Conservation District		4,000
Lower Clark Fork Watershed Council Projects		11,000
Total Request	0	15,000
Total 2017 Funding Request		15,000
Unobligated Funds		8,025

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

2017 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.

2017 Project Plans

1. Clark Fork River water Quality Monitoring Program

Work Products

- Annual Project Update: 2016 monitoring report to be prepared by CFC; final due July 30, 2017
- Annual Work Summary; final due December 1, 2017
- Comprehensive Project Report: 2013–2017 5-year Trends Analysis; final due August 2018

Appendix F1 2017 Budget

Project	Carryover¹	2017
Clark Fork River Water Quality Monitoring Program (Including GDP Inflation Rate)		20,355
2018 Funding Obligation (2013-2017 5-year Trends Analysis)		10,000
Unexpended funds w/ interest		0
Total Available		30,355
Clark Fork River Water Quality Monitoring Program		30,355
Total Request	0	30,355
Total 2017 Funding Request		30,355
Unbudgeted Funds ²		5,576

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

² This amount represents the difference between the funding obligation and the actual cost to implement the PM&E measure. Avista will be working with the Clark Fork River Water Quality Monitoring Committee to determine the feasibility of bringing costs down to the annual obligation or identifying alternative funding sources.

2017 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

Introduction and 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 2017, 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.

2017 Project Plans

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

Work Products

- Annual Sampling and Analysis and Quality Assurance Project Plan: Monitoring of Noxon Reservoir Stratification and Mobilization of Sediment Nutrients/Metals; due June 1, 2017
- 2017 Annual Work Summary; due December 1, 2017
- Comprehensive Project Report (if stratification sampling occurs); due May 1, 2018

Appendix F2 2017 Budget

Project	Carryover¹	2017
Monitoring Noxon Reservoir Stratification		60,000
Unexpended fund w/ interest		0
Total Available		60,000
Cost of the inflow and outflow monitoring is borne by Avista with no affect on the funding of this program.		0
Monitoring of Noxon Reservoir Stratification and Mobilization of Sediment Nutrients/Metals		60,000
Total Request	0	60,000
Total 2017 Funding Request		60,000
Unobligated Funds		0

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

2017 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 pending for 2017 (formerly June 2016).

2017 Project Plans

None.

Work Products

- Final report on the 2015 Noxon and Cabinet Gorge Reservoir Mercury Concentration Study; due May 5, 2017.

Appendix F3 2017 Budget

Project	Carryover¹	2017
Aquatic Organism Tissue Analysis		0
		0
Total Available		0
Total Request	0	0
Total 2017 Funding Request		0
Unobligated Funds		0

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

2017 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

Introduction and 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) that will minimize or eliminate the impact of project related maintenance, construction and emergency activities to 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.

2017 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 2016 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.

Anticipated Reports and Work Products

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

Budget

- Should the Plan need to be implemented in 2017, the total actual costs associated with monitoring and Best Management Practices implementation will be borne by Avista.

Appendix F4 2016 Budget

Project	Carryover¹	2016
Water Quality Protection and Monitoring Plan		0
		0
<i>Total Available</i>		0
Costs associated with monitoring and best management practices implementation will be borne by Avista with no affect on funding of this program.		0
Total Request	0	0
Total 2016 Funding Request		0
Unobligated Funds		0

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

2017 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

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.

2017 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, and amended in 2016 to include use of spillways #4 and #5. These spillway operations will be amended again in 2017 to include use of spillways #1 and #3, for TDG mitigation. 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

2. Total Dissolved Gas Monitoring

TDG Mitigation and Monitoring Program

3. Clark Fork River Westslope Cutthroat Trout Experimental Transport Program
4. Lake Pend Oreille Angler Incentive Program
5. Lake Pend Oreille Trap and Gill Net Program
6. Lake Pend Oreille Bull Trout Survival Study
7. LPO/Lower Clark Fork Strontium Isotope Baseline Collection
8. Box Canyon Reservoir Northern Pike Suppression
9. Water Quality Trophic Monitoring in Lake Pend Oreille
10. Demography of Adfluvial Bull Trout in Lake Pend Oreille

GSCP Alternative:

