



2020 Annual Report

The Clark Fork Project FERC Project No. 2058



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Section 1: Introduction

1.1 Document Background and Purpose

Avista owns and operates the Noxon Rapids and Cabinet Gorge hydroelectric developments [hereafter, “HEDs”; Clark Fork Project, Federal Energy Regulatory Commission (FERC) License No. 2058]. Operation of the Clark Fork Project is conditioned by the Clark Fork Settlement Agreement (CFSA), signed in 1999, and FERC License No. 2058, effective March 1, 2001. In 2020, Avista implemented the terms and conditions of the CFSA in consultation with, and full approval of, the Management Committee (MC) for the twenty-second consecutive year and the terms and conditions of the FERC License for the twentieth consecutive year. Specific Native Salmonid Restoration Plan (CFSA, Appendix C) activities are implemented consistent with the CFSA, FERC License, and USFWS’s 2019 Biological Opinion (*see* Section 8.1).

As specified in this report, Avista, in consultation with members of the MC, which is comprised of State and Federal agencies, non-governmental organizations, and five Native American Tribes, continued to implement the current protection, mitigation, and enhancement (PM&E) measures identified in the CFSA and FERC license. The MC, Terrestrial Resources Technical Advisory Committee (TRTAC), Water Resources Technical Advisory Committee (WRTAC), and Cultural Resources Management Group (CRMG) continued to meet in 2020.

1.2 Summary

The COVID-19 pandemic created new challenges in implementing the CFSA. However, relying on the solid foundation of the CFSA and strong working relationships among all the signatories and other partners, we were able to navigate our way through these challenges to successfully implement the vast majority of the 2020 projects. Avista thanks all the parties for their flexibility and dedication that ultimately resulted in being able to meet the procedural and regulatory requirements of the CFSA and the FERC License.

Parties to the CFSA successfully completed the twenty-second year of implementing PM&E measures. Among the 22 measures, more than 106 projects and programs to benefit aquatic, terrestrial, and cultural resources were implemented. The following paragraphs provide select highlights from the 2020 efforts.

The MC members agreed to utilize the established consent mail process for the annual March meeting to approve the 2019 CFSA Budget Report and 2020 Annual Implementation Plans (AIPs) with associated funding for all active 22 PM&E measures identified in the CFSA and the FERC License. All items were approved by consensus.

The annual September meeting was also successfully accomplished utilizing an alternative method where MC members were provided written updates on the implementation of the various programs and then provided a call-in number for a specific day and time where questions or comments could be addressed with the program leaders.

Avista, through CFSA Appendix R, continued to work with Idaho and Montana State Historic Preservation offices, the U.S. Forest Service (USFS), and representatives from five Native American tribes, collectively referred to as the CRMG, to preserve and protect cultural and historic

resources associated with the Clark Fork Project. In 2020, the Avista Cultural Resource Specialist and/or the CRMG reviewed 85 CFSA-related projects with proposed ground disturbance and/or projects related to the Noxon Rapids and Cabinet Gorge HEDs.

The second phase of a project to restore Bull Trout access to Johnson Creek, Idaho was completed in 2020. This work was funded through Appendix A of the CFSA and involved removing instream roughness and narrowing the banks within the upper project reach to increase water velocities and sediment transport during runoff conditions as well as planting willows to revegetate the modified stream banks.

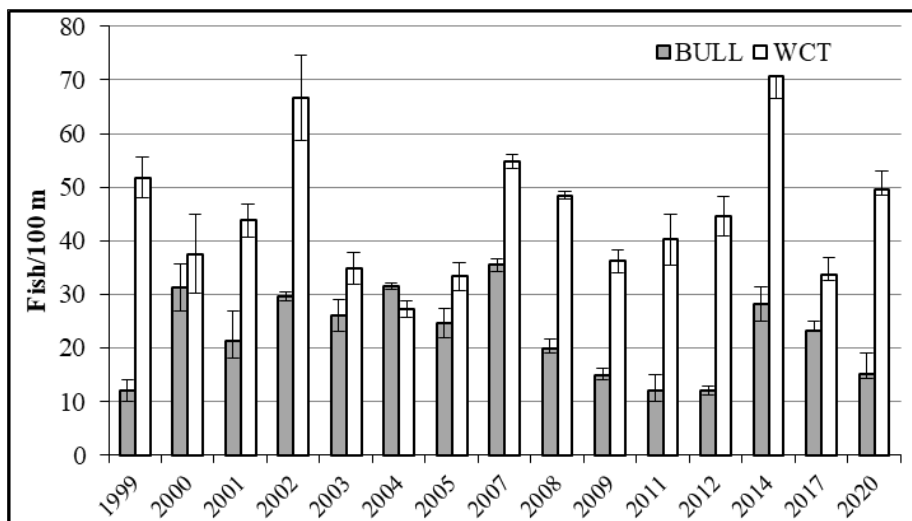


Johnson Creek pre-construction.



Johnson Creek post construction.

Upper Prospect Creek is one of the few streams in the lower Clark Fork River drainage in Montana where only native salmonids occur. This stream has been sampled since 1999 under appendices B and C of the CFSA. As of 2020, the two uppermost long-term monitoring sites have been sampled 15 times each. This monitoring has shown a slight declining trend in Bull Trout abundance. These sites will continue to be monitored to determine if this is a long-term trend or natural year-to-year variation.



Bull Trout and Westslope Cutthroat Trout abundance in upper Prospect Creek.

The recent decline in Bull Trout redd observations coupled with a lack of gravel in upper Prospect Creek led to the implementation of a cost-effective and minimally invasive approach to try to increase the local deposition of suitable spawning gravel. Large conifers were felled at predetermined locations along a one-mile stretch of upper Prospect Creek, within the redd count reach and near long-term monitoring sites. Ten structures were constructed and will be evaluated for two years to assess their effectiveness in retaining gravel.



Efforts to collect Bull Trout and Westslope Cutthroat Trout for upstream transport during the implementation of the Appendix C Upstream Fish Passage Program in 2020 were reduced due to COVID-19 precautions. The night electrofishing crew was reduced from a three-person to a two-person crew and went out two nights a week instead of three nights a week, except for the time period when river flows were high, and a three-person crew was used for additional safety. Avista personnel electrofished three nights a week in late August and four additional nights in September in an effort to increase Bull Trout capture numbers.



Adult Bull Trout captured as part of the Upstream Fish Passage Program.

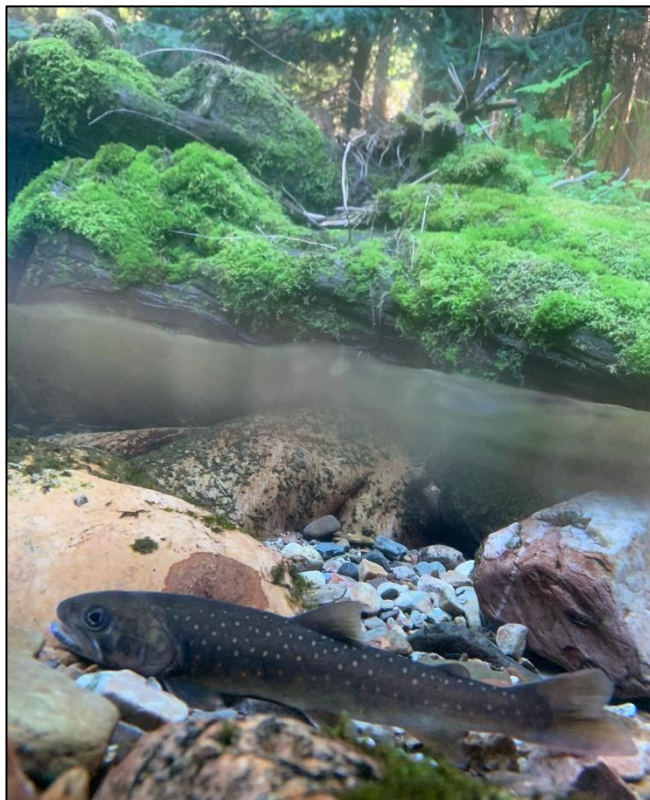
Twenty adult Bull Trout were captured downstream of Cabinet Gorge Dam in 2020 which is the lowest number captured since the inception of this program in 2001. The low capture number may have been related to a number of factors including natural annual variation, reduced collection effort due to COVID-19 precautions, and changes in river flows associated with the construction of the Cabinet Gorge Dam Fishway (CGDF) that may have impacted the catchability of adult Bull Trout. It is noteworthy that the overall Bull Trout redd count in tributaries downstream of Cabinet Gorge Dam was below average during 2020.

Eighteen of the Bull Trout captured downstream of Cabinet Gorge Dam were transported upstream to Montana. Seven Bull Trout were transported to tributaries to Cabinet Gorge Reservoir, seven were transported to tributaries to Noxon Reservoir, and four adult Bull Trout were transported upstream of Thompson Falls Dam. One Bull Trout had a genetic assignment to a tributary downstream of Cabinet Gorge Dam and another Bull Trout died as a result of night electrofishing injuries.

Forty Westslope Cutthroat Trout were captured downstream of Cabinet Gorge Dam and transported upstream into the Cabinet Gorge Reservoir. Ten of these fish were detected on the Bull River passive integrated transponder (PIT) array following release. These fish migrated into the Bull River during the spring spawning period when Westslope Cutthroat Trout have been observed spawning in the upper reaches of the Bull River in previous years.

Bull Trout and other required fish were tested for pathogens in 2020 as part of Avista's requirement to transport fish into Montana. No pathogens of concern were detected in the Bull Trout that were tested. Pathogen testing of the spring sample of *Oncorhynchus* in the lower Clark Fork River

resulted in the detection of *Myxobolus cerebralis*, the parasite that causes whirling disease. The Montana Fish, Wildlife and Parks (MFWP) Fish Health Advisory Committee met to discuss this finding and decided to continue to allow upstream transport of Westslope Cutthroat Trout in 2021.



Juvenile Bull Trout.

A total of 629 juvenile Bull Trout were captured in the Montana adfluvial streams and transported to Lake Pend Oreille in 2020. There were 489 transports from Graves Creek. Based on the transport-to-adult return rate model, we expect to capture and return 23 of these fish to Graves Creek as mature adults. This represents the second highest number of transports from Graves Creek since trapping began in 2002 (the highest was 2019 with 662 juvenile transports and an associated adult equivalent estimate of 26 fish). Similarly, this was a record-setting year for juvenile transports from the Vermilion River. Ninety-two juvenile Bull Trout were captured through ten days of electrofishing and transported to Idaho (adult equivalent estimate = 6.3 fish). Both the number of juvenile transports and associated adult equivalent estimate represent the record high since Vermilion River capture efforts commenced in 2003. Relatively speaking, it was also a good year

in the East Fork Bull River. Forty-eight juvenile Bull Trout were captured and transported to Idaho which represents the third best year since trapping began in 2003 (adult equivalent estimate = 3.6 fish). The recent increases in juvenile Bull Trout captures in Graves Creek are the direct result of record juvenile densities within the stream. However, the increases in Vermilion and East Fork Bull river captures were related to increased effort and effectiveness, and do not reflect an increase in abundance within these streams.

A fish handling facility is currently under construction at Graves Creek to accommodate the record-setting Bull Trout densities and associated capture rates in the permanent weir trap. The facility will have a flow-through water supply from Graves Creek (the water rights were obtained in early 2021) and ample tank space to minimize stress associated with handling and holding. In addition, the contractor has purchased materials and will begin fabrication of the permanent weir enhancements in early 2021. The enhancements are on schedule to be complete in time for the fall trapping season in September.

Construction of the CGDF was affected by several factors in 2020. These included the need to verify previous stability analysis related to bedrock excavation, COVID-19 protocols, high spring runoff damage to the cofferdam and associated repair efforts.

Despite these challenges, progress was made in completing the bedrock excavation and initiating concrete pours for the various components of the fish trap. Installation of the infrastructure for the siphon system that will provide attraction flows for the fish trap was also largely completed. It is now anticipated that the fishway will be completed in spring 2022, with commissioning to occur post-spill 2022.



View from inside the cofferdam looking at bedrock to be removed for construction of the Fishway structure prior to spill.



Cofferdam during spill at Cabinet Gorge Dam.



Damage to the temporary cofferdam during spring runoff along two walls where both the exterior and interior sheet pile cells were separated from the structural framework.



Electrofishing boat being lowered into the cofferdam by the crane to conduct fish salvage efforts.



Overhead view of repaired cofferdam and rock excavation work.



Excavation and rock dowel installation. Note, the red line denotes the concrete-bedrock interface.



Fishway siphon platform installation on the forebay of Cabinet Gorge Dam.

A real-time data system was installed at Cabinet Gorge Dam in May 2020. This project was funded under Appendix F5 and will facilitate collection and review of total dissolved gas (TDG) data at 15-minute intervals, thereby improving data quality and reliability.

The COVID-19 pandemic had far-reaching effects, and the outdoor recreation industry was no exception. After being under quarantine for a few months, the public needed an outlet and they took to the outdoors in droves. This was documented not only in the lower Clark Fork, but in the entire region. Areas that offered uncrowded, free, or inexpensive access to natural areas, such as recreation sites on Noxon and Cabinet Gorge reservoirs, were utilized by recreationists at unprecedented levels.

Over 319,000 people visited the 20 Clark Fork Project recreation sites that were monitored between May 22 and September 10, 2020. This represents a 26% increase over use levels observed in 2019. Day-use sites accounted for the greatest increase in use, followed by small campgrounds. Increased use of these sites was likely due to the public wanting to be outside, while trying to avoid the larger, crowded recreation sites.



Real-time TDG station at Cabinet Gorge Dam.



Avista's South Shore Recreation Area.

Once again, 2020 was representative of the successful implementation of the CFSA and FERC License to protect, mitigate, and enhance the natural resources associated with the Clark Fork Project while also providing clean, reliable, and affordable power for Avista customers. This cannot happen without the dedication and engagement of the CFSA signatories and other partners. Thank you to everyone involved!

1.3 Acronyms and Abbreviations

AIP	Annual Implementation Plan
BMP	Best Management Practices
CFS	cubic feet per second
CFSA	Clark Fork Settlement Agreement
CGDF	Cabinet Gorge Dam Fishway
CGFHF	Cabinet Gorge Fish Handling Facility
CPUE	Catch per unit effort
CRMG	Cultural Resources Management Group
DNRC	Montana Department of Natural Resources and Conservation
FERC	Federal Energy Regulatory Commission
GDP	Gross Domestic Product
GMCD	Green Mountain Conservation District
GSCP	Gas Supersaturation Control Program
HED	hydroelectric development
IDFG	Idaho Department of Fish and Game
KNRD	Kalispel Tribe Natural Resources Department
LCFWG	Lower Clark Fork Watershed Group
LPO	Lake Pend Oreille
LUMP	Land Use Management Plan
MC	Management Committee
MFWP	Montana Fish, Wildlife and Parks
NEPA	National Environmental Policy Act
NP	Northern Pike
NSRP	Native Salmonid Restoration Plan
PCTU	Panhandle Chapter of Trout Unlimited
PIT	passive integrated transponder
PM&E	protection, mitigation, and enhancement
RAC	Sanders County Resource Advisory Committee
RPMs	Reasonable and Prudent Measures
RRMP	Recreation Resource Management Plan
TDG	total dissolved gas
TRTAC	Terrestrial Resources Technical Advisory Committee
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
WDFW	Washington Department of Fish and Wildlife
WRTAC	Water Resources Technical Advisory Committee

Section 2: Management Committee

2.1 Purpose

Paragraph 26 of the CFSA established a MC composed of representatives from each of the CFSA signatories. The MC oversees all PM&E measures. The MC shall have the authority, subject to such FERC approvals as may be necessary in appropriate cases, to:

- Approve plans developed by Avista and the appropriate technical committee for the implementation of PM&E measures, including the related funding;
- Approve modifications of PM&E measures;
- Oversee the implementation of all PM&E measures by Avista and the appropriate committees;
- Establish such committees as it deems necessary for the purpose of implementing the CFSA and PM&E measures, and determine, as appropriate, the size, membership, and procedures of such committees;
- Establish appropriate procedures for conducting its activities, including procedures for proxy voting and teleconferencing methods;
- Permit additional entities to execute the CFSA and thereby become parties to the CFSA (Parties) and, as appropriate, permit the addition of such new Parties on terms different from those of the original signatories to the CFSA;
- Resolve all disputes regarding implementation of approved PM&E measures and all disputes brought to it for resolution by any of the Parties or committees;
- Amend the CFSA including the PM&E measures, in accordance with the voting provisions set forth in the CFSA.