11. Gas Supersaturation Control Program Total Dissolved Gas Abatement

Work Products

Operations

- Annual Work Summary; final due December 1, 2017

Total Dissolved Gas Monitoring

- Annual Work Summary; final due December 1, 2017
- Annual Project Update; final due March 1, 2018

Clark Fork River Westslope Cutthroat Trout Experimental Transport Program

- Annual Project Update; Westslope Cutthroat Trout Experimental Transport Program (2016 data); final due November 1, 2017
- Annual Project Update; Westslope Cutthroat Trout Experimental Transport Program (2017 data); final due November 1, 2018

Lake Pend Oreille Angler Incentive Program

- Annual Work Summary; final due December 1, 2017
- Annual Report Summarizing 2017 results; final due March 1, 2018
- IDFG Comprehensive Report Summarizing data through 2016; final due December 31, 2018
- IDFG Comprehensive Report Summarizing data through 2018; final due December 31, 2020

Lake Pend Oreille Trap and Gill Net Program

- Annual Work Summary; final due December 1, 2017
- Annual Report Summarizing 2017 results; final due March 1, 2018
- IDFG Comprehensive Report summarizing data through 2016; final due December 31, 2018
- IDFG Comprehensive Report summarizing data through 2018; final due December 31, 2020

Lake Pend Oreille Bull Trout Survival Study

- Appendix F-5. Annual Project Update listing 2016 Survival Study data; final due November 1, 2017
- Appendix F-5. Annual Project Update listing 2017 Survival Study data; final due November 1, 2018

- Project Completion Report; final due November 1, 2020

LPO/Lower Clark Fork Strontium Isotope Baseline Collection

- Water sample results; final due June 1, 2017
- Annual Work Summary; final due December 1, 2017
- A Project Completion Report; final due November 1, 2018

Box Canyon Reservoir Northern Pike Suppression

- Annual Project Update; final due November 30, 2017. This work product will be provided annually with the exception of the years covered by a Comprehensive Project Report
- Comprehensive Project Report; final due November 30, 2018
- Annual Work Summary; final due November 30, 2017

Water Quality Trophic Monitoring in Lake Pend Oreille

- Annual Project Update; final due December 1, 2017

Demography of Adfluvial Bull Trout in Lake Pend Oreille

- Discussion of work accomplished to date in the Appendix F5 Annual Work Summary; due December 1, 2017.
- Estimates of CMR-derived post release survival and abundance for LPO Bull Trout (to be provided in Appendix F5 Annual Work Summary December 2018).
- Code (in language for Program R or similar) for integrated population model (December 2018).
- Project Completion Report outlining the findings for Objectives 1-3 (May 2019).
- Publication of model and results in peer reviewed literature (submit December 2019).

Gas Supersaturation Control Program Total Dissolved Gas Abatement

- 2017 Annual Work Summary; final due December 1, 2017

Appendix F5 2017 Budget

Project	Carryover¹	2017
TDG Monitoring Fund		27,500
<i>Total Available</i>		27,500
Total Dissolved Gas Monitoring		27,500
Total Request	0	27,500
Total 2017 Funding Request		27,500
Unobligated Funds		0

Mitigation Fund (Including GDP Inflation Rate)		821,402
Unexpended funds w/ interest		1,354,140
<i>Total Available</i>		2,175,543
Clark Fork River Westslope Cutthroat Trout Experimental Transport Program		140,200
Lake Pend Oreille Angler Incentive Program		146,500
Lake Pend Oreille Trap and Gill Net Program		328,000
Lake Pend Oreille Bull Trout Survival Study		12,500
LPO/Lower Clark Fork Strontium Isotope Baseline Collection	31,000	0
Box Canyon Reservoir Northern Pike Suppression		30,046
Water Quality Trophic Monitoring in Lake Pend Oreille		9,062
Demography of Adfluvial Bull Trout in Lake Pend Oreille		26,000
Total Request	31,000	692,308
Total 2017 Funding Request		723,308
Unobligated Funds		1,452,235

GSCP Alternative		2,350,000
<i>Total Available</i>		2,350,000
Gas Supersaturation Control Program Total Dissolved Gas Abatement		2,350,000
Total Request	0	2,350,000
Total 2017 Funding Request		2,350,000
Unobligated Funds		0

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

2017 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 Clark Fork Recreation/Land Use Specialist, (406) 847-1283,

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Nate Hall, Avista Clark Fork Terrestrial Program Leader, (406) 847-1281,

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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 2017 work efforts are a continuation past efforts and remain focused on implementing the three distinct components of the LUMP:

2017 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 2017 Annual Work Summary. Due Date: December 1, 2017.
- Develop annual pesticide and herbicide report. Due Date: December 1, 2017.
- 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 2017 Annual Work Summary. Due Date: December 1, 2017.