2.2 List of Representatives

In 2020, the MC consisted of representatives from 27 Parties of the CFSA. Representatives are verified bi-annually through the sign-in sheet distributed at each MC meeting. The 2020 MC representatives and alternates are listed below:

Avista	Nate Hall
Bull River Watershed Council	Kathy Ferguson/Tom McDowell
Cabinet Resource Group	Jim Nash
Coeur d'Alene Tribe	Phillip Cernera
Confederated Salish and Kootenai Tribes	Les Evarts
Green Mountain Conservation District	Terry Hightower
Idaho Department of Environmental Quality	Bob Steed
Idaho Department of Fish and Game	Chip Corsi/Andy Dux
Idaho Rivers United	Kevin Lewis
Kalispel Tribe	Joe Maroney/Ray Entz
Kootenai Tribe of Idaho	Sue Ireland/Scott Soultz
Lake Pend Oreille Idaho Club	Ryan Roslak/David Gillespie
Montana Bass Federation	Bob Beberg
Montana Department of Environmental Quality	Keenan Storrar
Montana Department of Natural Resources and Conservation	Valerie Kurth
Montana Fish, Wildlife and Parks	Jim Williams/Mike Hensler

Montana State Historic Preservation Office
Noxon-Cabinet Shoreline Coalition
Panhandle Chapter Trout Unlimited
Rock Creek Alliance
Sanders County, Montana
U.S. Fish and Wildlife Service
U.S. Forest Service

Stan Wilmoth/Jessica Bush
Rick Robinson
Loren Albright/Bill Love
Diane Williams
Tony Cox/Carol Brooker
Ben Conard/Jodi Bush
Michael Fieger/Kira Powell

Management Committee representatives not designated in 2020:

Alliance for the Wild Rockies
Elk Creek Watershed Council
Idaho Department of Parks and Recreation
Idaho State Historic Preservation Office

2.3 Meeting and Activity Summary

Due to COVID-19 concerns and precautions in 2020, the MC conducted business utilizing an alternative process to meet the requirements of Paragraph 28 of the CFSA. The first “meeting” consisted of sending all members copies of the 2020 AIPs and asking for approval through a slightly modified consent mail process on March 13, 2020. Through this process all 2020 AIPs were approved as presented by consensus. An alternative process was also utilized for the second required meeting of the MC that included providing MC members brief written summaries of all activities associated with the 2020 AIPs. An open conference call line was set up on September 23, 2020 where all program implementers were available to address questions or concerns from the MC. No formal business was conducted during this call, instead relying on the established consent mail process for these actions.

All meetings were open to the public; meeting information was placed on Avista’s Clark Fork Project website, and notices were placed in the local newspaper. Annual Implementation Plans and project updates were provided to the MC and anyone that requested them.

2.3.1 2020 Consent Mails

Throughout 2020, the MC reviewed three proposals received through the Consent Mail request process established by the Clark Fork Management Committee Procedures. Consent Mail requests are a business process utilized for decision making between MC meetings. Proposals that are approved move forward, while those that are not approved are discussed at the next regularly scheduled MC meeting. The following proposals were received by Consent Mail, and approved:

- March 13, 2020 request for approval of the 2019 Avista CFSA Annual Budget Report, 2020 Aquatic Annual Implementation Plans, 2020 Terrestrial Annual Implementation Plans, 2020 Clark Fork Heritage Resource Program Annual Implementation Plan, and Appendix D Implementation Plan for the Bull Trout Protection and Public Education Project 2020-2024 (approved on March 23, 2020).

- July 31, 2020 request for an additional \$55,000 from the Appendix C, “Facilities Fund” for construction of the Graves Creek Fish Handling Facility (CFSA Appendix C; approved on August 14, 2020).
- October 5, 2020 Appendix C – Cabinet Gorge Fish Handling Facility Modifications (CFSA Appendix C; approved on October 19, 2020).

2.4 Key 2020 References

Avista. 2020. Consent Mail approval of 2019 Avista CFSA Annual Budget Report, 2020 Aquatic Annual Implementation Plans, 2020 Terrestrial Annual Implementation Plans, 2020 Clark Fork Heritage Resource Program Annual Implementation Plan, and Appendix D Implementation Plan for the Bull Trout Protection and Public Education Project 2020-2024 (March 23, 2020). Avista document identification number 2020-0070.

Avista. 2020. Consent Mail approval of Appendix C – request for an additional \$55,000 from the Appendix C, “Facilities Fund” for construction of the Graves Creek Fish Handling Facility (August 14, 2020). Avista document identification number 2020-0150.

Avista. 2020. Consent Mail approval of Appendix C – request for Cabinet Gorge Fish Handling Facility Modifications (October 19, 2020). Avista document identification number 2020-0188.

Avista. 2020. Public webpage for the Clark Fork Project.
<https://www.myavista.com/about-us/celebrate-our-rivers/federal-licensing> (December 2020).

Avista. 2020. Management Committee Meeting Packet from September 23, 2020. Avista document identification number 2020-0266.

Sanders County Ledger. 2020. Public meeting notice for the March MC Meeting (March 17, 2020). Avista document identification number 2020-0169.

Sanders County Ledger. 2020. Public meeting notice for the September MC Meeting (September 23, 2020). Avista document identification number 2020-0170.

Section 3: Water Resources Technical Advisory Committee

3.1 Purpose

The WRTAC is one of two technical advisory committees designated by Paragraph 32 of the CFSA. The WRTAC provides technical review of water-related PM&E measures (Section 3.2), including those dealing with fishery resources, water quality, and water quantity. The WRTAC is consulted in the development of appropriate implementation plans for water resources PM&E measures and related funding recommendations.

3.2 Water Related PM&E Measures

PM&E Measure	CFSA Appendix	Clark Fork License Article
Idaho Tributary Habitat Acquisition and Fishery Enhancement Program	A	404
Montana Tributary Habitat Acquisition and Recreational Fishery Enhancement Program	B	405
Fish Passage / Native Salmonid Restoration Plan	C	406
Bull Trout Protection and Public Education Project	D	407
Watershed Councils Program	E	408
Clark Fork River Water Quality Monitoring Program	F1	409
Monitoring of Noxon Reservoir Stratification and Mobilization of Sediment Nutrients/Metals	F2	410
Aquatic Organism Tissue Analysis	F3	411
Water Quality Protection and Monitoring Plan for Maintenance, Construction and Emergency Activities	F4	412
Dissolved Gas Supersaturation Control, Mitigation, and Monitoring	F5	413
Project Operations Package	T	429/430/431

3.3 List of Representatives

The WRTAC consists of representatives appointed by MC members. The 2020 representatives are listed below:

Avista	Eric Oldenburg
Bull River Watershed Council	Kathy Ferguson
Cabinet Resource Group	Jim Nash
Coeur d'Alene Tribe	Phillip Cerna
Confederated Salish and Kootenai Tribes	Craig Barfoot
Green Mountain Conservation District	Terry Hightower
Idaho Department of Environmental Quality	Tom Herron/Bob Steed
Idaho Department of Fish and Game	Ken Bouwens
Kalispel Tribe	Ken Merrill
Kootenai Tribe of Idaho	Shawn Young
Lake Pend Oreille Idaho Club	David Gillespie

Montana Bass Federation
Montana Department of Environmental Quality
Montana Department of Fish, Wildlife and Parks
Montana Department of Natural Resources and Conservation
Montana State Historic Preservation Office
Noxon-Cabinet Shoreline Coalition
Panhandle Chapter Trout Unlimited
U.S. Fish and Wildlife Service
U.S. Forest Service

Bob Beberg
Randy Apfelbeck
Ryan Kreiner/Jason Blakney
Valerie Kurth
Jessica Bush
Rick Robinson
Bill Love
Kevin Aceituno
Chris Rossel

The following parties to the CFSA did not designate WRTAC representatives in 2020:

Alliance for the Wild Rockies
Elk Creek Watershed Council
Idaho Department of Parks and Recreation
Idaho Rivers United
Idaho State Historic Preservation Office
Rock Creek Alliance
Sanders County, Montana

3.4 Meeting and Activity Summary

The WRTAC met twice in 2020, on January 21 and August 25. The January meeting was in person; however, the August update meeting was held by Skype conference due to the COVID-19 pandemic restrictions. Notices of the meetings were placed in the local newspaper and posted on Avista's Clark Fork Project website. In addition, the Aquatic Implementation Team scored all the ranked projects and provided the recommended scores to the WRTAC, which were subsequently modified and/or approved during the January 21 meeting.

3.5 Key 2020 References

Avista. 2020. Water Resources Technical Advisory Committee Meeting Notes January 21, 2020. Avista document identification number 2020-0237.

Avista. 2020. Water Resources Technical Advisory Committee Meeting Packet from August 25, 2020. Avista document identification number 2020-0244.

Avista. 2020. Public webpage for the Clark Fork Project.
<https://www.myavista.com/about-us/celebrate-our-rivers/federal-licensing> (December 2020).

Sanders County Ledger. 2020. Public meeting notice for the January WRTAC Meeting (January 21, 2020). Avista document identification number 2020-0012.

Sanders County Ledger. 2020. Public meeting notice for the August WRTAC Meeting (August 25, 2020). Avista document identification number 2020-0225.

Section 4: Terrestrial Resources Technical Advisory Committee

4.1 Purpose

The TRTAC is one of two technical advisory committees designated by Paragraph 32 of the CFSA. The TRTAC provides technical review of terrestrial-related PM&E measures (Section 4.2), including those dealing with wildlife, botanical resources, wetlands, land use, recreation, and aesthetics. The TRTAC is consulted in the development of appropriate implementation plans for terrestrial resource PM&E measures and related funding recommendations.

4.2 Terrestrial Related PM&E Measures

PM&E Measures	CFSA Appendix	Clark Fork License Article
Implementation of the Land Use Management Plan	G	414
Implementation of the Recreation Resource Management Plan	H	415
Implementation of the Aesthetics Management Plan	I	416
Development and Implementation of the Wildlife, Botanical and Wetland Management Plan	J	417
Wildlife Habitat Acquisition, Enhancement and Management Program	K	418
Black Cottonwood Habitat Protection and Enhancement	L	419
Wetlands Protection and Enhancement Program	M	420
Forest Habitat Protection and Enhancement	P	425
Reservoir Island Protection	Q	426
Erosion Fund and Shoreline Stabilization Guidelines Program	S	428

4.3 List of Representatives

The TRTAC consists of representatives appointed by MC members. The 2020 representatives are listed below:

Avista	Nate Hall/Arthur Potts
Bull River Watershed Council	Kathy Ferguson/Tom McDowell
Cabinet Resource Group	Rob Kjos
Coeur d'Alene Tribe	Phillip Cernera
Elk Creek Watershed Council	Judy Hutchins
Green Mountain Conservation District	Terry Hightower
Idaho Department of Environmental Quality	Bob Steed
Idaho Department of Fish and Game	Evan DeHamer
Kalispell Tribe	Ray Entz
Kootenai Tribe of Idaho	Scott Soult/Shannon Ehlers
Lake Pend Oreille Idaho Club	Will Crook
Montana Bass Federation	Bob Beberg
Montana Department of Environmental Quality	Craig Jones
Montana Fish, Wildlife and Parks	Dave Landstrom/Bruce Sterling

Montana State Historic Preservation Office
Noxon-Cabinet Shoreline Coalition
Rock Creek Alliance
Sanders County, Montana
U.S. Fish and Wildlife Service
U.S. Forest Service

Jessica Bush
Rick Robinson
Diane Williams/Mary Costello
Tony Cox
Wayne Kasworm
Les Raynor/Ron Torreta

The following parties to the CFSA did not designate TRTAC representatives in 2020:

Alliance for the Wild Rockies
Confederated Salish and Kootenai Tribes
Idaho Department of Parks and Recreation
Idaho Rivers United
Idaho State Historic Preservation Office
Montana Department of Natural Resources and Conservation
Panhandle Chapter Trout Unlimited

4.4 Meeting and Activity Summary

The TRTAC met twice in 2020, on January 22 and August 26. The January meeting was in person; however, the August update meeting was held by Skype conference due to the COVID-19 pandemic restrictions. Notices of the meetings were placed in the local newspaper and posted on Avista's Clark Fork Project website.

4.5 Key 2020 References

Avista. 2020. Terrestrial Resources Technical Advisory Committee Meeting Minutes January 22, 2020. Avista document identification number 2020-0238.

Avista. 2020. Public webpage for the Clark Fork Project.
<https://www.myavista.com/about-us/celebrate-our-rivers/federal-licensing> (December 2020).

Avista. 2020. TRTAC meeting invitation memo/update and notes (August 26, 2020). Avista document identification number 2020-0252.

Sanders County Ledger. 2020. Public meeting notice for the January TRTAC Meeting (January 22, 2020). Avista document identification number 2020-0012.

Sanders County Ledger. 2020. Public meeting notice for the August TRTAC Meeting (August 26, 2020). Avista document identification number 2020-0225.

Section 5: Cultural Resources Management Group (License Article 427 – CFSA Appendix R)

5.1 Purpose and Resource Benefit

The CRMG was formed in support of CFSA Appendix R (Clark Fork Heritage Resource Program). Appendix R of the CFSA corresponds to Article 427 in the FERC License for Clark Fork Project No. 2058.

The CRMG consists of representatives from Coeur d’Alene, Kootenai, Confederated Salish and Kootenai, Kalispel Tribes, Idaho and Montana State Historic Preservation offices, USFS, and Avista. Individual representatives of each tribe and agency may vary from meeting to meeting. Due to confidentiality requirements, these meetings are not open to the public. The CRMG reviews all ground-disturbing activities that may impact cultural or historic resources and uses the Clark Fork Heritage Resource Management Plan (Plan) to guide implementation of management efforts.

The purpose of CFSA Appendix R is to provide directives for all eligible properties associated with the Clark Fork Project, including dam sites, homesteading-era properties, pre-historic properties, and sites with traditional cultural significance. The Plan helps to support many of the projects in other CFSA PM&E measures. It also helps to ensure that historic properties are protected and managed. The Plan is intended to extend beyond a mere “treatment plan” and provides the flexibility to be useful to a variety of audiences. The Plan includes public education goals, objectives, and action strategies as important focuses.

5.2 Meeting and Activity Summary

On March 4, 2020, the CRMG held a meeting to discuss the 2020 AIPs for aquatic and terrestrial resources, proposed ground disturbances at recreation sites, various land use permits, and annual monitoring results. The CRMG also reviewed the 2019 meeting minutes and annual work summary prior to finalization. This meeting was held in Sandpoint, Idaho with attendees representing Confederated Salish and Kootenai Tribes, USFS Kootenai National Forest, Coeur d’Alene Tribe, Montana State Historical Preservation Office, and Avista.

The fall CRMG meeting was cancelled since all projects and monitoring were going as planned.

5.3 2020 Annual Implementation Plan Project Plan

- Clark Fork Heritage Resource Management Program
 - *Completed per 2020 AIP^{1, 2}*

5.4 Other 2020 Activities

Other projects not specifically tied to aquatic or terrestrial PM&E measures reviewed by the Avista Cultural Resource Specialist and/or the CRMG include:

- Maintenance projects for Noxon Rapids and Cabinet Gorge dams and associated facilities

5.5 Key 2020 References

¹ Avista. 2019. CRMG Meeting Summary (Public Version) from March 5, 2019. Avista document identification number 2019-0405.

² Avista. *In prep.* CRMG Meeting Summary (Public Version) from March 4, 2020.

Section 6: Water Resources PM&E Measures Implementation Efforts

6.1 Idaho Tributary Habitat Acquisition and Fishery Enhancement Program (License Article 404 – CFSA Appendix A)

6.1.1 Purpose and Resource Benefit

The purpose of this program is to offset the power peaking impacts of the Cabinet Gorge Development to native salmonid species (i.e., Bull Trout, Westslope Cutthroat Trout, and Mountain Whitefish). Resource benefits are accomplished through watershed restoration and enhancement, fishery monitoring and management support, and a public education and enforcement initiative focused on Bull Trout in Idaho.

6.1.2 2020 Annual Implementation Plan Project Plans

Tributary Habitat Acquisition and Enhancement

- Habitat Restoration Scoping Allocation
 - *Completed per 2020 AIP^{1, 2}*
- Habitat Restoration and Acquired Property Maintenance and Monitoring Allocation
 - *Completed per 2020 AIP¹*
- Priority Native Salmonid Habitat Acquisition and Conservation Allocation
 - *Completed per 2020 AIP¹*
- Idaho Field Station Construction
 - *Variance¹; see Section 6.1.3*
- Habitat Prioritization Evaluation for the Upper Pack River and McCormick Creek
 - *Completed per 2020 AIP^{1, 3}*
- Pack River Watershed Management Plan Addendum
 - *Completed per 2020 AIP^{1, 4}*
- Johnson Creek Fish Passage Improvement Design and Construction
 - *Completed per 2020 AIP^{1, 5}*
- Lower Clark Fork River Minimum Flow and Water Temperature Monitoring
 - *Completed per 2020 AIP^{1, 6, 7}*
- Trestle Creek Habitat Enhancement Project Phase I
 - *Completed per 2020 AIP^{1, 8}*

Fishery Resource Monitoring, Enhancement, and Management

- Fish Resource Monitoring, Enhancement, and Management Plan
 - **Variance** ^{1, 9, 10, 11, 12, 13, 14}; see Section 6.1.3

6.1.3 Projects with Significant Variances

Project Plan	Variances
Idaho Field Station Construction	A technical memorandum or other appropriate work product summarizing building plans, cost estimates, as well as associated permitting requirements was produced in June rather than by March 1, 2020. Building plans from this memorandum (Avista. <i>In prep.</i> Building plans, refined cost estimates, and permitting requirements for Idaho fisheries program office as part of implementation of Clark Fork Settlement Agreement Projects. Report to Avista, Noxon, Montana. – from 2019 annual report) are shown in the 2020 Annual Work Summary.
Fish Resource Monitoring, Enhancement, and Management Plan	<p>The Idaho Department of Fish and Game (IDFG) comprehensive project report summarizing past tributary monitoring data was due November 1, 2020. The new anticipated comprehensive project report due date is December 1, 2021.</p> <p>The IDFG comprehensive project report summarizing the lower Clark Fork River Salmonid Abundance surveys was due November 1, 2020. The new anticipated comprehensive project report due date is December 1, 2021.</p> <p>Temperature data were not received until December due to temperature data loggers being retrieved after the due date of November 1.</p>

6.1.4 Key 2020 References

- ¹ Bouwens, K., A. Ransom, and P. Kusnierz. 2020. Idaho Tributary Habitat Acquisition and Fishery Enhancement Program Appendix A 2020. Annual Work Summary. Avista document identification number 2020-0247.
- ² McFall, J. 2020. Site Visit Summary, Lightning Creek on July 24, 2020. Avista document identification number 2020-0154.
- ³ GeoEngineers. 2020. Habitat Prioritization Evaluation for McCormick Creek and Upper Pack River. Project Completion Report. Avista document identification number 2020-0171.
- ⁴ Erickson, J. *In prep.* Pack River Native Salmonid Restoration Plan.

- ⁵ McFall, J. 2020. Daily Construction Report Johnson Creek Phase 2 Construction, Bonner County. Avista document identification number 2020-0145.
- ⁶ Kusnierz, P. 2020. Lower Clark Fork River Minimum Flow and Water Temperature Monitoring. Annual Project Update – 2020. Avista documentation number 2020-0223.
- ⁷ Avista. Database for Temperature Monitoring Data Compilation; for more information on this database contact Paul Kusnierz (Paul.Kusnierz@avistacorp.com).
- ⁸ McFall, J. 2020. Trestle Creek Progress Notes, Summary of Work January – July 2020. Avista document identification number 2020-0153.
- ⁹ Frawley, S., R. Jakubowski, and K. A. Bouwens. 2020. 2019 Idaho Tributary Salmonid Abundance Monitoring. Annual Project Update. Avista document identification number 2020-0068.
- ¹⁰ Ransom, A., S. Frawley, R. Jakubowski, and K. A. Bouwens. 2020. 2019 Pend Oreille Basin Bull Trout Redd Monitoring Project Update. Annual Project Update. Avista document identification number 2020-0147.
- ¹¹ Bouwens, K. A., R. Jakubowski, and S. Frawley. *In prep.* 2009–2018 Idaho Tributary Salmonid Abundance Monitoring. Comprehensive Project Report.
- ¹² Bouwens, K. A., R. Jakubowski, and S. Frawley. *In prep.* Lower Clark Fork River Salmonid Abundance Estimates (2014–2018). Comprehensive Project Report.
- ¹³ Ransom, A., R. Jakubowski, and K. A. Bouwens. *In prep.* 2020 Idaho Tributary Salmonid Abundance Monitoring. Annual Project Update.
- ¹⁴ Ransom, A., S. Frawley, R. Jakubowski, and K. A. Bouwens. *In prep.* 2020 Pend Oreille Basin Bull Trout Redd Monitoring. Annual Project Update.

6.2 Montana Tributary Habitat Acquisition and Recreational Fishery Enhancement Program (License Article 405 – CFSA Appendix B)

6.2.1 Purpose and Resource Benefit

The purpose of this program is to offset the impacts of the power peaking and reservoir operational impacts of the Clark Fork Project to native salmonids and recreational fisheries in Montana. This is achieved through a multiple-component program 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. These programmatic efforts benefit tributary habitats within the project area and the native salmonid and recreational fisheries associated with them.

6.2.2 2020 Annual Implementation Plan Project Plans

Tributary Habitat Acquisition and Enhancement

- Habitat Restoration Monitoring and Native Salmonid Abundance Monitoring Plan
 - ***Variance*** ^{1, 2, 3}; see Section 6.2.4
- Vermilion River Sims Reach Restoration Survey and Design
 - ***Variance*** ^{1, 4}; see Section 6.2.4
- Stream Gage Monitoring
 - ***Variance*** ^{1, 5, 6, 7, 8, 9, 10, 11, 12, 13}; see Section 6.2.4
- Cabinet Ranger District Automated Snow Recording Site Operation and Maintenance 2020–2021
 - ***Variance*** ^{1, 14, 15}; see Section 6.2.4
- Crow Creek Bull Trout Investigation
 - ***Variance*** ^{1, 16}; see Section 6.2.4
- Graves Creek Pilot Habitat Enhancement Project
 - ***Completed per 2020 AIP*** ^{1, 17}
- Upper Prospect Creek LWD Project
 - ***Completed per 2020 AIP*** ^{1, 18}
- Lower Clark Fork Watershed Group Project Coordination
 - ***Variance*** ^{1, 19}; see Section 6.2.4
- Habitat Restoration Monitoring, Maintenance and Contingency Allocation
 - ***Variance*** ^{1, 20}; see Section 6.2.4

- Habitat Restoration, Property Acquisition, and Conservation Easement Contingency Allocation
 - *Completed per 2020 AIP¹*
- Phase II Crow Creek Stream and Riparian Restoration Project
 - *Completed per 2020 AIP^{1, 21}*
- East Fork Bull River Morphology, Connectivity, and Habitat Enhancement Project
 - *Variance^{1, 22, 23, 24}; see Section 6.2.4*

Recreational Fishery Enhancement

- Cabinet Gorge and Noxon Reservoir Fisheries Monitoring Plan
 - *Variance^{1, 25, 26, 27, 28}; see Section 6.2.4*
- Eurasian Watermilfoil Literature Review and Noxon Reservoir Existing Data Analysis
 - *Variance^{1, 29}; see Section 6.2.4*
- Pilot Project: Modification of Eurasian Watermilfoil Beds on Noxon Reservoir for Fishery Benefits
 - *Completed per 2020 AIP¹*
- Mountain Lake Fisheries Monitoring Project
 - *Completed per 2020 AIP^{1, 30}*
- Thompson Falls Field Station Phase II
 - *Completed per 2020 AIP¹*
- Lower Bull River Day Use Boat Access Site Construction
 - *Variance^{1, 31}; see Section 6.2.4*
- Noxon Reservoir Boat Ramp Improvements
 - *Variance¹; see Section 6.2.4*
- Managing Aquatic Invasive Plants on Noxon and Cabinet Gorge Reservoirs
 - *Variance¹; see Section 6.2.4*
- Thompson River Property Acquisition
 - *Completed per 2020 AIP¹*

6.2.3 Other 2020 Activities

- December 31, 2020 notification of acceptance of a donated conservation easement on 43.7 acres at the confluence of the East Fork Bull River and the mainstem Bull River.
 - *Completed per 2020 AIP¹*

6.2.4 Projects with Significant Variances

Project Plan	Variances
Habitat Restoration Monitoring and Native Salmonid Abundance Monitoring Plan	Fisheries monitoring sampling occurred at fewer sites than planned in 2020. The Annual Project Update Report of 2019 activities was not completed in 2020. This report will be finalized by April 1, 2021.
Vermilion River Sims Reach Restoration Survey and Design	A design alternative was developed by the USFS to address concerns of minimizing instream disturbance in light of a decreasing Bull Trout trend. Proponents met onsite and discussed the alternative and it was presented in the Appendix B Annual Work Summary in December. While a formal Project Completion Report was not completed (due in June) for this project, the design alternatives and selected design were presented to project proponents in December and functionally fulfilled the requirements of this report.
Stream Gage Monitoring	Revisions to the data for Rock Creek resulted in a delay of the 2019 Water Report as well as the associated 30-minute data for Rock Creek, which will be completed in 2021.
Cabinet Ranger District Automated Snow Recording Site Operation and Maintenance	No work was done on this project by the USFS in 2020. A draft of the Project Completion Report was received in 2020. The USFS will finalize this report by May 1, 2021.
Crow Creek Bull Trout Investigation	The Project Completion Report was not completed by MFWP in 2020. This report has been rescheduled to be completed by July 30, 2021.
Lower Clark Fork Watershed Group Project Coordination	The Lower Clark Fork Stream Restoration Summary 1995–2020 was not completed in 2020 due to prioritization of implementing stream restoration projects. The authors will incorporate information through 2020 into this Comprehensive Project Report that will be distributed for review by December 31, 2021.
Habitat Restoration Monitoring, Maintenance, and Contingency Allocation	A draft Project Completion Report for Mainstem Bull River Reforestation on Forest Service Lands and NEPA Process by the USFS was received in October 2020. The Project Completion Report will be finalized in May 2021.
East Fork Bull River Morphology, Connectivity, and Habitat Enhancement Project	The beaver management plan, revegetation site plan, and flow management assessment and recommendations memoranda were not completed by July 31, September 30 and November 1, 2020, respectively. These plans and assessments will be completed in 2021.

Project Plan	Variances
Cabinet Gorge and Noxon Reservoir Fisheries Monitoring Plan	<p>The 2017 Annual Project Update was not included as a work product in the 2020 Project Plan and was not finalized in 2020. This report is currently under review and will be completed in 2021.</p> <p>The 2019 Annual Project Update work product was not completed by November 30, 2020. This report will be completed in 2021.</p> <p>The University of Idaho was unable to assist with field work for 2020 reservoir monitoring due to COVID-19 concerns and sampling was not performed. Normal reservoir monitoring sampling is anticipated to resume in the fall of 2021.</p>
Eurasian Watermilfoil Literature Review and Noxon Reservoir Existing Data Analysis	<p>The Project Completion Report was not finalized by Avista on July 1, 2020. This report has been submitted for review and is scheduled to be completed by April 1, 2021.</p>
Lower Bull River Day Use Boat Access Site Construction	<p>Zoning restrictions precluded installation of a vault toilet, and the need for a vault toilet continues to be evaluated. Appropriate signage was developed, purchased, and installed in 2020, with the exception of highway approach signs that will be installed in the spring of 2021.</p>
Noxon Reservoir Boat Ramp Improvements	<p>Work on this proposal by Avista and MFWP, including a technical memorandum or other work product, was not completed in 2020. This work will continue in 2021.</p>
Managing Aquatic Invasive Plants in Noxon and Cabinet Gorge Reservoirs	<p>No Appendix B funds were used for the herbicide treatments in 2020 and therefore the Annual Project Update and Project Completion Report were not prepared.</p>

6.2.5 Key 2020 References

- ¹ Blakney, J. 2020. Montana Tributary Habitat Acquisition and Recreational Fishery Enhancement Program (Appendix B). Annual Work Summary 2020. Avista document identification number 2020-0261.
- ² Blakney, J., and Tholl. *In prep.* Native Salmonid Abundance and Tributary Habitat Restoration Monitoring: Annual Project Update – 2019.
- ³ Blakney, J., and Tholl. *In prep.* Native Salmonid Abundance and Tributary Habitat Restoration Monitoring: Annual Project Update – 2020.
- ⁴ Neesvig, C. 2020. Vermilion River Sims Reach Restoration Survey and Design (captured within the Appendix B Annual Work Summary; Avista document identification number 2020-0261.

- ⁵ USFS. *In prep.* Water - Temperature - Data Report, WY 2019, Rock Creek at Hwy 200 – Noxon, Montana.
- ⁶ USFS. 2020. Water - Sediment - Temperature - Data Report, WY 2019, Vermilion River at red bridge – Trout Creek, Montana. Avista document identification number 2019-0407 (replaces 2019-0354).
- ⁷ USFS. 2020. Water - Temperature - Data Report, WY 2019, Graves Creek at Blue Slide Road – Thompson Falls, Montana. Avista document identification number 2019-0408 (replaces 2019-0352).
- ⁸ USFS. 2020. Water - Temperature - Data Report, WY 2020, Bull River @ historic USGS Gaging Station – Noxon, Montana. Avista document identification number 2020-0254.
- ⁹ USFS. 2020. Water - Temperature - Bed Sediment - Data Report, WY 2020, East Fork of the Bull River – Noxon, Montana. Avista document identification number 2020-0255.
- ¹⁰ USFS. 2020. Water - Temperature - Data Report, WY 2020, Rock Creek at Hwy 200 – Noxon, Montana. U.S. Forest Service, Trout Creek, Montana. Avista document identification number 2020-0256.
- ¹¹ USFS. 2020. Water - Sediment - Temperature - Data Report, WY 2020, Trout Creek at 214 bridge – Trout Creek, Montana. Avista document identification number 2020-0257.
- ¹² USFS. 2020. Water - Sediment - Temperature - Data Report, WY 2020, Vermilion River at red bridge – Trout Creek, Montana. Avista document identification number 2020-0258.
- ¹³ USFS. 2020. Water - Temperature - Data Report, WY 2020, Graves Creek at Blue Slide Road – Thompson Falls, Montana. Avista document identification number 2020-0259.
- ¹⁴ Neesvig, C. *In prep.* Cabinet Ranger District Automated Snow Recording Site Project Completion Report.
- ¹⁵ National Oceanic and Atmospheric Association. 2020. National Operational Hydrologic Remote Sensing Center. Interactive Snow Information. Chicago Ridge. Available: <https://www.nohrsc.noaa.gov/interactive/html/graph.html?ey=2019&em=12&ed=19&units=0&station=CHIM8> (December 2020).
- ¹⁶ Blakney, J. *In prep.* Crow Creek Bull Trout Investigations. Project Completion Report; 2016–2017.
- ¹⁷ Brissette, C. *In prep.* Graves Creek Pilot Habitat Enhancement Project. Two-year, post-runoff technical review of substrate changes.
- ¹⁸ Brissette, C. *In prep.* Upper Prospect Creek LWD Project. Two-year, post-runoff technical review of physical habitat and substrate changes.

- ¹⁹ Olson, B., and J. Blakney. *In prep.* Lower Clark Fork Stream Restoration Summary 1995–2020. Comprehensive Project Report.
- ²⁰ Rossel, C. *In prep.* Mainstem Bull River Reforestation on Forest Service Lands and NEPA Process. Project Completion Report.
- ²¹ River Design Group. 2020. Crow Creek Phase 2 Restoration Project 2019 As-built monitoring report. Avista document identification number 2020-0228.
- ²² Avista. *In prep.* East Fork Bull River Beaver Management Plan memorandum.
- ²³ LCFWG (Lower Clark Fork Watershed Group). *In prep.* East Fork Bull River Revegetation Site Plan.
- ²⁴ Avista. *In prep.* East Fork Bull River Flow management assessment and recommendations memorandum.
- ²⁵ Blakney, J., Kreiner, R. and T. Tholl. *In prep.* Noxon and Cabinet Gorge Reservoirs Fisheries Monitoring. Annual Project Update: 2017.
- ²⁶ Kreiner, R., M. Terrazas, and T. Tholl. 2020. Noxon Rapids and Cabinet Gorge Reservoirs Fisheries Monitoring Comprehensive Project Report: 2016-2018 Including Data From: 1999-2018. Avista document identification number 2020-0023.
- ²⁷ Blakney, J., Kreiner, R., and T. Tholl. *In prep.* Noxon and Cabinet Gorge Reservoirs Fisheries Monitoring. Annual Project Update: 2019.
- ²⁸ Blakney, J., Kreiner, R., and T. Tholl. *In prep.* Noxon and Cabinet Gorge Reservoirs Fisheries Monitoring. Annual Project Update: 2020.
- ²⁹ Kusnierz, P. *In prep.* Eurasian Watermilfoil as fish habitat. Project Completion Report.
- ³⁰ Blakney, J., R. Kreiner, J. Dukovic, M. Terrazas, and T. Tholl. *In prep.* Mountain Lakes Fisheries Monitoring Project, Comprehensive Project Report: 2016-2020.
- ³¹ Pinnacle Research and Consulting. 2020. 2020 Clark Fork Recreation Site Visitation. Avista document identification number 2020-0253.

6.3 Fish Passage/Native Salmonid Restoration Plan (License Article 406 – CFSA Appendix C)

6.3.1 Purpose and Resource Benefit

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 the resource benefit is “to increase the long-term population viability of native Salmonids in the Lake Pend Oreille (LPO)-lower Clark Fork River system” (FERC License Article 406). This goal is accomplished through the aggressive implementation of the Clark Fork River Native Salmonid Restoration Plan (NSRP).