Enforcement

- All work associated with this Project Plan will be documented in the 2017 Annual Work Summary. Due Date: December 1, 2017.
- 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, 2017.
- Annual report from Idaho Fish and Game will be provided per the MOU agreement. Due Date: December 1, 2017.

Appendix G 2017 Budget

Project	Carryover¹	2017
Land Use Management Plan (Estimate)²		203,500
Unexpended funds w/ interest		
Total Available		203,500
Protection and Maintenance		75,000
EWM Control		33,000
EWM Coordinator		17,500
Education		3,000
Monitoring		10,000
Enforcement		40,000
Montana Enforcement ^(MOU with MFWP)		20,000
Idaho Enforcement ^(MOU with IDFG) (cost-share App A)		5,000
Total Request	0	203,500
Total 2017 Funding Request		203,500
Unobligated Funds		0

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

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

Please note that this budget is an estimated amount. The amount needed may vary greatly by year depending upon legal/survey/support staff time needed to address issues related to the management of Avista owned Project Lands.

2017 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 Clark Fork Recreation/Land Use Specialist, (406) 847-1283,
Jason.Pignanelli@avistacorp.com

Nate Hall, Avista Clark Fork Terrestrial Program Leader, (406) 847-1281,
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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 2017 work efforts are a continuation past efforts and remain focused on implementing the five distinct components of the RRMP:

2017 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 2017 Annual Work Summary. Due Date: December 1, 2017.

Facility Development

- Unless a specific document is created for a task, all work associated with this Project Plan will be documented in the 2017 Annual Work Summary. Due Date: December 1, 2017.

Monitoring

- Unless a specific document is created for a task, all work associated with this Project Plan will be documented in the 2017 Annual Work Summary. Due Date: December 1, 2017.
- Continue working with the recreation subgroup to update the RRMP. The draft document will be available to the TRTAC in January 2017, and the MC in March 2017.
- Report summarizing data from the 20 automated traffic counters to measure use at various developed and dispersed recreation sites and trails. January 2018
- Summary maps showing dispersed recreation areas along the projects and permitted dock locations (showing dock densities per 0.5 mile segments of shoreline). January 2018

Operation and Maintenance

- Unless a specific document is created for a task, all work associated with this Project Plan will be documented in the 2017 Annual Work Summary. Due Date: December 1, 2017.

Interpretation and Education

- Unless a specific document is created for a task, all work associated with this Project Plan will be documented in the 2017 Annual Work Summary. Due Date: December 1, 2017.

Appendix H 2017 Budget

Project	Carryover¹	2017
Management (Estimate)³		<u>187,000</u>
Total Available		187,000
RRMP Administration and Resource Integration		0
RRMP Monitoring		9,000
Operation & Maintenance of recreation facilities		
Avista Sites		126,000
USFS Sites ²		31,500
MFWP - Flat Iron and Thompson Falls		15,000
Interpretation & Education		5,500
Total Request	0	187,000
Total 2017 Funding Request		187,000
Unobligated Funds		0

Facilities Fund (including GDP inflation rate)²		209,789
Unexpended funds w/ interest		<u>390,568</u>
Total Available		600,357
RRMP Recreation Facility Development		471,800
Total Request	0	471,800
Total 2017 Funding Request		471,800
Unobligated Funds		128,557

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

² Fund refers to annual available funds, adjusted by percentage of change of the Gross Domestic Product-Implicit Price Deflator.

³ Estimated costs are projections made now however; Avista will pay the actual costs as approved by the Management Committee.

2017 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 Clark Fork Recreation/Land Use Specialist, (406) 847-1283,

Jason.Pignanelli@avistacorp.com

Nate Hall, Avista Clark Fork Terrestrial Program Leader, (406) 847-1281,

nate.hall@avistacorp.com

Introduction and 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.

2017 Project Plans

- Monitor recreation, land management, erosion, and facility construction programs to ensure AMP guidelines are considered.
- Continue to investigate measures to restore views, as appropriate, identified in the 2013 re-inventory of 41 key viewpoints. Sites will be revisited again in 2018 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 2017 Annual Work Summary. Due Date: December 1, 2017.

Budget

\$7,000 available for vegetation management as opportunities arise.

Appendix I 2017 Budget

Project	Carryover¹	2017
Aesthetics Management Plan (Estimate)²		<u>7,000</u>
<i>Total Available</i>		7,000
Vegetation management at various viewpoints		7,000
Total Request	0	7,000
Total 2017 Funding Request		7,000
Unobligated Funds		0

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

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

2017 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 Clark Fork Terrestrial Program Leader, (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.

2017 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 on 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 2017 Annual Work Summary. Due Date: December 1, 2017.

Budget

\$5,000 available for labor and materials.

Appendix J 2017 Budget

Project	Carryover¹	2017
Wildlife, Botanical & Wetland Management Plan (Estimate)²		5,000
		0
Total Available		5,000
Update Habitat Protection Spreadsheet and provide updates on bald eagle, Peregrine falcon, and common loon nesting activity.		5,000
Total Request	0	5,000
Total 2017 Funding Request		5,000
Unobligated Funds		0

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

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

2017 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 Clark Fork Terrestrial Program Leader, (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.

2017 Project Plans

- 1) Operation and Maintenance of Acquired Property and Contingency Fund
- 2) Habitat Acquisition and Conservation and Contingency Fund
- 3) Wood Duck Re-vegetation and Maintenance
- 4) Pack River Conservation Easement

Work Products

Operation and Maintenance of Acquired Property and Contingency Fund

- All work associated with this Project Plan will be documented in the 2017 Annual Work Summary. Due Date: December 1, 2017.

Habitat Acquisition and Conservation and Contingency Fund

- All work associated with this Project Plan will be documented in the 2017 Annual Work Summary. Due Date: December 1, 2017.

Wood Duck Re-vegetation and Maintenance

- Annual project update report will be provided. Due Date: December 1, 2017.

Pack River Conservation Easement

- Complete the purchase of conservation easement by July 1, 2017.

Appendix K 2017 Budget

Project	Carryover¹	2017
Wildlife Habitat Acquisition Fund (including GDP Inflation rate)		273,285
Unexpended funds w/ interest		<u>661,333</u>
Total Available		934,618
Operation and Maintenance of Acquired Property and Contingency Fund		103,000
Habitat Acquisition and Conservation and Contingency Fund		633,918
Wood Duck Re-vegetation Maintenance		7,700
Acquisition of conservation easement on 354.9 acres along Pack River		190,000
Total Request	0	934,618
Total 2017 Funding Request		934,618
Unobligated Funds		0

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

² Fund refers to annual available funds, adjusted by percentage of change of the Gross Domestic Product-Implicit Price Deflator.

2017 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 Clark Fork Terrestrial Program Leader, (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 2016 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 and 2016 were unseasonably hot and dry, cottonwood generation was good within the enclosure. Regeneration occurred from exposed roots, cutoff stumps and seed germination. Efforts in 2017 will include continued monitoring of the enclosure and conduct any needed maintenance to the fence that is needed.

2017 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 two more enclosures within this stand.

Work Products

- All work associated with this Project Plan will be documented in the 2017 Annual Work Summary. Due Date: December 1, 2017.

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.

Budget

\$10,000 for monitoring and construction of two new enclosures

Appendix L 2017 Budget

Project	Carryover¹	2017
Black Cottonwood Habitat Protection & Enhancement Fund (including GDP Inflation rate)²		6,665
Unexpended funds w/ interest		<u>62,100</u>
Total Available		68,765
Monitor Hereford and Noxon Slough stands and construction of two new enclosures		10,000
		0
Total Request		10,000
Total 2017 Funding Request		10,000
Unobligated Funds		58,765

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

² Fund refers to annual available funds, adjusted by percentage of change of the Gross Domestic Product-Implicit Price Deflator.

2017 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 Clark Fork Terrestrial Program Leader, (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.