6.3.2 2020 Annual Implementation Plan Project Plans

Annual Operations

- Upstream Fish Passage Program
 - ***Variance*** ^{1, 2, 3, 4, 5, 6, 7, 8, 9, 10}; see Section 6.3.4
- Graves Creek and East Fork Bull River Genetic Study
 - ***Completed per 2020 AIP*** ¹
- Tributary Trapping and Downstream Juvenile Bull Trout Transport Program
 - ***Variance*** ^{1, 11, 12}; see Section 6.3.4
- PIT-Monitoring Station Operation and Maintenance
 - ***Completed per 2020 AIP*** ¹
- Bull Trout Emigration Study
 - ***Completed per 2020 AIP*** ¹
- East Fork Bull River Bedload Sediment Sampling 2016–2020
 - ***Completed per 2020 AIP*** ^{1, 13, 14}
- Redd Surveys in Montana Tributaries
 - ***Completed per 2020 AIP*** ^{1, 15, 16}
- Non-Native Fish Suppression Project in the East Fork Bull River
 - ***Variance*** ^{1, 17}; see Section 6.3.4
- Evaluation of Potential Actions for Reducing Non-native Threats to Native Salmonid Populations
 - ***Variance*** ^{1, 18}; see Section 6.3.4

Facilities

- Fish Capture Facilities Operation, Development, and Testing
 - **Variance**^{1, 19, 20, 21, 22}; see Section 6.3.4
- Graves Creek Permanent Weir Trap Enhancements
 - **Variance**¹; see Section 6.3.4

6.3.3 Other 2020 Activities

- July 31, 2020 request for an additional \$55,000 from the Appendix C, “Facilities Fund” for construction of the Graves Creek Fish Handling Facility (CFSA Appendix C; approved on August 14, 2020).
 - **Completed per Consent Mail**^{1, 23}
- October 5, 2020 Appendix C – Cabinet Gorge Fish Handling Facility Modifications (CFSA Appendix C; approved on October 19, 2020).
 - **Completed per Consent Mail**^{1, 20}

6.3.4 Projects with Significant Variances

Project Plan	Variances
Upstream Fish Passage Program	<p>Night electrofishing efforts were reduced due to COVID-19 concerns.</p> <p>The Upstream Fish Passage Program Comprehensive Project Report (2001–2019) was due in December and will be completed in 2021.</p> <p>The Clark Fork River Westslope Cutthroat Trout Experimental Transport Program Comprehensive Project Report was due in September and will be completed in early 2021.</p> <p>The Bozeman Fish Health Center steroid hormone report was due in April and completed in August.</p>
Tributary Trapping and Downstream Juvenile Bull Trout Transport Program	<p>Tributary traps were not operated on weekends during the spring trapping season due to personnel constraints related to COVID-19 protocols.</p> <p>The 2018 and 2019 reports for this program were not completed during 2020. In their place, a Comprehensive Project Report including a Graves Creek Monitoring and Evaluation Plan report (appendix within the former) covering 2018–2020 will be completed by July 2021.</p> <p>The truck gear organizer was deemed unnecessary and will not be purchased.</p>

Project Plan	Variances
Tributary Trapping and Downstream Juvenile Bull Trout Transport Program (continued)	<p>The East Fork Bull River north channel thermograph was not deployed during 2020 but will be deployed in 2021.</p> <p>Real-time flow monitoring equipment has been delayed so that it can be integrated in concert with the enhancements to the permanent weir trap and PIT-monitoring station. Similarly, the Graves Creek Monitoring and Evaluation Plan will be evaluated and updated by the Aquatic Implementation Team as necessary during 2021 so that considerations regarding enhancements to the trap and PIT-monitoring station can be integrated.</p>
Non-Native Fish Suppression Project in the East Fork Bull River	<p>The preliminary assessment will not be completed. The Project Completion Report, Non-Native Fish Suppression Project in the East Fork Bull River (2007–2020 data) was not completed in 2020. The report will be finalized by November 1, 2021.</p>
Evaluation of Potential Actions for Reducing Non-native Threats to Native Salmonid Populations	<p>Work on this project including compilation of past data and listing and evaluating potential actions for a technical memorandum was not completed in 2020 due to staff turnover. Activities to compile data and develop potential actions into a technical memorandum will be completed in 2021.</p>
Fish Capture Facilities Operation, Development, and Testing	<p>FERC concerns related to the stability of the thrust block, thrust block extension, and structure excavation resulted in an initial three-month and ultimately a six-month overall delay to the project due to the nature of the limited work window during spill season.</p> <p>Damage to the cofferdam sheet piles during high flows in the spring of 2020 resulted in additional delays to the CGDF construction schedule.</p> <p>Consent mail requesting additional funds for construction of modifications to the Cabinet Gorge Fish Handling Facility was approved by the MC.</p>
Graves Creek Permanent Weir Trap Enhancements	<p>Development of the revegetation site plan was intentionally delayed until all ground disturbing work has been completed to better inform the plan. It is now scheduled to be complete by October 21, 2021.</p>

6.3.5 Key 2020 References

¹ Bernall, S., E. Oldenburg, and S. Moran. 2020. Fish Passage/Native Salmonid Restoration Plan Appendix C, 2020 Annual Work Summary. Avista document identification number 2020-0251.

² Bernall, S., K. Duffy, and J. Johnson. *In prep.* Upstream Fish Passage Program. Comprehensive Project Report (2001–2019).

- ³ Bernall, S., K. Duffy and J. Johnson. *In prep.* Upstream Fish Passage Program. Annual Project Update – 2020.
- ⁴ Bernall, S., and J. Johnson. *In prep.* Clark Fork River Westslope Cutthroat Trout Experimental Transport Program. Comprehensive Project Report (2015–2018).
- ⁵ Adams, B., M. Piteo, and J. Von Bargen. 2020. Genetic Analysis of Native Salmonids from the Lake Pend Oreille and Clark Fork River System, Idaho and Montana. Annual Report for Calendar Year 2019. Avista document identification number 2020-0165.
- ⁶ Adams, B., M. Piteo, and J. Von Bargen. *In prep.* Genetic Analysis of Native Salmonids from the Lake Pend Oreille and Clark Fork River System, Idaho and Montana. Annual Report for Calendar Year 2020.
- ⁷ Sprague, L. 2020. 2019 Survey for Selected Fish Pathogens in the Lower Clark Fork River and Lake Pend Oreille in Idaho. Avista document identification number 2020-0067.
- ⁸ Sprague, L. *In prep.* 2020 Survey for Selected Fish Pathogens in the Lower Clark Fork River and Lake Pend Oreille in Idaho.
- ⁹ Webb, M. and H. Treanor. 2020. Determination of Plasma Sex Steroid Concentrations to Assign Sex and Stage of Maturity in Westslope Cutthroat Trout. Avista document identification number 2020-0175.
- ¹⁰ Avista. Passive Integrated Transponder (PIT) Tag Database; for more information on this database contact Shana Bernall (Shana.Bernall@avistacorp.com).
- ¹¹ Oldenburg, E. W. *In prep.* Tributary Trapping and Downstream Juvenile Bull Trout Transport Program. Comprehensive Project Report - 2018–2020. (includes Graves Creek permanent weir trap monitoring and evaluation plan report as an appendix).
- ¹² Avista. Database for Temperature Monitoring Data Compilation; for more information on this database contact Paul Kusnierz (Paul.Kusnierz@avistacorp.com).
- ¹³ USFS. *In prep.* Water - Temperature - Bed Sediment - Data Report, WY 2020, East Fork of the Bull River – Noxon, Montana.
- ¹⁴ Boyd, J. and C. Neesvig. 2020. East Fork Bull River Fluvial Sediment Summary Report. Avista document identification number 2020-0224.
- ¹⁵ Moran, S. 2020. Lower Clark Fork River, Montana – Avista Project Area – 2019 Annual Bull Trout and Brown Trout Redd Survey. Annual Project Update. Avista document identification number 2020-0095.
- ¹⁶ Moran, S. *In prep.* Lower Clark Fork River, Montana – Avista Project Area – 2020 Annual Bull Trout and Brown Trout Redd Survey. Annual Project Update.

- ¹⁷ Moran, S., P. Kusnierz, and J. Storaasli. *In prep.* Non-Native Fish Suppression Project in the East Fork Bull River Drainage, Montana 2007–2020. Project Completion Report.
- ¹⁸ Blakney, J., K. Aceituno, and S. Moran. *In prep.* Evaluation of Potential Actions for Reducing Non-native Threats to Native Salmonid Populations.
- ¹⁹ Avista. 2020. Consent Mail approval of 2019 Avista CFSA Annual Budget Report, 2020 Aquatic Annual Implementation Plans, 2020 Terrestrial Annual Implementation Plans, 2020 Clark Fork Heritage Resource Program Annual Implementation Plan, and Appendix D Implementation Plan for the Bull Trout Protection and Public Education Project 2020-2024 (March 23, 2020). Avista document identification number 2020-0070.
- ²⁰ Avista. 2020. Consent Mail approval of Appendix C – request for Cabinet Gorge Fish Handling Facility Modifications (October 19, 2020). Avista document identification number 2020-0188.
- ²¹ Bernall, S. 2020. E-mail correspondence regarding the Cabinet Gorge Dam Fishway Cofferdam Fish Salvage Plan. Avista document identification number 2020-0206.
- ²² Avista. 2020. E-mail correspondence providing the MC quarterly updates on the progress of the Cabinet Gorge Dam Fishway construction project. Avista document identification number 2020-0250.
- ²³ Avista. 2020. Consent Mail approval of Appendix C – request for an additional \$55,000 from the Appendix C, “Facilities Fund” for construction of the Graves Creek Fish Handling Facility (August 14, 2020). Avista document identification number 2020-0150.

6.4 Bull Trout Protection and Public Education Project (License Article 407 – CFSA Appendix D)

6.4.1 Purpose and Resource Benefit

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 project will increase the numbers and population viability of Bull Trout by reducing intentional and incidental illegal harvest. In addition, the project increases public awareness on Bull Trout life history, habitat needs, identifying characteristics, and the potential for adverse impacts due to land use and other human activities.

6.4.2 2020 Annual Implementation Plan Project Plans

- Idaho Bull Trout Protection and Education Officer Support
 - *Variance¹; see Section 6.4.3*
- Montana Bull Trout Education and Communication Support
 - *Variance¹; see Section 6.4.3*
- Montana Bull Trout Education Outreach Support
 - *Variance¹; see Section 6.4.3*
- Montana Game Warden Support
 - *Variance¹; see Section 6.4.3*
- Bull Trout Booth Events and Education Outreach
 - *Variance¹; see Section 6.4.3*
- Trout and About Festival Support
 - *Variance¹; see Section 6.4.3*
- Trout Unlimited Website and Social Media Support
 - *Variance¹; see Section 6.4.3*
- Bull Trout Education Promotional Items
 - *Variance¹; see Section 6.4.3*
- Interpretive Signs and Kiosk Component for Trestle Creek Education Center
 - *Completed per 2020 AIP¹*
- Draft Five-Year Implementation Plan (2020-2024)
 - *Completed per 2020 AIP^{1, 2}*

6.4.3 Projects with Significant Variances

Project Plan	Variances
Idaho Bull Trout Protection and Education Officer Support	COVID-19 concerns impacted the number of patrols and angler contacts and resulted in the cancellation of outreach at field trips, festivals, and events throughout 2020. Upgrade of signs including the small sign in the IDFG office were not addressed due to the need to develop online outreach materials; these upgrades will be addressed in 2021.
Montana Bull Trout Education and Communication Support	Unforeseen additional radio announcement costs were met by reducing the online advertising component by \$1,000. The online Bull Trout identification test was being redesigned in 2020 and was unavailable to monitor testing results. This site is anticipated to be available in the spring of 2021.
Montana Bull Trout Education Outreach Support	Multiple outreach tasks were not completed due to the COVID-19 pandemic; including, Kid's Fishing Day and outreach at the Huckleberry Festival and Sanders County Fair. No improvements to the Bull Trout Trailer were made, and no tributaries were signed to deter swimming hole dams. Improvements to the Bull Trout Trailer and installation of signs to deter swimming hole type dams will be performed in 2021.
Montana Game Warden Support	Implementation staff transferal to another workstation mid-season and COVID-19 constraints precluded completion of multiple tasks under this project, including reviewing and adjusting enforcement plans, sharing patrols with IDFG, patrolling at the typical frequency and contacting a comparable number of anglers, deploying remote cameras and monitoring for swimming hole dams. Continuation of this project in 2021 will be at a part-time basis by a warden from an adjacent workstation until the warden position is re-filled.
Bull Trout Booth Events and Education Outreach	All booth events were cancelled due to COVID-19 restrictions. Restructuring of Panhandle Chapter Trout Unlimited project plans in 2021 will enable multiple outreach events to be coordinated under the Trout Unlimited Outreach Coordination Project Plan. Bull Trout educational materials were not supplied to Aquatic Invasive Species check stations and other venues in 2020 but are anticipated to be distributed in 2021.
Trout and About Festival Support	The festival was cancelled due to the COVID-19 pandemic. The Trout Unlimited Outreach Coordination 2021 Project Plan is anticipated to allow outreach at multiple local events; however, dedicated project support for this event has been discontinued.
Trout Unlimited Website and Social Media Support	Turnover at the Project Administrator position prevented this project from being completed in full. The principle task not addressed was developing an alternate slogan and site name as the slogan "Take No Bull" is linked to a line of clothing, which dominated search engines, requiring the site developer to continually update the site. This is anticipated to be addressed in 2021.

Project Plan	Variances
Bull Trout Education Promotional Items	Promotional and raffle items were not distributed at booth events or Trout and About Festival because those events were cancelled due to the COVID-19 pandemic.

6.4.4 Key 2020 References

¹ Masin, D., K. Bouwens, D. Tabish, M. Terrazas, T. Hinck, M. Post, R. Crawford, and S. Moran. 2020. Bull Trout Protection and Public Education Project (Appendix D). 2020 Annual Work Summary. Avista document identification number 2020-0245.

² Avista. 2020. Implementation Plan for the Bull Trout Protection and Public Education Project 2020–2024. Avista document identification number 2020-0211.

6.5 Watershed Councils Program (License Article 408 – CFSA Appendix E)

6.5.1 Purpose and Resource Benefit

The purpose of this program is to facilitate the protection and restoration of tributary stream habitat in the Lake Pend Oreille (LPO)-lower Clark Fork River watershed. This will improve conditions for aquatic life, including macroinvertebrate communities and native fish species (Bull Trout, Westslope Cutthroat Trout, and Mountain Whitefish). The associated protection and enhancement of tributary streams and the aquatic life inhabiting them will serve as mitigation and resource enhancements to offset impacts to aquatic life due to continued power peaking operation of the Cabinet Gorge and Noxon Rapids projects.

6.5.2 2020 Annual Implementation Plan Project Plans

- Pack River Watershed Council, Bonner Soil and Water Conservation District
 - *Variance*^{1,2,3}; see Section 6.5.3
- Lower Clark Fork Watershed Council Projects
 - *Variance*^{1,4}; see Section 6.5.3

6.5.3 Projects with Significant Variances

Project Plan	Variances
Pack River Watershed Council, Bonner Soil and Water Conservation District	COVID-19 constraints resulted in the cancellation of educational outreach at events including, The Fly Fishing Film Festival, the S.T.R.E.A.M. event at Farmin Stidwell Elementary School, Waterlife Discovery Field Trips, and the 25 th Annual Pend Oreille Water Festival. The Pack River Watershed Council will work with cooperators to develop online curriculum for online outreach and virtual meetings in 2021.
Lower Clark Fork Watershed Council Projects	COVID-19 constraints resulted in the cancellation of the 1 st and 2 nd quarterly meetings with cooperators and targeted outreach efforts to local landowners. The Lower Clark Fork Watershed Group will continue to hold online meetings and reinstitute landowner outreach in 2021.

6.5.4 Key 2020 References

¹ Erickson, J., S. Garcia, and B. Olson. 2020. Watershed Councils Program (Appendix E). 2020 Annual Work Summary. Avista document identification number 2020-0246.

² Pack River Watershed Council. 2020. The River Ranger. Volume 12, Issue 1. Avista Document Number 2020-0229.

³ GeoEngineers. 2020. Habitat Prioritization Evaluation for McCormick Creek and Upper Pack River. Avista Document number 2020-0171.

⁴ Olson, B. 2020. Public webpage for the Lower Clark Fork Watershed Group.
<https://lowerclarkforkwatershedgroup.org/> (December 2020).

6.6 Clark Fork River Water Quality Monitoring Program (License Article 409 – CFSA Appendix F1)

6.6.1 Purpose and Resource Benefit

The purpose of this program is to provide for the systematic, long-term water quality monitoring of nutrients and metals in the Avista project area. Excessive nutrient loading and metals represent high-priority water quality concerns in the LPO-lower Clark Fork River system. Resource benefits are accomplished through providing valuable information on trends in water quality associated with the project and their reported role as nutrient and/or metals retention “sinks.”

6.6.2 2020 Annual Implementation Plan Project Plans

- Clark Fork River Water Quality Monitoring Program
 - *Variance*^{1, 2, 3, 4}; see Section 6.6.3

6.6.3 Projects with Significant Variances

Project Plan	Variances
Clark Fork River Water Quality Monitoring Program	The 2019 nutrient loads technical memorandum was completed in July rather than by June 1 and the 2019 Annual Project Update was completed in November rather than by July 30.

6.6.4 Key 2020 References

¹ Kusnierz, P. 2020. Clark Fork River Water Quality Monitoring Program Appendix F1 2020. Annual Work Summary. Avista document identification number 2020-0248.

² Osborne, L. 2020. Estimate of 2019 nutrient loads from the Clark Fork River into Lake Pend Oreille. Avista document identification number 2020-0133.

³ Clark Fork Coalition. 2020. Annual water quality and benthic algae monitoring results for the Clark Fork River basin 2019. Annual Project Update. Avista document identification number 2020-0226.

⁴ Clark Fork Coalition. *In prep.* Annual water quality and benthic algae monitoring results for the Clark Fork River basin 2020.

6.7 Monitoring of Noxon Reservoir Stratification and Mobilization of Sediment Nutrients/Metals (License Article 410 – CFSA Appendix F2)

6.7.1 Purpose and Resource Benefit

The purpose of this measure is to provide for monitoring of Noxon Reservoir during periods when reservoir stratification is possible. If the reservoir stratifies, the program will intensify monitoring of nutrient and metals levels. Resource benefits are accomplished through providing a better understanding of whether nutrients and/or metals in the reservoir sediments are released into the water during periods of low flow and/or high water temperature.

6.7.2 2020 Annual Implementation Plan Project Plans

- Monitoring of Noxon Reservoir Stratification and Mobilization of Sediment Nutrients/Metals
 - *Completed per 2020 AIP*^{1, 2, 3}

6.7.3 Key 2020 References

¹ Kusnierz, P. 2020. Monitoring of Noxon Reservoir Stratification and Mobilization of Sediment Nutrients/Metals Appendix F2 2020. Annual Work Summary. Avista document identification number 2020-0227.

² U.S. Geological Survey. National Water Information System. 12389000 Clark Fork near Plains MT. Available:
https://nwis.waterdata.usgs.gov/mt/nwis/uv/?cb_00060=on&cb_00065=on&format=gif_default&site_no=12389000&period=&begin_date=2020-07-01&end_date=2020-09-30
(November 2020).

³ HydroSolutions. *In prep*. Monitoring of Noxon Reservoir Stratification and Mobilization of Sediment Nutrients/Metals.