Avista, Montana Fish, Wildlife and Parks (MFWP) and Ducks Unlimited (DU) developed an engineering plan to enhance a wetland complex on the Bull River Wildlife Management Area (WMA) in 2014. Upon review of the proposed project and associated data, the proposed project was dropped due to concerns of potential impacts to the springs that provide an important cold water source to the mainstem Bull River.

2017 Project Plans

- Investigate two new potential wetland protection and enhancement projects. Once specific plans for either of these options are developed, they will be forwarded onto the Management Committee for review and approval.
 - The purchase and protection of 18 acres of shoreline habitat adjacent to the 2016 Twin Creek acquisition. Approximately 50% of this parcel is wetland habitat.
 - 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 2017 Annual Work Summary. Due Date: December 1, 2017.
- If it appears either 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 2017, therefore no cultural resource surveys will be required.

Budget

\$10,000 for investigation and proposal development (if appropriate) of two new potential wetland projects

Appendix M 2017 Budget

Project	Carryover¹	2017
Wetlands Protection & Enhancement Program (Budgeted)²		
Unexpended funds w/ interest		<u>\$371,868</u>
Total Available		<u>\$371,868</u>
investigate two new potential wetland protection and enhancement projects.		10,000
Total Request	0	10,000
Total 2017 Funding Request		10,000
Unobligated Funds		361,868

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

² Budget costs are negotiated appropriate Avista contributions however; Avista pays actual costs as approved by the Management Committee in an amount not to exceed the agreed budget.

2017 ANNUAL IMPLEMENTATION PLAN SUMMARY– APPENDIX P

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

Title

Timber Habitat Protection and Enhancement

Implementation Staff Lead

Nate Hall, Avista Clark Fork Terrestrial Program Leader, (406) 847-1281,
nate.hall@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.

2017 Project Plans

- 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.
- 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.
- Continue to monitor and enforce the road closure to Stevens Creek Point (closure was instituted in 2001).
- Continue to prohibit motorized use of Finley Flats Point.
- 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.
- Continue weekly patrols of the forested lands surrounding the State Shop property continue to reduce the amount of disturbance and litter in this area.
- 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 2017 Annual Work Summary. Due Date: December 1, 2017.

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 2017, it will be evaluated by CRMG to determine cultural resource survey needs.

Budget

\$5,000 for monitoring and ongoing management activities.

\$166,600 from past timber receipts is available for timber improvement projects as they arise.

Appendix P 2017 Budget

Project	Carryover¹	2017
Annual Funding (Periodic)²		5,000
		0
Total Available		5,000
Monitoring and ongoing management activities		5,000
Total Request	0	5,000
Total 2017 Funding Request		5,000
Unobligated Funds		0

Improvement Fund (Periodic)² (available revenue)		<u>166,600</u>
Total Available		166,600
Plan Implementation		
Total Request	0	0
Total 2017 Funding Request		0
Unobligated Funds		166,600

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

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

2017 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 Clark Fork Terrestrial Program Leader, (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.

2017 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 2017 Annual Work Summary. Due Date: December 1, 2017.

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.

Budget

Costs covered through implementation of Appendix G.

Appendix Q 2017 Budget

Project	Carryover¹	2017
Reservoir Island Protection (Periodic)²		0
		0
<i>Total Available</i>		0
Costs for this measure are covered in the Implementation of the Land Use Management Plan (App G)		0
Total Request	0	0
Total 2017 Funding Request		0
Unobligated Funds		0

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

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

2017 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

René Wiley, Avista, (509) 495-2919, rene.wiley@avistacorp.com

Background

The Heritage Resource Program (HRP) 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). The HRMP was developed in 2000 in accordance with the HRP, Clark Fork Settlement Agreement (CFSA), and Programmatic Agreement, by Avista and the CRMG 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 measures associated with the Clark Fork Project with the Coeur d'Alene, Kootenai, Confederated Salish and Kootenai, and Kalispel Tribes, Idaho and Montana State Historic Preservation Offices, and United States Forest Service, which collectively make up the CRMG. Implementation of the Plan also ensures compliance with Section 106 of the National Historic Preservation Act.