6.8 Aquatic Organism Tissue Analysis (License Article 411 – CFSA Appendix F3)

6.8.1 Purpose and Resource Benefit

The purpose of this PM&E measure is to ensure that resources are available to monitor aquatic organisms for the presence of heavy metals and/or other substances of concern. It provides funding to collect fish and other aquatic organism tissue samples. These samples are analyzed to determine the presence of heavy metals or other substances. Resource benefits are accomplished through providing information that can be used to develop and refine fish consumption advisories.

6.8.2 2020 Annual Implementation Plan Project Plans

- Noxon and Cabinet Gorge Reservoirs Fish Mercury Study 2020.
 - *Variance*^{1, 2, 3, 4}; see Section 6.8.3

6.8.3 Projects with Significant Variances

Project Plan	Variances
Noxon and Cabinet Gorge Reservoirs Fish Mercury Study 2020	No sampling occurred in 2020 due to COVID-19 concerns. The project is anticipated to be delayed by one year with sampling occurring in 2021.

6.8.4 Key 2020 References

¹ Kusnierz, P. 2020. Aquatic Organism Tissue Analysis Appendix F3 2020. Annual Work Summary. Avista document identification number 2020-0249.

² MFWP. *In prep.* Lab report on fish tissue analysis.

³ MFWP. *In prep.* Comprehensive Project Report.

⁴ MFWP. *In prep.* Montana fish consumption guidelines.

6.9 Water Quality Protection and Monitoring Plan for Maintenance, Construction and Emergency Activities (License Article 412 – CFSA Appendix F4)

6.9.1 Purpose and Resource Benefit

The purpose of this PM&E measure is to develop and implement a plan that minimizes the impact of project-related maintenance, construction, and emergency activities to the LPO-lower Clark Fork River water quality. The Water Quality Protection and Monitoring Plan for Maintenance, Construction, and Emergency Activities at the Cabinet Gorge and Noxon Rapids Hydroelectric Developments (HED) was developed in 2002 and updated in 2011. The resource benefit is accomplished through water quality, resource protection, and monitoring actions that will be implemented in the event of unforeseen and sudden changes to project operations due to emergencies.

6.9.2 2020 Annual Implementation Plan Project Plans

- Water Quality Protection and Monitoring Plan for Maintenance, Construction, and Emergency Activities
 - **Variance** ^{1, 2, 3, 4, 5, 6}; see Section 6.9.3

6.9.3 Projects with Significant Variances

Project Plan	Variances
Water Quality Protection and Monitoring Plan for Maintenance, Construction, and Emergency Activities	The internal Avista Hydro Generation and Production and Environmental Affairs annual coordination meeting was cancelled due to COVID-19 concerns. However, frequent informal communication served this purpose and all appropriate communications occurred.

6.9.4 Key 2020 References

¹ Oldenburg, E. W. 2020. Water Quality Protection and Monitoring Plan for Maintenance, Construction, and Emergency Activities 2020 Annual Work Summary. Avista document identification number 2020-0264.

² Avista. 2020. Email exchange between Eric Oldenburg and Steve Lentini regarding Compliance with General Operating Limits and 2020 operations. Avista document identification number 2020-0221.

³ Avista. 2010. Water Quality Protection and Monitoring Plan for Maintenance, Construction and Emergency Activities. Avista document identification number 2011-0140.

⁴ Avista. 2020. Designated contacts for notification purposes under the Water Quality Protection and Monitoring Plan (August 2020). Avista document identification number 2020-0144.

⁵ Avista. 2020. Memoranda and associated information pertaining to deviations from the Cabinet Gorge Dam General Operating Limit for minimum flow in association with Cabinet Gorge Dam Fishway cofferdam construction. Avista document identification number 2020-0159.

⁶ Avista. 2020. Email exchange between Eric Oldenburg and Pat Maher regarding communications with the U.S. Army Corps of Engineers at Albany Falls. Avista document identification number 2020-0222.

6.10 Dissolved Gas Supersaturation Control, Mitigation, and Monitoring (License Article 413 – CFSA Appendix F5)

6.10.1 Purpose and Resource Benefit

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 LPO-lower Clark Fork River system related to spill at the Clark Fork Projects. Resource benefits are accomplished through reducing total dissolved gas (TDG) and mitigating for the potential effects of excess TDG on fish in the Clark Fork River downstream of Cabinet Gorge Dam and in LPO.

6.10.2 2020 Annual Implementation Plan Project Plans

Operations

- Operations
 - *Completed per 2020 AIP ¹*

TDG Monitoring

- Total Dissolved Gas Monitoring
 - *Completed per 2020 AIP ^{1, 2, 3, 4}*

TDG Mitigation and Monitoring Program

- Project Scoping Allocation
 - *Completed per 2020 AIP ¹*
- Analysis of Gas Bubble Disease Monitoring Data
 - *Completed per 2020 AIP ^{1, 5, 6}*
- Lake Pend Oreille Experimental Walleye Angler Incentive Program
 - *Completed per 2020 AIP ^{1, 7, 8}*
- Lake Pend Oreille/Clark Fork River Walleye Population Assessment
 - *Completed per 2020 AIP ^{1, 7, 8}*
- Lake Pend Oreille Lake Trout Angler Incentive Program
 - *Completed per 2020 AIP ^{1, 7, 8}*
- Lake Pend Oreille Lake Trout Netting Program
 - *Completed per 2020 AIP ^{1, 7, 8}*
- Demography of Adfluvial Bull Trout in Lake Pend Oreille
 - *Variance ^{1, 9}; see Section 6.10.3*

- Lake Pend Oreille Bull Trout Survival Study
 - *Variance*^{1, 4, 10}; see Section 6.10.3
- Lake Pend Oreille Nearshore Index Netting
 - *Variance*^{1, 11}; see Section 6.10.3
- Box Canyon Reservoir Northern Pike Suppression
 - *Variance*^{1, 12, 13}; see Section 6.10.3
- Lake Pend Oreille Tributary Creel
 - *Completed per 2020 AIP*^{1, 14}
- Trophic and Phytoplankton Monitoring in Lake Pend Oreille Idaho
 - *Variance*¹; see Section 6.10.3
- Temperature Monitoring Data Compilation
 - *Variance*^{1, 4}; see Section 6.10.3
- Walleye Geochemistry Study
 - *Variance*^{1, 15}; see Section 6.10.3
- Priest River Coldwater Bypass Limnology Assessment
 - *Variance*^{1, 16}; see Section 6.10.3
- Idaho Protection and Education Officer Support
 - *Variance*¹; see Section 6.10.3

GSCP Alternative

- Gas Supersaturation Control Program Total Dissolved Gas Abatement
 - *Completed per 2020 AIP*^{1, 17}

6.10.3 Projects with Significant Variances

Project Plan	Variances
Demography of Adfluvial Bull Trout in Lake Pend Oreille	<p>The IDFG Project Completion Report was not completed in 2020. The new due date is August 1, 2021.</p> <p>The submission of model and results in a peer reviewed journal did not occur in 2020. The new submission date is December 1, 2021.</p>
Lake Pend Oreille Bull Trout Survival Study	<p>Temperature data were not received until December due to temperature data loggers being retrieved after November 1.</p> <p>The IDFG Project Completion Report was not completed by the due date of November 1, 2020. The new due date is November 1, 2021.</p>

Project Plan	Variances
Lake Pend Oreille Nearshore Index Netting	The IDFG Project Completion Report was not completed in 2020. The new due date is December 1, 2021.
Box Canyon Reservoir Northern Pike Suppression	The 2020 netting effort was reduced from the planned five weeks to two weeks in 2020 due to COVID-19. Three weeks will be added to the 2021 Northern Pike suppression effort to address both the shortened 2020 season and the observed increase in Northern Pike catch from the 2019 season. The 2020 Annual Project Update was completed in December rather than November.
Trophic and Phytoplankton Monitoring in Lake Pend Oreille Idaho	Total Phosphorus and total dissolved phosphorus data from the July and August monitoring events did not meet data quality objectives, so the data were rejected. Deficiencies were significant and they originated at the laboratory. Low-level phosphorus deficiencies could not be corrected before the September sample event, so the September event was canceled. If low-level phosphorus deficiencies are not corrected by next year, a different lab will be used for the 2021 monitoring season. Chlorophyll-a samples were analyzed by a different laboratory.
Temperature Monitoring Data Compilation	The database update was not completed in 2020. The new due date for the updated database is December 1, 2021.
Walleye Geochemistry Study	The Project Completion Report or manuscript for publication was not completed by Mainstem Fish Research and Pacific Northwest National Laboratory in 2020. The new due date is July 1, 2021.
Priest River Coldwater Bypass Limnology Assessment	The analysis has not been performed, and as such the Limnology assessment report written by the consultant (Advanced Eco-Solutions) due November 1, 2020 was not completed. The new due date for the assessment report is November 1, 2021. The temperature data collected for this project was not received by the November 1, 2020 due date and has been given a new due date of December 1, 2021.
Idaho Protection and Education Officer Support	The COVID-19 pandemic resulted in the cancellation of all student field trips and festivals normally completed under this program's tasks. Alternative educational outreach was performed and included producing fisheries handouts for local teachers, developing an educational film to be posted on-line, in-person talks at the Trestle Creek interpretation site during kokanee spawning, and one unplanned field trip at the Waterlife Discovery Center.

6.10.4 Key 2020 References

- ¹ Bouwens, K., A. Ransom, P. Kusnierz, E. Oldenburg, S. Harvey, N. Bean, and K. Lowell.
2020. Dissolved Gas Supersaturation Control, Mitigation, and Monitoring Appendix F5
2020. Annual Work Summary. Avista document identification number 2020-0262.

- ² Kusnierz, P. 2020. Total dissolved gas monitoring with COVID-19 restrictions. Email to the Gas Supersaturation Subcommittee, March 30, 2020. Avista document identification number 2020-0048.
- ³ Kusnierz, P. 2020. Total Dissolved Gas Monitoring 2020 Cabinet Gorge and Noxon Rapids Dams. Memorandum to the Gas Supersaturation Subcommittee, October 9, 2020. Avista Avista document identification number 2020-0187.
- ⁴ Avista. Database for Temperature Monitoring Data Compilation; for more information on this database contact Paul Kusnierz (Paul.Kusnierz@avistacorp.com).
- ⁵ Kusnierz, P. 2020. Analysis of gas bubble disease monitoring data. Annual Project Update – 2019. Avista document identification number 2020-0049.
- ⁶ Kusnierz, P. 2020. Analysis of gas bubble disease monitoring data. Annual Project Update – 2020. Avista document identification number 2020-0209.
- ⁷ Ransom, A., S. Frawley, N. Mucciarone, P. Rust, R. Jakubowski, and K. A. Bouwens. 2020. 2019 Lake Pend Oreille Predator Management Program Project Update. Annual Project Update. Avista document identification number 2020-0164.
- ⁸ Ransom, A., P. Rust, R. Jakubowski, and K. A. Bouwens. *In prep.* 2020 Lake Pend Oreille Predator Management Program Project Update.
- ⁹ Mucciarone, N., M. Corsi, M. Hurley, J. McCormick, E. Roche, K. A. Bouwens, and P. Kusnierz. *In prep.* Population dynamics of adfluvial Bull Trout in Lake Pend Oreille. Project Completion Report.
- ¹⁰ Ransom, A., R. Jakubowski, and K. A. Bouwens. *In prep.* 2011–2019 Lake Pend Oreille Bull Trout Survival Study. Project Completion Report.
- ¹¹ IDFG. *In prep.* 2019 Lake Pend Oreille nearshore spring index netting survey. Project Completion Report.
- ¹² Harvey, S., and N. Bean. 2020. Box Canyon Reservoir Northern Pike Suppression Project. Annual Project Update 2020. Avista document identification number 2020-0260.
- ¹³ Harvey, S., and N. Bean. *In prep.* Box Canyon Reservoir Northern Pike Suppression Project. Comprehensive Project Report 2012–2021.
- ¹⁴ Bouwens, K. A., and R. Jakubowski. 2020. 2018 Lake Pend Oreille Tributary Creel Survey. Project Completion Report. Avista document identification number 2020-0166.
- ¹⁵ Mainstem Fish Research and Pacific Northwest National Laboratory. *In prep.* Walleye geochemistry Study. Project Completion Report or manuscript for publication.

¹⁶ Advanced Eco-Solutions, Inc. *In prep.* Priest River Coldwater Bypass Limnology Assessment.

¹⁷ Avista. 2020. Gas Supersaturation Subcommittee Meeting Notes, Wednesday, January 15, 2020. Avista document identification number 2020-0029.

6.11 Project Operations Package (License Article 429/430/431 – CFSA Appendix T)

6.11.1 Purpose and Resource Benefit

The purpose of this PM&E measure package is to mitigate for the impacts of maintaining flexibility of project operations. This is to be accomplished by implementing measures that enhance native salmonids and provide recreational fishery opportunities. Most of these implementation measures are addressed in other sections of this report; they primarily concern PM&E measures identified in CFSA appendices A, B, D, and E.

The Project Operations Package also establishes general operating limits for the Clark Fork Project and requires Avista to communicate to Albeni Falls, a downstream U.S. Army Corps of Engineers project, forecasts of daily discharge from Cabinet Gorge Dam.

6.11.2 2020 Annual Implementation Plan Project Plans

- Project Operations and Coordination
 - *Completed per 2020 AIP*^{1, 2, 3, 4, 5, 6, 7, 8, 9}
- Cabinet Gorge Fish Hatchery Spring Water Collection System Upgrade
 - *Variance*^{1, 10}; see Section 6.11.3

6.11.3 Projects with Significant Variances

Project Plan	Variances
Cabinet Gorge Fish Hatchery Spring Water Collection System Upgrade	The project team decided to obtain more information about the current spring water collection basin and substrate at the project site prior to moving forward with final design and construction of an improved spring water collection system. The team continued to gather data and develop final design in 2020. Due to the complexity of the project and impacts to the hatchery operation the project will be completed in 2022.

6.11.4 Key 2020 References

¹ Oldenburg, E., K. Bouwens, and S. Bernall. 2020. Appendix T 2020 Annual Work Summary. Avista document identification number 2020-0265.

² U.S. Geological Survey. 2020. National Water Information System. 12391950 Clark Fork River below Cabinet Gorge Dam ID. Available: [USGS Current Conditions for USGS 12391950 CLARK FORK RIVER BELOW CABINET GORGE DAM ID](#) (December 2020).

³ Avista. 2010. Water Quality Protection and Monitoring Plan for Maintenance, Construction and Emergency Activities. Avista document identification number 2011-0140.

- ⁴ FERC. 2019. Order Amending License and Approving Exhibits A and F (August 8, 2019). Avista document identification number 2019-0175.
- ⁵ Avista. 2017. Letter outlining the one-time Avista funding commitment to CFSA Appendix T. Avista document identification number 2017-0432.
- ⁶ FERC. 2017. Order amending minimum flow pursuant to Article 429. Avista document identification number 2017-0382.
- ⁷ Avista. 2020. Email exchange between Eric Oldenburg and Pat Maher regarding communications with the U.S. Army Corps of Engineers at Albeni Falls. Avista document identification number 2020-0222.
- ⁸ Avista. 2020. Email exchange between Eric Oldenburg and Steve Lentini regarding Compliance with General Operating Limits and 2020 operations. Avista document identification number 2020-0221.
- ⁹ Avista. 2020. Memoranda and associated information pertaining to deviations from the Cabinet Gorge Dam General Operating Limit for minimum flow in association with Cabinet Gorge Dam Fishway cofferdam construction. Avista document identification number 2020-0159.
- ¹⁰ RivHab. 2020. Cabinet Gorge Hatchery Spring Water Collection Summary of Work Alternatives. Avista document identification number 2020-0208.

Section 7: Terrestrial Resources PM&E Measures Implementation Efforts

7.1 Implementation of Land Use Management Plan (License Article 414 – CFSA Appendix G)

7.1.1 Purpose and Resource Benefit

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 the implementation of the Land Use Management Plan (LUMP). Avista project lands are managed to protect these qualities while still allowing for reasonable public access and other compatible uses.

7.1.2 2020 Annual Implementation Plan Project Plans

Administration of the Land Use Management Plan (LUMP)

- Continue to implement the Private Recreation Permit Program.
 - *Completed per 2020 AIP¹*
- Continue to address property ownership/trespass issues as they arise.
 - *Completed per 2020 AIP¹*
- Continue to process requests for leases/easements of Avista Project property.
 - *Completed per 2020 AIP¹*
- If a request is received, review and process Rock Creek Mine request to place discharge pipe across Project lands.
 - *Completed per 2020 AIP¹*
- Ongoing coordination of land use management program among Terrestrial Resource Technical Advisory Committee, Sanders County, and Green Mountain Conservation District, and the cultural resources, wildlife, recreation, aesthetics, and erosion programs.
 - *Completed per 2020 AIP¹*
- Continue implementation of the Pesticide and Herbicide Use Plan in consultation with the MC.
 - *Completed per 2020 AIP¹*
- The Land Use Subgroup and other interested parties will complete the 5-year review and update of the LUMP, incorporating information included in the completed Recreation Resource Management Plan update.
 - *Variance¹; see Section 7.1.3*

- The Special Uses Subgroup and other interested parties will evaluate new requests for special use permits by private, and for profit rental companies to use Avista owned and managed recreation areas as needed.
 - *Completed per 2020 AIP ¹*
- Continue to participate on the Sanders County Aquatic Invasive Plants Task Force (AIPTF) to implement an Integrated Eurasian watermilfoil (EWM) Management Plan.
 - *Completed per 2020 AIP ¹*

Monitoring Associated with the Land Use Management Plan (LUMP)

- Continue annual inspections of Avista project lands to assure compliance with permit and lease conditions and assure compliance with acceptable land uses and restrictions as defined by Land Use Classifications.
 - *Completed per 2020 AIP ¹*

Enforcement Associated with the Land Use Management Plan (LUMP)

- Continue to provide funding for Montana Fish, Wildlife and Parks enforcement personnel to assist in the prevention and when appropriate prosecute violations of the law, permit and lease conditions and other unauthorized uses of project lands and waters.
 - *Completed per 2020 AIP ¹*
- Continue to provide funding for Idaho Fish and Game enforcement personnel to assist in the prevention and when appropriate prosecute violations of the law, permit and lease conditions and other unauthorized uses of project lands and waters.
 - *Completed per 2020 AIP ¹*
- Continue to provide funding for Avista real estate, legal, land survey, and cultural personnel to assist in the prevention and when appropriate prosecute violations of the law, permit and lease conditions and other unauthorized uses of project lands and waters.
 - *Completed per 2020 AIP ¹*

7.1.3 Projects with Significant Variances

Project Plan	Variances
5-Year Review and Update of the LUMP	Land Use Subgroup 5-year review and update initiated in 2017 was not completed due to continued Avista staffing changes. The review will be completed in 2021.

7.1.4 Key 2020 References

¹ Avista. 2020. Terrestrial Resources Program. 2020 Annual Work Summary. Avista document identification number 2020-0272.

7.2 Implementation of the Recreation Resource Management Plan (License Article 415 – CFSA Appendix H)

7.2.1 Purpose and Resource Benefit

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). The Land Use, Recreation, and Aesthetics Work Group developed the plan and identified seven goals to be met through its implementation:

- Manage existing recreation resource needs.
- Manage future recreation resource needs.
- Provide adequate and safe public access.
- Preserve recreation resources.
- Coordinate recreation planning and needs.
- Provide cost-effective and desirable recreation opportunities.
- Provide compatible recreation opportunities.

7.2.2 2020 Annual Implementation Plan Project Plans

RRMP Administration and Resource Integration

- Administer the RRMP with Recreational Specialist, clerical, consultant, and technical support.
 - *Completed per 2020 AIP ¹*
- Integrate RRMP programs and projects with land use, cultural resources, wildlife, fisheries, aesthetics, and erosion control programs.
 - *Completed per 2020 AIP ¹*

RRMP Recreation Facility Development

- Implement the 2020 Recreation Resource Facility Development Plan.
 - *Variance ¹; see Section 7.2.3*

RRMP Monitoring

- Work with the recreation subgroup to implement electronic recreation site evaluations developed as part of the 2017 RRMP update.
 - *Variance ^{1, 2}; see section 7.2.3*
- Continue to utilize up to 21 automated traffic counters to measure use at various developed and dispersed recreation sites and trails.
 - *Completed per 2020 AIP ^{1, 3}*

- Continue utilizing standardized reporting for recreation use at Thompson Falls State Park, North Shore Recreation Area, and Bull River Recreation Area.
 - *Completed per 2020 AIP ^{1, 3}*
- Summarize 2020 recreational use data from Bull River and North Shore campgrounds, MFWP, Thompson Falls State Park, and the Cabinet Gorge Dam and Noxon Rapids Dam viewpoints.
 - *Completed per 2020 AIP ^{1, 3}*
- Develop maps showing dispersed recreation sites along the projects and permitted dock locations (showing dock densities per 0.5-mile segments of shoreline).
 - *Completed per 2020 AIP ⁴*

Recreation Resource Management Plan (RRMP) - Operation and Maintenance

- Maintain Avista controlled recreation facilities and undeveloped recreation sites on Avista lands.
 - *Completed per 2020 AIP ¹*
- Assist USFS with the maintenance of Finley Flats Recreation Area, North Shore Recreation Area, Marten Creek Recreation Area, Triangle Pond, Bull River Recreation Area, Quinn's Cut Recreation Area, and Big Eddy Recreation Area.
 - *Completed per 2020 AIP ¹*
- Assist MFWP with the maintenance of Thompson Falls State Park and Flat Iron Ridge Fishing Access Site.
 - *Completed per 2020 AIP ¹*
- Provide low cost leases or permits to the community or civic groups providing recreation opportunities (i.e., Thompson Falls Golf Course).
 - *Completed per 2020 AIP ¹*

RRMP Interpretation and Education

- Implementation of the Interpretation and Education Program will be integrated with the measures developed and approved by the CRMG in 2008.
 - *Completed per 2020 AIP ¹*

7.2.3 Projects with Significant Variances

Project Plan	Variances
Implement the 2020 Recreation Resource Facility Development Plan	While more projects are listed than are anticipated to be completed each year under this program, an even greater number of projects were not completed in 2020 due to challenges with COVID-19.

Project Plan	Variances
Electronic Recreation Site Evaluations	Due to staffing changes this Task was not completed in 2020. However, sites were visited at least weekly and any maintenance issues were addressed at that time.

7.2.4 Key 2020 References

- ¹ Avista. 2020. Terrestrial Resources Program. 2020 Annual Work Summary. Avista document identification number 2020-0272.
- ² Pinnacle Research and Consulting. 2017. Clark Fork Project Recreation Resource Management Plan, Interim Update. Avista document identification number 2017-0410.
- ³ Pinnacle Research and Consulting. 2020. 2020 Clark Fork Recreation Site Visitation. Avista document identification number 2020-0253.
- ⁴ Avista. 2020. Avista Property Use Permits 2020 maps. Summary maps showing dispersed recreation areas along the projects and permitted dock locations (showing dock densities per 0.5 mile segments of shoreline). Avista document identification number 2020-0263.

7.3 Implementation of the Aesthetics Management Plan (License Article 416 – CFSA Appendix I)

7.3.1 Purpose and Resource Benefit

The purpose of this measure is to provide for the protection and enhancement of aesthetic resources associated with Avista's Clark Fork Project and to mitigate for project related impacts to those resources through the implementation of the Aesthetics Management Plan. Aesthetic guidelines and considerations of the Aesthetics Management Plan are implemented by permit standards and land use classifications of the LUMP, site design and monitoring in the RRMP, 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 Aesthetics Management Plan.

7.3.2 2020 Annual Implementation Plan Project Plans

- Monitor recreation, land management, erosion, and facility construction programs to ensure AMP guidelines are considered.
 - *Completed per 2020 AIP¹*
- Continue to investigate measures to restore views and remove vegetation as needed, also addressing any identified issue from the 2018 re-inventory of 41 key viewpoints. Sites will be revisited again in 2023 to take photos to compare to past inventories.
 - *Completed per 2020 AIP^{1, 2}*

7.3.3 Key 2020 References

¹ Avista. 2020. Terrestrial Resources Program. 2020 Annual Work Summary. Avista document identification number 2020-0272.

² Pinnacle Research and Consulting. 2018. Aesthetics Management Plan Five-Year Inventory Review, 2018. Avista document identification number 2018-0422.

7.4 Implementation of the Wildlife, Botanical, and Wetland Management Plan (License Article 417 – CFSA Appendix J)

7.4.1 Purpose and Resource Benefit

The purpose of this measure is to provide for the organization and presentation of the various wildlife, botanical, and wetland PM&E measures, site-specific plans, and other management activities within a single, comprehensive management plan document.

7.4.2 2020 Annual Implementation Plan Project Plans

- Utilize the Wildlife, Botanical and Wetland Management Plan to help guide implementation of Wildlife, Botanical, and Wetland Protection, Mitigation, and Enhancement programs.
 - *Completed per 2020 AIP¹*
- Continue to update the habitat protection spreadsheet as acquisitions are completed.
 - *Completed per 2020 AIP^{1, 2}*
- As approved by the Management Committee at their March 15, 2016 meeting, observations regarding bald eagles, peregrine falcons, and common loons will be reported here annually.
 - *Completed per 2020 AIP¹*

7.4.3 Key 2020 References

¹ Avista. 2020. Terrestrial Resources Program. 2020 Annual Work Summary. Avista document identification number 2020-0272.

² Avista. 2020. Habitat protected through CFSA 2000–2020. Avista document identification number 2020-0271.

7.5 Wildlife Habitat Acquisition, Enhancement, and Management Program (License Article 418 – CFSA Appendix K)

7.5.1 Purpose and Resource Benefit

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.

7.5.2 2020 Annual Implementation Plan Project Plans

Operation and Maintenance of Acquired Property and Contingency Fund

- Operation and maintenance, including fence/gate maintenance, noxious weed treatment, forest management plan development and implementation, public information and management, and taxes on Avista owned and managed habitat protection properties.
 - ***Completed per 2020 AIP ¹***
- Trestle Creek Day Use Site Plan – Implementation of site plan for the old Bear Paw Campground. Area is heavily used during kokanee spawning. Work will include the development and installation of interpretive signage for the site. Funding will be covered by the timber receipts from the logging of parcels in the drainage.
 - ***Completed per 2020 AIP ¹***
- Twin Creek – Continue to develop site plan and install infrastructure that will allow public use of this property that was acquired in 2016. Work will include noxious weed control, enforcement, and development of revegetation/wetland enhancement plans for the property.
 - ***Completed per 2020 AIP ¹***
- South Fork Bull River Wildlife Management Area complex – Activities include monitoring, weed control, development of infrastructure (roads, parking areas, fences), development of timber management plan, enforcement, etc.
 - ***Completed per 2020 AIP ¹***
- Monitoring of other Avista owned habitat properties and implementing management measures as needed.
 - ***Completed per 2020 AIP ¹***

Habitat Acquisition and Conservation and Contingency Fund

- Funding is available to conduct due diligence (landowner discussions, property inspection, habitat information, title search, and appraisal), in order to provide the

Management Committee a detailed proposal for their consideration. Includes working with partners such as Kaniksu Land Trust on identifying and vetting potential projects.

- *Completed per 2020 AIP*¹

7.5.3 Key 2020 References

¹ Avista. 2020. Terrestrial Resources Program. 2020 Annual Work Summary. Avista document identification number 2020-0272.

7.6 Black Cottonwood Habitat Protection and Enhancement (License Article 419 – CFSA Appendix L)

7.6.1 Purpose and Resource Benefit

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. Additionally, existing stands and trees are protected through the implementation of land use classifications in the Land Use Management Plan (LUMP).

7.6.2 2020 Annual Implementation Plan Project Plans

- Continue to protect black cottonwood stands along the Clark Fork Project through the implementation of the Land Use Management Plan.
 - *Completed per 2020 AIP¹*
- Continue to monitor and maintain the exclosure at Hereford Slough.
 - *Completed per 2020 AIP¹*
- Based on success of the Hereford Slough exclosure, construct additional exclosure within this stand (continuation of 2018 efforts).
 - *Completed per 2020 AIP¹*

7.6.3 Key 2020 References

¹ Avista. 2020. Terrestrial Resources Program. 2020 Annual Work Summary. Avista document identification number 2020-0272.

7.7 Wetlands Protection and Enhancement Program (License Article 420 – CFSA Appendix M)

7.7.1 Purpose and Resource Benefit

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.

7.7.2 2020 Annual Implementation Plan Project Plans

- Continue to investigate the potential for a wetland enhancement project on the 2016 Twin Creek acquisition.
 - *Competed per 2020 AIP¹*
- Monitor enhancements previously completed at Hereford Slough, McKay Creek, Finley Flats, and Blacktail Bay/Islands.
 - *Completed per 2020 AIP¹*

7.7.3 Key 2020 References

¹ Avista. 2020. Terrestrial Resources Program. 2020 Annual Work Summary. Avista document identification number 2020-0272.

7.8 Forest Habitat Protection and Enhancement (License Article 425 – CFSA Appendix P)

7.8.1 Purpose and Resource Benefit

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.

7.8.2 2020 Annual Implementation Plan 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.
 - *Completed per 2020 AIP ¹*
- 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.
 - *Completed per 2020 AIP ¹*
- Continue to monitor and enforce the road closure to Stevens Creek Point (closure was instituted in 2001).
 - *Completed per 2020 AIP ¹*
- Continue to prohibit motorized use of Finley Flats Point.
 - *Completed per 2020 AIP ¹*
- 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.
 - *Completed per 2020 AIP ¹*
- Continue weekly patrols of the forested lands surrounding the State Shop property and continue to reduce the amount of disturbance and litter in this area.
 - *Completed per 2020 AIP ¹*
- 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.
 - *Completed per 2020 AIP ¹*

7.8.3 Key 2020 References

¹ Avista. 2020. Terrestrial Resources Program. 2020 Annual Work Summary. Avista document identification number 2020-0272.

7.9 Reservoir Island Protection (License Article 426 – CFSA Appendix Q)

7.9.1 Purpose and Resource Benefit

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.

7.9.2 2020 Annual Implementation Plan 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.
 - *Completed per 2020 AIP*¹

7.9.3 Key 2020 References

¹ Avista. 2020. Terrestrial Resources Program. 2020 Annual Work Summary. Avista document identification number 2020-0272.

7.10 Erosion Fund and Shoreline Stabilization Guidelines Program (License Article 428 – CFSA Appendix S)

7.10.1 Purpose and Resource Benefit

The purpose of this measure is to address 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.

7.10.2 2020 Annual Implementation Plan Project Plans

- Address erosion concerns identified by the CRMG.
 - *Completed per 2020 AIP¹*
- Continue to evaluate and provide technical assistance for an erosion control project being undertaken by an adjacent landowner on Noxon Reservoir (Vermilion Point Area). This is a continuation of a 2017 project. The ability to complete this project will depend upon the adjacent landowner's availability.
 - *Completed per 2020 AIP¹*
- Utilize a geotechnical contractor to assist with evaluating erosion control proposals received by Avista.
 - *Completed per 2020 AIP¹*

7.10.3 Key 2020 References

¹ Avista. 2020. Terrestrial Resources Program. 2020 Annual Work Summary. Avista document identification number 2020-0272.

Section 8: Other Clark Fork License Articles

This section specifically addresses annual compliance with articles 432 through 443 of the Clark Fork Project License.

8.1 Threatened and Endangered Species Plan and Annual Report (License Article 432 – Amended June 13, 2003)

8.1.1 Purpose

Article 432 of the Federal Energy Regulatory Commission (FERC) License requires that Avista file a Threatened and Endangered Species Plan (T&E Plan) and Annual Report for Commission approval before April 15 of each year, after consultation with the Management Committee (MC). The T&E Plan must address compliance with the Reasonable and Prudent Measures (RPMs) and implementing terms and conditions of the incidental take statement issued by the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act. The USFWS issued a biological opinion and incidental take statement with regard to Project relicensing on August 23, 1999, and it was attached as Appendix D to the FERC License Order.

On March 28, 2018, FERC requested formal consultation with USFWS under Section 7 of the Endangered Species Act regarding Avista’s proposed License Amendment to construct and operate a permanent upstream fish passage facility at Cabinet Gorge Dam (the Cabinet Gorge Dam Fishway or “CGDF”). Subsequently, on February 1, 2019, USFWS issued a new biological opinion and incidental take statement analyzing the CGDF as well as Avista’s continued operation of the Project. This 2019 biological opinion updated and superseded USFWS’s 1999 biological opinion for the Project. The 2019 biological opinion included an incidental take statement, which was incorporated into the August 8, 2019 FERC License Order approving construction and operation of the CGDF. Compliance with the RPMs, and implementing terms and conditions, in the February 1, 2019 incidental take statement will be reported in this T&E Plan and Annual Report. References herein to an “incidental take statement” are to the statement that was issued as part of the 2019 biological opinion.

In 2002, Avista and USFWS agreed that Article 432’s T&E planning requirement, as well as Avista’s annual reporting and consultation requirements for several Protection, Mitigation and Enhancement (PM&E) measures, are adequately addressed through the Annual Implementation Plans (AIPs), which are approved by the MC, and by providing the annual activity summaries contained in this section of the Annual Report. Those PM&E measures are:

- Idaho and Montana Tributary Habitat Acquisition and Fishery Enhancement Programs (License Articles 404 and 405).
- Fish Passage/Native Salmonid Restoration Plan (License Article 406).
- Bull Trout Protection and Public Education Project (License Article 407).
- Watershed Councils Program (License Article 408).
- Water Quality Protection and Monitoring Plan for Maintenance, Construction, and Emergency Activities (License Article 412).
- Dissolved Gas Supersaturation Control, Mitigation, and Monitoring (License Article 413).
- Project Operations Package (License Articles 429, 430, and 431).

Section 8.1.2 below provides the 2020 activity report for the PM&E measures listed above, which comprises Avista's T&E Plan and is intended to satisfy Avista's annual reporting requirement for these measures. To assist the Commission and USFWS in evaluating compliance with USFWS's RPMs and their associated terms and conditions, Section 8.1.2 is organized by RPM.

8.1.2 2020 Activity Summary

8.1.2.1 Terms and Conditions to Implement RPM #1 and Corresponding Activities

The incidental take statement's RPM #1 states:

Identify adult bull trout attempting to migrate upstream of Cabinet Gorge and/or Noxon Rapids Dams, and in a manner agreed to by the Service and consistent with the Clark Fork Settlement Agreement (as amended), provide safe, timely and effective fish passage.

The four terms and conditions (1 through 4) and corresponding 2020 activities implementing RPM #1 are listed below.

1) The likely natal origin of adult bull trout captured downstream of Cabinet Gorge Dam shall be determined using genetic testing, or other methods deemed appropriate by the Service.

Genetic sampling and testing to determine the likely natal origin of adult Bull Trout was initiated in 1999 and is an ongoing activity for all adult Bull Trout captured downstream of Cabinet Gorge Dam in the lower Clark Fork River. Genetic sample collection and testing in 2020 was approved by the MC, including the USFWS. In 2020, 20 individual adult Bull Trout (≥ 350 mm in length) were captured downstream of Cabinet Gorge Dam. Fourteen of these individual fish required rapid-response genetic analysis while the other six Bull Trout had been captured in previous years and had already been genetically tested. Capture histories and genetic analysis results for these fish were then used to make upstream transport decisions. Juvenile Bull Trout fin tissue samples were also collected from tributaries to the Clark Fork River and Lake Pend Oreille (LPO) to allow for an improvement in the accuracy of the genetic baseline that is used to determine transport locations.