2017 Project Plans

- Clark Fork Heritage Resource Management Program

Work Products

- Annual Work Summary*; final due December 1, 2017
** Note: 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.*

Budget

\$112,500

Appendix R 2017 Budget

Project	Carryover¹	2017
Clark Fork Heritage Resource Program (Estimate)²		
	\$125,000	<u>112,500</u>
Total Available		237,500
Meetings		7,500
Monitoring <small>(CSKT R - 13240)</small>	125,000	80,000
Cultural Interpretation and Education Plan		12,500
Honey Flats Botanical Assessment		12,500
Total Request	125,000	112,500
Total 2017 Funding Request		237,500
Unobligated Funds		0

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

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

2017 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 Clark Fork Terrestrial Program Leader, (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.

2017 Project Plans

- Address erosion concerns identified by the CRMG.
- Address a site where erosion threatens to go past Avista ownership on Cabinet Gorge Reservoir (Laundry site).
- It was determined in 2014 that the erosion control work adjacent to the Finley Flats boat ramp parking lot would be best addressed as part of a larger potential redesign of the entire parking area. Survey work has been completed and implementation will occur in 2017.
- Continue to evaluate and provide technical assistance for an erosion control project being undertaken by an adjacent landowner on Noxon Reservoir (Vermilion Point Area).
- Utilize a geotechnical contractor to assist with evaluating erosion control proposals received by Avista.

Work Products

- Due to the confidential nature of cultural sites, this work will not be reported on as part of the public reporting process.
- Construction of erosion control measures (utilizing root wads along the toe of the slope and willow plantings into the exposed bank) will occur at the Laundry site as soon as conditions allow. Completion by July 1, 2017.
- Utilizing survey completed in 2016, construction will be completed in 2017. If conditions allow, work will occur in the early spring prior to the recreation season, or if not then post recreation season in late September.
- 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, 2017.

- All work associated with this Project Plan will be documented in the 2017 Annual Work Summary. Due Date: December 1, 2017.

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 performed by the Cultural Resource Management Group for each project as they are identified.

Budget

\$50,000	Address CRMG erosion concerns
\$ 4,000	Laundry Site erosion control project
\$ 0	Finley Flats erosion control/parking area work will be covered by Appendix H
\$ 8,000	Geotech support and working with adjacent landowner on Noxon reservoir

Appendix S 2017 Budget

Project	Carryover¹	2017
Erosion Fund and Shoreline Stabilization Guidelines (Fund w/Cap)²		51,087
Unexpended funds w/ interest		140,526
Total Available		191,613
Geotechnical Support		8,000
Address erosion on the Laundry Site	4,000	
Erosion control at sites identified by Cultural Resource Management Group		50,000
Total Request	4,000	58,000
Total 2017 Funding Request		62,000
		Unobligated Funds 129,613

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

² Funds are dollars made available annually.

2017 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 consists of a number of measures intended to mitigate for the impacts of continuing to operate the projects in a peaking mode through the protection and enhancement of native salmonids and by providing for improved recreational fishery opportunities. Implementations of most of the measures included in this package are incorporated into other annual implementation plans (e.g., the Montana and Idaho tributary enhancement programs, the Bull Trout Protection and Public Education Project, and the Watershed Council Program). Evaluating the benefits of the increased minimum flow (5,000 cfs) below the Cabinet Gorge Project, and enhancing the flow and monitoring the benefits in the lower Clark Fork River side channel (known as Foster Bar) have been incorporated into and reported on in the Idaho Tributary Enhancement Program.

Therefore, this PM&E now only encompasses the maintenance of the minimum flow below the Cabinet Gorge Project to an instantaneous minimum flow of 5,000 cfs, maintaining the established limits for water level fluctuations in the project reservoirs, and the requirement to coordinate operations with the operators of the Albeni Falls Project (located on the Pend Oreille River, outlet of Lake Pend Oreille).

As per Terms and Conditions 4b of the 1999 Biological Opinion for the Clark Fork Project, the USFWS is to approve the recommendation to return to the original 3,000 cfs minimum flow. Pending CFSA Amendment approval, the proposed feasibility analysis of future mitigation concepts (see below) will proceed forward. In the event that the USFWS conditions their approval of the new minimum flow, any future additional activities, in addition to the feasibility analysis, will be referred to the Management Committee for their review and approval.

Implementation of the Project Operations Package 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.