2) A permanent fish tagging system shall be implemented for all bull trout handled during monitoring and other fisheries investigation activities in the project area. The tagging system shall have the capability to positively identify bull trout originating from spawning tributaries above Cabinet Gorge and/or Noxon Rapids Dams.

A permanent fish tagging system, utilizing Passive Integrated Transponder (PIT) tags, was utilized again in 2020 as approved by the MC and USFWS. All Bull Trout ≥ 100 mm in length captured during the implementation of Clark Fork Settlement Agreement (CFSA) projects were implanted with PIT tags. A PIT-tag database, originally developed in 2000, continued to be utilized in 2020 to allow for the storage of information on all Bull Trout PIT tagged in the project area. Data from 2020 PIT tagging events were recorded in the PIT-tag database. The PIT-tag database is updated annually, and data requests are processed upon request.

- 3) *A program to capture and transport adult bull trout originating from tributaries above Cabinet Gorge and/or Noxon Rapids Dams shall be implemented to provide safe, timely and effective upstream fish passage, and shall be implemented in a manner consistent with the Native Salmonid Restoration Plan and the Clark Fork Settlement Agreement (as amended).*

Protocols for capture, transport, and release of Bull Trout were approved by the MC, including the USFWS, in March of 2020.

Fish Capture:

The schedule for construction of the CGDF was impacted by several factors in 2020. In early 2020, excavation of the bedrock within the cofferdam was halted due to FERC concerns related to the stability of the thrust block, thrust block extension, and structure excavation. A new stability analysis was completed to verify previous analyses, and the FERC gave the approval to move forward with excavation, resulting in an initial three-month and ultimately a six-month overall delay to the project due to the nature of the limited work window during spill season. High flows in the spring of 2020 caused damage to the cofferdam sheet piles primarily on the north and northeast walls, compounding the delays to the project. The cofferdam was repaired by the end of September 2020 and Avista personnel performed fish salvage efforts consistent with the USFWS and FERC approved Fish Salvage Plan. These activities were reported to the appropriate stakeholders. Quarterly updates were provided to the MC on the progress of the project. Monthly construction reports were submitted as required by permitting and approval agencies (i.e., FERC Portland Regional Office).

Excavation of the bedrock within the cofferdam continued during the fall along with the installation of the siphon piping along the wing dam into the forebay, and construction of the walkways and framework for the intake screens in the forebay. The contractor began pouring the concrete for the various components of the fish trap in December with a goal to have the concrete work completed prior to spill in 2021. The updated CGDF construction schedule shows a completion date of spring 2022, with commissioning of the CGDF occurring post spill 2022.

In 2019, the MC agreed to develop a monitoring and evaluation plan for the CGDF as an alternative to updating the basic monitoring program document that was originally developed in 2013. Any changes to the design of the fish trap that may impact the basic monitoring program document would be captured in the monitoring and evaluation plan that is currently being drafted. Other documents that need to be developed in preparation for operation of the CGDF, including a transport protocol, will be addressed in 2021 when more detail is available on how the CGDF will be operated and as commissioning of the CGDF gets closer.

To prepare for operation of the CGDF several upgrades were needed at the Cabinet Gorge Fish Handling Facility (CGFHF). The design drawings for these modifications were completed during the spring and summer of 2020 and a contractor was selected in the fall. A consent mail requesting additional funds for construction of the modifications to the CGFHF was approved in the fall. Construction was initiated in October with an anticipated completion date in May 2022.

In 2020, Avista continued to utilize the Cabinet Gorge Fish Hatchery Ladder (hatchery ladder), night electrofishing, and hook-and-line sampling to collect adult Bull Trout downstream of Cabinet

Gorge Dam (Table 1). These methods were used at a similar level of intensity as previous years, except for night electrofishing. Due to COVID-19 concerns night electrofishing efforts did not begin until April 14, a one-week delay from previous years. In addition, a two-person crew went out two nights each week except during high flows in the spring when a three-person crew was used for additional safety. Night electrofishing was conducted on four additional nights in September in an effort to increase Bull Trout capture numbers.

In 2020, 20 individual adult Bull Trout (≥ 350 mm in length) were captured in the lower Clark Fork River downstream of the Cabinet Gorge Dam. One Bull Trout had a genetic assignment to a tributary downstream of Cabinet Gorge Dam, and another Bull Trout died as a result of night electrofishing injuries. A genetically confirmed Bull Trout and Brook Trout hybrid was also captured downstream of Cabinet Gorge Dam in 2020. This fish was euthanized.

Table 1. Number of adult Bull Trout (≥ 350 mm in length) captured downstream of Cabinet Gorge Dam under the Upstream Fish Passage Program in 2020 (not including within year recaptures).

Method of Capture	Dates of Operation	Bull Trout Handled	Adult Bull Trout Transported
Hatchery Ladder	August 6–October 16	5	5
Electrofishing	April 2–October 15	12	10
Hook-and-Line	May 8–September 15	3	3
Total		20	18

Fish Transport:

Eighteen Bull Trout were transported upstream to Montana based on genetic assignments, previous capture histories, or other approved criteria in 2020 (Table 2).

Table 2. Release regions for adult Bull Trout captured downstream of Cabinet Gorge Dam and either released in Idaho or transported upstream to Montana in 2020 (the Bull Trout that died as a result of night electrofishing injuries was previously captured in and genetically assigned to Graves Creek and is not included in the table below).

Release Region	Adult Bull Trout
Lower Clark Fork River (Region 1)	1
Cabinet Gorge Reservoir (Region 2)	7
Noxon Reservoir (Region 3)	7
Thompson Falls Reservoir (Region 4)	4
Total	19

Fish Pathogens:

Avista is required by the CFSA Amendment to lethally sample 60 Bull Trout collected downstream of Cabinet Gorge Dam and test them for pathogens prior to the issuance of a Montana Fish, Wildlife, and Parks (MFWP) import permit. There were no pathogens of concern detected in the

group of Bull Trout (captured as bycatch from the LPO Lake Trout Netting Program) tested in 2019, which allowed for the upstream transport of Bull Trout in 2020. In 2020, 60 adult Bull Trout were again collected and analyzed for pathogens. No pathogens of concern were detected, and these results will be used to apply for a 2021 MFWP import permit.

4) The upstream capture and transport program shall be adaptively managed, with approval from the Service, in a manner that places priority on maintaining and restoring adfluvial bull trout local populations above Cabinet Gorge and/or Noxon Rapids Dams.

The Appendix C Fish Passage/Native Salmonid Restoration Plan AIP, including the Upstream Fish Passage Program Project Plan, for 2020 was reviewed and approved by the Water Resources Technical Advisory Committee and MC, including a representative from the USFWS. The Upstream Fish Passage Program Project Plan describes activities related to Bull Trout including upstream transport and release protocols. The USFWS also has a representative on the Aquatic Implementation Team, which is a sub-group that reviews AIPs and the progress of projects on a monthly basis to determine if efforts are in line with agency requirements and guidelines. These annual and monthly review processes allow for adaptive management of local Bull Trout populations above Cabinet Gorge and Noxon Rapids dams.

8.1.2.2 Terms and Conditions to Implement RPM #2 and Corresponding Activities

The incidental take statement's RPM #2 states:

Identify juvenile bull trout attempting to migrate downstream to Lake Pend Oreille, and in a manner agreed to by the Service and consistent with the Clark Fork Settlement Agreement (as amended), provide safe, timely and effective fish passage.

The two terms and conditions (5 and 6) and corresponding 2020 activities implementing RPM #2 are listed below.

5) A program to trap and transport juvenile bull trout from tributaries above Cabinet Gorge and/or Noxon Rapids Dams shall be implemented to provide safe, timely and effective downstream fish passage, and shall be implemented in a manner consistent with the Native Salmonid Restoration Plan and the Clark Fork Settlement Agreement (as amended).

Term and condition 5 of RPM #2 was fulfilled through the adaptively managed Tributary Trapping and Downstream Juvenile Bull Trout Transport Program.

There were a total of 692 capture events of 691 individual juvenile (i.e., <300 mm) Bull Trout during 2020. A total of 629 120–250 mm Bull Trout were captured in Montana tributaries and transported to Idaho during 2020 (Table 3). An additional 63 juvenile Bull Trout were captured and released on site because they did not meet one or more of the transport criteria (i.e., fish length or direction of travel). There were no Bull Trout mortalities associated with capture and handling in 2020. However, substantial mink predation from within the Graves Creek permanent weir trap box was documented in 2020 (see discussion pertaining to terms and conditions 19 and 20). Following capture, fish were measured (length and weight) and implanted with a PIT tag if they

were greater than 99 mm and if a PIT tag was not already present. All juvenile transports were released in the lower Clark Fork River at the Cabinet Gorge Fish Hatchery site.

There were seven capture events of six individual adult Bull Trout in tributary traps during 2020. Four of these fish were captured following the spawn and transported to Idaho (two each from Graves Creek and the East Fork Bull River). One fish was captured early during the spawn period and released back upstream. The final fish succumbed to injuries related to mink getting into the trap box in Graves Creek.

Table 3. Tributary and method of capture for juvenile Bull Trout transported to Idaho under the Tributary Trapping and Downstream Juvenile Bull Trout Transport Program in 2020.

Tributary	Method	Bull Trout Transported
Graves Creek	Permanent Weir	489
East Fork Bull River	Weir/Screw Trap	48
Vermilion River	Stream Electrofishing	92
Total		629

6) The downstream trap and transport program shall be adaptively managed, with approval from the Service, in a manner that places priority on maintaining and restoring adfluvial bull trout local populations above Cabinet Gorge and/or Noxon Rapids Dams.

Avista works closely with the USFWS through the CFSA process to adaptively manage trapping protocols on an inter- and intra-annual basis. Based on information gathered largely through CFSA programs, it is believed that Graves Creek, East Fork Bull River, and the Vermilion River are the only three Montana tributaries to the Clark Fork River within the Avista project area where meaningful numbers of Bull Trout naturally exhibit a migratory life history. In light of this, the USFWS and MFWP have collectively agreed that for the time being juvenile transport efforts should be limited to these three drainages and that these efforts should be, “aggressive but prudent”.

8.1.2.3 Terms and Conditions to Implement RPM #3 and Corresponding Activities

The incidental take statement’s RPM #3 states:

Implement a dissolved gas supersaturation control, mitigation, and monitoring program.

The three terms and conditions (7 through 9) and corresponding 2020 activities implementing RPM #3 are listed below.

7) The Gas Supersaturation and Control Program (and 2009 Addendum), shall be implemented in a manner consistent with the Clark Fork Settlement Agreement (as amended).

Appendix F5 of the CFSA requires that “...study, control, mitigation, and monitoring of gas supersaturation...” occur. The Gas Supersaturation Control Program (GSCP) and GSCP Addendum were developed to guide how these requirements would be achieved. The FERC issued an order approving the GSCP on January 11, 2005 and approved the final GSCP Addendum on February 19, 2010. In 2020, high-flow spill protocols were followed as described under term and condition 8 and total dissolved gas monitoring occurred at two established sites as described under term and condition 9.

8) High-flow spill protocols shall be finalized and implemented to address total dissolved gas production and shall be consistent with the Clark Fork Settlement Agreement (as amended).

Interim spillgate procedures were formalized in the GSCP approved by the FERC on January 11, 2005 and the GSCP Addendum approved by the FERC on February 19, 2010. Spillway operations at Cabinet Gorge Dam were amended to include the use of spillway 2 in 2014, spillways 4 and 5 in 2016, and spillways 1 and 3 in 2018 after modifications were made to these spillways to reduce total dissolved gas (TDG). The purpose of these spillgate procedures is to achieve the CFSA Appendix F5 requirement to control (i.e., reduce) the amount of TDG produced at Noxon Rapids and Cabinet Gorge dams and reduce potential effects to aquatic organisms downstream. The spillgate procedures were followed to the extent practicable in 2020; however, FERC-required testing resulted in a variance of the spill protocol. Effects to TDG levels were minimal.

The hydraulic capacity of the powerhouse at Noxon Rapids Dam was exceeded on 33 of 153 days between March 1 and July 31, 2020. Spillgates 1 through 6 were used at various times May 11 through July 8 under normal operations. In addition to the spill that resulted due to flow conditions, all eight gates were opened to one foot on May 5 meeting the FERC requirement for annual spillway gate operation tests. Subsequently, full height gate tests occurred for gates 5–8 on May 20 and gates 1–4 on May 21, meeting the FERC requirement to open each gate to full height at least once in each 5-year period. The peak flow recorded at Noxon Rapids Dam in 2020 was 90,540 cubic feet per second (cfs) on June 2, 2020.

In 2020, spill occurred April 24 and from April 27 through July 8 at Cabinet Gorge Dam. Gates 1–5 were opened to a height of one foot on April 27 and gates 6–8 were opened to one foot on May 20, meeting FERC annual gate operation testing requirements. All eight gates were opened to full height at least once between May 27 and June 3 meeting the FERC requirements that all gates are opened fully at least once every five years. The peak flow recorded at Cabinet Gorge Dam in 2020 was 93,100 cfs on June 2.

9) Total dissolved gas monitoring shall be done at established sites and shall be conducted in a manner that is consistent the Gas Supersaturation and Control Program (and 2009 Addendum), and the Clark Fork Settlement Agreement (as amended).

Prior to deployment in 2020, TDG monitoring equipment was sent to the manufacturer for annual maintenance and calibration. Consistent with the GSCP and CFSA, Avista personnel deployed a TDG probe in the Cabinet Gorge Dam forebay on April 24 and two TDG probes approximately one mile downstream of Cabinet Gorge Dam on March 20 and May 20. The Cabinet Gorge Dam

Forebay station operated continuously until May 19. While a probe remained deployed until July 13, data for the May 19 to July 13 time period were rendered unusable due to a probe malfunction. The Downstream Cabinet Gorge station (deployed on March 20) and the duplicative Downstream Cabinet Gorge station (deployed May 20) operated beyond July 31, well after spill had ceased. Avista staff maintained the sites and performed field calibration as needed.

The relationship between TDG in the Cabinet Gorge forebay and discharge at Noxon Rapids Dam in 2019 was used to estimate TDG in the Cabinet Gorge forebay for the time period prior to deployment and of probe malfunction in 2020. Downstream of Noxon Rapids Dam, from April 24 to July 8 (when sustained spill occurred at Cabinet Gorge Dam), estimated TDG in the Cabinet Gorge Dam forebay had a mean of 111.1% with a minimum of 100.8% and a maximum of 120.8%. During the same time period at the Downstream Cabinet Gorge station, TDG had a mean of 117.0% with a minimum of 101.7% and a maximum of 141.4%. Of the 76 days from April 24 to July 8, TDG downstream of Cabinet Gorge Dam exceeded 110% on 63 days and exceeded 120% on 26 days. Total discharge as high as 52,000 cfs passed Cabinet Gorge Dam with downstream TDG being less than 110% and flow as high as 60,000 cfs with downstream TDG being less than 120%. These values were about 5,000 cfs (110% saturation) and 10,000 cfs (120% saturation) less than observed in 2019. The unplanned outage of Unit 1 resulted in about 10,000 cfs more water being spilled for much of the spill season and explains these differences observed in maximum discharge at the two TDG levels.

Testing of modified spillways occurred during sustained spill. These tests consisted of running water through modified spillways to evaluate the amount of spill that can occur before the water quality standard of 110% is exceeded. No TDG-reducing modifications were made to Cabinet Gorge Dam in 2020. Proposals for future modifications (if warranted) will be outlined in a future project plan for Appendix F5 (Dissolved Gas Supersaturation Control, Mitigation, and Monitoring) through the AIP process.

8.1.2.4 Terms and Conditions to Implement RPM #4 and Corresponding Activities

The incidental take statement's RPM #4 states:

Maintain sufficient in-stream flow downstream of Cabinet Gorge Dam.

The two terms and conditions (10 and 11) and corresponding 2020 activities implementing RPM #4 are listed below.

10) From September 15 through October 31, the instantaneous minimum flow below Cabinet Gorge Dam shall be maintained at 5,000 cubic feet per second or greater.

Clark Fork River discharge (i.e., “flow”) is estimated both through the project as well as at the U.S. Geological Survey gage station located approximately 500 m downstream of Cabinet Gorge Dam. Computers in the Cabinet Gorge Dam control room constantly monitor discharge through turbines and spillgates. Accusonic flow meters located in the penstocks relay individual unit discharge to the control room computers. The Cabinet Gorge Dam minimum flow General

Operating Limit was modified in late 2017 and is 3,000 cfs during the period from November 1 through September 14 and 5,000 cfs from September 15 through October 31.

As part of the CGDF construction planning process, Avista identified there would be a need to deviate from the minimum flow General Operating Limit in order to facilitate construction and repairs to the cofferdam. On September 11, Avista notified the Appendix F4 designated contacts of the need to periodically operate Cabinet Gorge Dam between 3,000 and 5,000 cfs between September 15 and October 31. This was amended through a September 21 memo to be in effect through October 4. Avista operated in accordance with the Best Management Practices (BMPs) through all events.

11) From November 1 through September 14, the instantaneous minimum flow below Cabinet Gorge Dam shall be maintained at 3,000 cubic feet per second or greater.