2017 Project Plans

- Maintain operating procedures for the Cabinet Gorge Project that will ensure an instantaneous minimum discharge (i.e., minimum flow) at the dam or powerhouse of 5,000 cfs. Assure that the specified minimum flow was maintained, either through discharge or operational data available at the dam and/or utilizing the USGS Clark Fork River below Cabinet Gorge Dam gaging station data (located approximately ¼ mile downstream of dam).

In the event that these operating procedures are interrupted, implement the Water Quality Protection and Monitoring Plan as identified in CFSA Appendix F4.

- Maintain standard operating procedures for the Cabinet Gorge and Noxon Rapids projects that will ensure that the reservoir (i.e., forebay) water level fluctuation limitations, as outlined in the General Operating Limits tables in Settlement Agreement Appendix T, are maintained. Maintain appropriate documentation of forebay water levels utilizing data available at the dam/powerhouse control room. In the event that these operating procedures are interrupted, implement the Water Quality Protection and Monitoring Plan as identified in CFSA Appendix F4.
- Continue to provide daily discharge forecasts for Cabinet Gorge to the Albeni Falls (USACE) Project, per a January 7, 1999 Letter of Agreement.
- Continue working on the CFSA Amendment approval process. Pending the outcome of that process, conduct a feasibility analysis of future mitigation concepts designed to address the potential loss in the recreational fishery in the Idaho portion of the lower Clark Fork River associated with a reduction in the minimum flow to 3,000 cfs.

Anticipated Reports and Work Products

- There are no reports or work products associated with the Project Operations Package.

Budget

- Cost of maintaining minimum flows at Cabinet Gorge Project is borne by Avista without any effect on the funding of other programs.
- Costs associated with the maintenance of and accurate FERC reporting on the Cabinet Gorge Project specified minimum flow and the reservoir (i.e., forebay) water level fluctuation limitations are borne by Avista as part of general project administration and operation costs and are not part of any PM&E funds.
- Costs of developing coordination protocols and providing the daily discharge forecasts for the Cabinet Gorge Project will be borne by Avista as part of general project administration and operation costs and are not part of any PM&E funds.
- Pending the outcome of the CFSA Amendment: Cost associated with the feasibility analysis of future mitigation concepts designed to address the potential loss in the recreational fishery in the Idaho portion of the lower Clark Fork River, associated with a reduction in minimum flow to 3,000 cfs, will be borne by Avista. At this time, future mitigation concepts are being discussed with the Idaho Department of Fish and Game, the recreational fisheries managers for the lower Clark Fork River, Idaho. Review and approval of proposed expenditures associated with selected mitigation concepts will be requested of the Management Committee upon completion of the feasibility analysis.

Appendix T 2017 Budget

Project	Carryover¹	2017
Project Operations Package (Estimated)²		0
		0
Total Available		0
Cost of the inflow & outflow monitoring is borne by Avista with no affect on the funding of this program.		
Cost of maintenance and reporting is borne by Avista as part of general administration & operation.		
Cost of developing and coordinating protocol; providing forecasts are borne by Avista as part of general administration & operation.		
Total Request	0	0
Total 2017 Funding Request		0
Unobligated Funds		0

¹ This column denotes carryover of unexpended approved funds, which are anticipated to be expended in the current year.

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

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App.	PM&E - Description	Carryover	2017	III qtr	GDP		Total	2017 Annual
		Funding	Funding	GDP	GDP***	Funding	Implementation	
		Oblig w/Int.	Obligation*	1.26%	Amt	Obligation	Plan Budget	
A	Idaho Tributary & Fishery Enhancement Program							
	Tributary Habitat Acquisition & Enhancement	\$856,897	\$543,258	0.0126	\$6,834	\$550,092	\$1,406,989	\$219,731
Fish	Resource Monitoring, Enhancement & Management	\$13,043	\$46,904	0.0126	\$590	\$47,494	\$60,536	\$69,000
B	Montana Tributary Habitat Acquisition & Recreational Fishery Enhancement							
	Tributary Habitat Acquisition & Enhancement	\$1,386,747	\$387,072	0.0126	\$4,869	\$391,941	\$1,778,688	\$310,905
	Recreational Fishery Enhancement	\$1,210,838	\$258,046	0.0126	\$3,246	\$261,292	\$1,472,130	\$449,925
C	Fish Passage/Native Salmonid Restoration Plan							
	Annual Operation	\$1,761,792	\$748,336	0.0126	\$9,414	\$757,750	\$2,519,542	\$924,851
	Facilities	-\$2,827,624	\$543,260	0.0126	\$6,834	\$550,094	\$550,094	\$920,000
D	Bull Trout Protection & Public Education Project	\$107,693	\$167,506	0.0126	\$2,107	\$169,613	\$277,306	\$234,832
E	Watershed Council Program	\$9,455	\$13,400	0.0126	\$169	\$13,569	\$23,025	\$15,000
F1	Clark Fork River Water Quality Monitoring Program	\$3,834	\$20,102	0.0126	\$253	\$20,355	\$24,189	\$30,355
F2	Monitoring Noxon Reservoir Stratification			**			\$0	\$60,000
F3	Aquatic Organism Tissue Analysis			****			\$0	
F4	Water Quality Protection & Monitoring Plan for Maintenance, Construction & Emergency Activities			****			\$0	
F5	Gas Supersaturation							
	TDG Monitoring			**			\$0	\$27,500
	Mitigation	\$1,354,140	\$811,198	0.0126	\$10,205	\$821,402	\$2,175,543	\$723,308
	GSCP Alternative			**			\$0	\$2,350,000
G	Implementation of Land Use Mgmt Plan			**			\$0	\$203,500
H	Implementation of Recreation Resource Mgmt Plan			**			\$0	\$187,000
	Facilities Fund	\$390,568	\$207,183	0.0126	\$2,606	\$209,789	\$600,357	\$471,800
I	Implementation of Aesthetics Mgmt Plan			**			\$0	\$7,000
J	Implementation of Wildlife, Botanical & Wetland Mgmt Plan			**			\$0	\$5,000
K	Wildlife Habitat Acquisition & Enhancement Fund	\$661,333 1	\$269,890	0.0126	\$3,395	\$273,285	\$934,618	\$934,618
L	Black Cottonwood Habitat on Avista Property	\$62,100	\$6,583	0.0126	\$83	\$6,665	\$68,767	\$10,000
M	Wetlands on Avista Property	\$371,868					\$371,868	\$10,000
P	Forest Habitat for Selected Avista Lands							
	Annual Fund			****			\$0	\$5,000
	Improvement Fund						\$0	
	Timber Revenue	\$151,753					\$166,600	
Q	Reservoir Islands Owned by Avista						\$0	
R	Clark Fork Heritage Resource Program			**			\$0	\$237,500
S	Erosion Fund & Shoreline Stabilization - Guidelines							
	Annual Fund	\$140,526	\$50,453	0.0126	\$635	\$51,087	\$191,613	\$62,000
T	Project Operating Limits	\$0		**				
	Total	\$8,478,752 2	\$4,073,190		\$51,240	\$4,124,431	\$12,621,865	\$8,468,825

* Refers to Appendix U "Funding Summary Table"

** Estimate based on current work level

*** Used Qtr3 GDP for Implicit price deflators.

**** Period one-time costs

App S Total Fund amount capped at \$200,000

Note 1 App K, N1, N2, and N3 - 2005 Management Committee approved transfer of Appendices N1, N2, and N3 carryover amounts to Appendix K. New obligation amount: N1 retains; N2 transfer to App K; and N3 retains \$3,500 with remainder to App K.

Note 2 The totals of "Carryover Funding Obligations w/int" refers to dollars that are made available annually. These funds are adjusted annually by the percentage change of the GDP-IDP as reported by the Bureau of Economic Analysis. Unused funds are carried forward to the next year and increased by the yield in percent as reported in the Federal Reserve Statistical Release H-15 of US treasury securities as a constant maturity.

Fund refers to dollars that are projections made now however; Avista will pay the actual costs of implementation. Unused funds are not carried forward to the next year.

Estimate refers to dollars that support initiatives within programs that are the responsibility of other parties. Avista will pay the actual costs in an amount not to exceed the agreed budget. Unused funds are carried forward to the next year and increased by the yield in percent as reported in the Federal Reserve Statistical Release H-15 of the US treasury securities as a constant maturity.

Budget refers to dollars that are periodic or a one-time cost. Avista will pay the actual costs in an amount not to exceed the specified budget.