On August 27, Avista sent the Appendix F4 designated contacts (including the USFWS) a memo outlining the need for one no flow event to facilitate CGDF construction and proposing a suite of BMPs intended to minimize any negative effects of the no flow event. These BMPs were adopted and followed during the September 3 no flow event.

8.1.2.5 Terms and Conditions to Implement RPM #5 and Corresponding Activities

The incidental take statement's RPM #5 states:

Implement a program that manages non-native species in a manner that is beneficial for bull trout.

The two terms and conditions (12 and 13) and corresponding 2020 activities implementing RPM #5 are listed below.

12) Non-native fish management programs shall be implemented in the Clark Fork Project action area for the benefit of bull trout and shall be implemented in a manner consistent with the Native Salmonid Restoration Plan and the Clark Fork Settlement Agreement (as amended).

In 2018, the MC approved the Clark Fork River Native Salmonid Restoration Plan (NSRP) Five-Year Plan for the 2019 through 2023 time period, consistent with the CFSA and RPM #5. This update highlighted numerous potential actions and data needs for developing non-native species management plans for future implementation. Efforts undertaken in 2020 in accordance with this direction included Lake Trout angler incentive and gill net suppression programs in LPO, assessing the Walleye population and feasibility of Walleye suppression through an angler incentive program on the LPO-lower Clark Fork River, suppression of Northern Pike in Box Canyon Reservoir, compilation of 12 years of data on the non-native fish suppression program in the East Fork Bull River, and the development of potential actions to be implemented in future Project Plans. The details of these activities are described below.

Lake Pend Oreille Lake Trout Angler Incentive Program:

This program has been implemented annually since 2006, in an effort to reduce predator, specifically Lake Trout, abundance in LPO. In 2020, funding of the LPO Angler Incentive Program continued. Anglers participating in the program turned in Lake Trout heads along with information cards at freezers maintained at access points around LPO. In 2020, anglers turned in 2,641 Lake Trout (Table 4), which was an increase from 2019.

Lake Pend Oreille Angler Incentive Program funds were also used to sponsor angling derbies on LPO. Sponsorship dollars were used to encourage additional anglers to participate in harvest-oriented angling of LPO Lake Trout and to encourage Bull Trout education. In 2020, four LPO derbies were recipients of sponsorship funding.

Lake Pend Oreille Lake Trout Netting Program:

The goal of this program is to increase kokanee numbers by reducing predator abundance. The focus of this program is Lake Trout reduction and efforts to obtain this goal have been implemented annually in conjunction with the LPO Angler Incentive Program since 2006.

In 2020, the LPO Lake Trout Netting Program was implemented for the fifteenth year and removed 7,621 Lake Trout (Table 4). Since 2006, a combination of angling and netting has removed more than 239,000 Lake Trout. Netting catch rates for Lake Trout have declined substantially since the program was initiated.

Standardized trap net catch rates were the primary index used to track changes in adult Lake Trout abundance since 2006. Idaho Department of Fish and Game (IDFG) discontinued trap net trends in 2018 because they developed a more robust and less expensive assessment tool (cohort analyses) using the harvest data from netting and angler incentive programs, along with an estimation of age structure for each year assessed. They were able to use this tool to estimate the age-specific abundances of Lake Trout back to 2006. Lake Trout abundances declined an average of 7.5% annually from 2006–2017, however the population stopped declining and stabilized after 2015, which may be a result of a premature reduction of fishing effort that started in 2015. The estimated total abundance of age 4+ Lake Trout was 40,336 fish at the end of 2017. In 2018, IDFG further improved the accuracy of the cohort analysis by collecting age structure information using a randomized assessment gill-netting program, which is designed to avoid the size selectivity problems associated with trap nets and gill nets specifically targeting juveniles.

Table 4. Lake Trout harvested and removed from LPO, Idaho in 2020 by collection method.

Collection Method	Lake Trout Harvested
Angling	2,641
Netting	7,621
Total	10,282

An increase in the kokanee population has been associated with the reduction in the Lake Trout population. Age-specific abundance estimates are not yet finalized for 2020. At present, preliminary data suggest kokanee abundance likely remains at a high level for the eighth

consecutive year. Kokanee abundance has steadily increased since the predator reduction program began in 2006.

The Bull Trout population has remained robust in the Idaho portion of the LPO core area. Idaho Department of Fish and Game continues to observe high Bull Trout catch and low mortality in gill-netting operations. The responses observed to date suggest that suppression of Lake Trout can be achieved and provide benefits for both kokanee and Bull Trout. Lake Pend Oreille predator removal success will continue to be monitored by evaluating the population response of Lake Trout, Bull Trout, and kokanee.

Lake Pend Oreille/Clark Fork River Walleye Population Assessment:

Walleye, which were illegally introduced into Noxon Reservoir approximately 30 years ago, have become well established throughout Noxon and Cabinet Gorge reservoirs and have reached LPO. An expanding Walleye population has the potential to put several fish populations in LPO at risk through direct predation and competition. This project was first implemented in 2018 to establish fundamental information to help assess the current status of the Walleye population, to evaluate the opportunities for management (suppression), and estimate the likely scope of their influence on the current fish community in LPO. There were two major components to this project: 1) tracking acoustic- and radio-tagged Walleye; and 2) gill netting.

From the telemetry efforts, it was determined that Walleye were concentrated at two main areas during the spring: the Clark Fork River and delta, and the Pack River area west to the eastern edge of Oden Bay. Walleye were more widely distributed during the summer period with loose concentrations of fish located in the Clark Fork River and delta, in shallow warmer bays including Denton Slough, Oden Bay and Kootenai Bay, and downstream to near the Sandpoint Bridges into the Pend Oreille River.

Gill netting proved to be a very effective method for capturing Walleye during the pre-spawn period. Walleye were concentrated in relatively shallow water and catch rates were relatively high while bycatch was reasonably low. In addition, the Fall Walleye Index Netting Project was implemented in 2020 to monitor the relative size of the Walleye population in LPO. Results suggest that Walleye catch rates in LPO have decreased since 2017. A total of 666 Walleye were removed in 2020 (Table 5).

Lake Pend Oreille Experimental Walleye Angler Incentive Program:

This program was first implemented in 2019 in an effort to evaluate the potential to reduce the Walleye abundance in LPO through angling. Anglers participating in the program turned in Walleye heads along with information cards at freezers maintained at access points around LPO. In 2020, anglers turned in 860 Walleye (Table 5).

Table 5. Walleye harvested and removed from LPO, Idaho in 2020 by collection method.

Collection Method	Walleye Harvested
Angling	860
Netting	666
Total	1,526

Box Canyon Reservoir Northern Pike Suppression:

Northern Pike (NP) were illegally introduced in the Clark Fork drainage in Montana and have since immigrated to the Pend Oreille River, where they have caused declines in native species and game fish being managed by the Kalispel Tribe Natural Resources Department (KNRD), Washington Department of Fish and Wildlife (WDFW) and IDFG. Northern Pike range expansion threatens to undermine current and future recovery efforts for Bull Trout and Westslope Cutthroat Trout, as well as other native salmonids, minnows, suckers and introduced game fish within the watershed. Reducing the predatory effect of NP on Bull Trout increases the probability that entrained fish are collected and transported upstream of Albeni Falls Dam to complete their life history and contribute genetic diversity to upstream populations.

After being detected in 2004, the NP population grew exponentially in Box Canyon Reservoir to over 5,500 in 2010. In 2012, KNRD supported by WDFW, and funded in part by Avista under the CFSA, initiated a mechanical suppression program to reduce the population of NP within Box Canyon Reservoir. This suppression has been successful in significantly reducing the NP in Box Canyon Reservoir and efforts since 2015 has been focused on maintaining this greatly reduced NP population through springtime netting and monitoring for effectiveness. The objective of NP suppression is to maintain the abundance of NP in Box Canyon Reservoir at or below the target of <1.73 NP/net night between Pioneer Park and Riverbend (i.e., the southern half of Box Canyon Reservoir) and <0.5 NP/net night north of Riverbend monitored in the annual Spring Pike Index Netting (SPIN) survey.

A total of 115 NP were removed in 155 overnight net sets in 2020. The effort targeted spawning locations to remove mature individuals as they staged to spawn. Due to COVID-19 concerns, efforts were curtailed from the planned five weeks to two weeks of sampling. The SPIN survey mean catch-per-unit-effort (CPUE) was 0.54 NP/net night in the core area that includes the southern half of the reservoir and all sloughs (target <1.7); no NP were captured in the river north of Riverbend (target <0.5). Both CPUE's were within the targets stated in the objectives. Based on 2020 SPIN results, the adult population relative abundance in the core area has been reduced by more than 93% after multiple years of mechanical suppression.

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

The eight-year non-native fish suppression project in the East Fork Bull River was implemented from 2007 through 2014. Based on the results of this project and increases in numbers of adult Bull Trout transported to the East Fork Bull River (and resultant higher redd counts), an extension of this project using less intensive suppression methods was implemented from 2015 through 2020. The less intensive methods of suppression for the East Fork Bull River non-native fish suppression project included the on-site release of non-native trout captured during electrofishing, the transport

and release of non-native trout captured in fish traps to the lower Bull River, and sub-sampling of eggs from Brown Trout redds.

Efforts to remove non-native trout in 2020 began with the April 15 installation of fish traps in the lower East Fork Bull River under the Tributary Trapping and Downstream Juvenile Bull Trout Transport Program. Two weirs in the split channels were partially disabled by a combination of high flows and debris for a total of 17 days from October 12 through November 25. In 2020, a total of 161 non-native salmonids were captured in all traps, with 111 Brown Trout (including 4 recaptures), 48 Brook Trout, and 2 suspected Rainbow and Westslope Cutthroat trout hybrids being transported and released in the lower Bull River. Genetic analysis of eggs sub-sampled from putative Brown Trout redds from 2015 through 2019 confirmed an absence of Bull Trout genetic material. Additional subsamples of eggs were collected from the 16 Brown Trout redds identified in the lower East Fork Bull River in early December 2020. Genetic results from eggs sampled in 2020 will be available at a later date.

A comprehensive evaluation of this project was originally anticipated to include data through 2018 and is in progress. Recognizing two additional years of effort has occurred, the comprehensive report will include data through 2020.

13) Non-native fish management programs shall be adaptively managed, with approval from the Service, in a manner that places priority on maintaining and restoring adfluvial bull trout local populations within the Lake Pend Oreille Core Area.

The MC, including the USFWS, approved an updated NSRP Five-Year Plan in 2018. The purpose of this NSRP Five-Year Plan is to provide the MC with continued and consistent guidance of implementation of the NSRP for the 2019 through 2023 time period. This includes implementation of CFSA appendices A, B, C, and F5 and denotes a need to identify, evaluate, and if appropriate, address non-native species concerns. More specifically, under Appendix C of the NSRP Five-Year Plan, there is agreement that management efforts should be concentrated on those streams known to be utilized by migratory native salmonids (of which Bull Trout are a priority). In 2020 a Project Plan that was to summarize non-native salmonid distribution and abundance in these priority streams and develop a prioritized list of potential actions was approved. Personnel turnover resulted in a delay in implementation of this plan in 2020 however, efforts to compile fisheries data and develop potential management actions for consideration will be undertaken in 2021.

8.1.2.6 Terms and Conditions to Implement RPM #6 and Corresponding Activities

The incidental take statement's RPM #6 states:

Implement the Native Salmonid Restoration Plan and Clark Fork Settlement Agreement (as amended) in a manner consistent with the Final Bull Trout Recovery Plan and Columbia Headwaters Recovery Unit Implementation Plan.

The term and condition (14) and corresponding 2020 activities implementing RPM #6 are listed below.

14) Tributary enhancement programs shall be adaptively managed, with approval from the Service, in a manner that places priority on maintaining and restoring adfluvial bull trout local populations within the Lake Pend Oreille Core Area.

Bull Trout upstream and downstream transport programs were implemented in 2020, as described in RPM #1 and #2, above. These programs are implemented annually to restore adfluvial Bull Trout populations in the lower Clark Fork River–Lake Pend Oreille watershed consistent with the intent of the NSRP and CFSA.

Coordination and outreach to inform and facilitate both the public and cooperating agencies' involvement in tributary habitat protection and enhancement efforts is the principal consideration of the Watershed Councils Program (Appendix E). Efforts in Idaho and Montana in 2020 included holding quarterly meetings between Watershed Council groups and cooperators, the distribution of outreach materials, and assisting with the administration required to help develop watershed restoration plans, secure grants, and execute contracting and permitting necessary for implementing stream enhancement and restoration efforts.

Tributary habitat protection and enhancement to benefit native salmonids is the principal consideration of the Idaho and Montana Tributary Habitat Acquisition and Fishery Enhancement Programs (CFSA appendices A and B). Specific efforts undertaken in 2020 for the furthering of these efforts in Idaho included the cooperative development of stream habitat prioritization evaluations for critical native salmonid tributaries in the Pack River drainage, a project to reconnect lower Johnson Creek for migratory adult Bull Trout, and planning for stream restoration work in Trestle Creek. In Montana, efforts undertaken in 2020 included the continuation of riparian reforestation efforts along the Bull River, the completion of a monitoring report for a large channel reconstruction project and the development of plans for an additional restoration project in the Vermilion River, a pilot habitat enhancement in Graves Creek, and the addition of large woody debris by the selective felling of trees into an area of upper Prospect Creek. Annual fisheries monitoring is conducted under both the Idaho and Montana programs to inform cooperators of the status, abundance, and distribution of species of special concern, non-native species abundance and distribution, and through redd surveys, monitor trends in Bull Trout spawning effort.

8.1.2.7 Terms and Conditions to Implement RPM #7 and Corresponding Activities

The incidental take statement's RPM #7 states:

Implement reporting and consultation requirements as outlined in the terms and conditions below in order to minimize take of bull trout related to implementation of the Native Salmonid Restoration Plan and other fisheries monitoring activities.

The six terms and conditions (15 through 20) and corresponding 2020 activities implementing RPM #7 are listed below.

15) An annual assessment of bull trout populations in the Lake Pend Oreille Core Area shall be prepared and submitted to the Service. The assessment shall be conducted in a manner

consistent with the Clark Fork Settlement Agreement (as amended), and use the best available information (e.g., tributary redd counts).

Bull Trout Redd Surveys in LPO Tributaries:

This is an ongoing activity funded by Avista under CFSA Appendix A and Appendix C. As in past years, the 2020 annual redd count table was provided, by email, to the USFWS from IDFG on December 2, 2020. Following consolidation of Bull Trout and Brown Trout redd information from CFSA appendices B and C personnel, an annual project update will be forwarded to the USFWS from Avista in early 2021.

Lake Pend Oreille Bull Trout Survival Study:

The LPO Bull Trout Survival Study was initiated in 2011 and involves marking juvenile Bull Trout in both Trestle and Granite creeks using PIT tags. Bull Trout in-lake survival is then estimated through monitoring movement patterns of tagged fish from these LPO tributaries using PIT-tag monitoring stations placed near the outlet of these creeks.

In 2020, 68 additional Bull Trout were implanted with PIT tags in Grouse, North Fork Grouse, South Fork Grouse, West Gold, and Rapid Lightning creeks. No Westslope Cutthroat Trout were tagged in 2020 as part of this project. The PIT arrays were maintained to passively monitor movements of these tagged fish. Movements of PIT-tagged Bull Trout were documented both out of and into these tributaries. Movements of PIT-tagged Bull Trout tagged through the LPO Lake Trout Netting Program were also detected in both tributaries. These PIT tag detections provide valuable information on the timing of Bull Trout migratory movements within the basin. Monitoring of fish movements will be necessary for at least eight years to adequately account for the detection of returning adult Bull Trout used to estimate survival.

Demography of Adfluvial Bull Trout in LPO:

This was a continuing activity in 2020. The objectives of this project are to: 1) quantify the effects of netting bycatch on Bull Trout survival and growth; 2) estimate abundance of Bull Trout in LPO; and 3) develop optimal sampling and statistical methodologies, as well as an integrated population demographic model to be used for future Bull Trout monitoring. This project will allow IDFG to evaluate scenarios involving recreational fisheries harvest, varying levels of Lake Trout suppression, and techniques to modify Bull Trout bycatch as Lake Trout netting efforts evolve.

In 2020, the project team completed a draft of the final report, which is currently in internal review and under revision.

16) An assessment of Lake Pend Oreille prey base population trends shall be prepared and submitted to the Service. The assessment shall be conducted in a manner consistent with the Clark Fork Settlement Agreement (as amended), be based on the best available information, and evaluate the need for measures to benefit bull trout prey species in Lake Pend Oreille.

Idaho Department of Fish and Game continued annual monitoring and assessment of LPO prey base population trends. Based upon 2002 interagency discussions and IDFG management actions, IDFG, in consultation with Avista and USFWS, conducted the fifteenth season of a large-scale spring and fall netting operation on LPO in 2020. Periodic updates of this netting operation are

provided to both Avista and USFWS, through email, by IDFG. These program updates constitute Avista's "assessment" and "evaluation of need" for 2020. Annual kokanee total abundance estimates associated with the LPO Lake Trout Netting Program provide further insight into the LPO prey base.

17) An annual report shall be submitted to the Service indicating the actual number of bull trout taken, if any, as well as any relevant biological/habitat data or other pertinent information on bull trout that was collected. This report shall be submitted to the Service by March 31st each year.

This annual report satisfies this term and condition. This was the twentieth year of program implementation. Sampling techniques are always being refined, and new techniques employed. During field activities conducted in 2020, the total number of Bull Trout handled and "the extent of intentional and incidental take" for Bull Trout is described in Table 6. The number of Bull Trout proposed to be intentionally "taken" by each activity in 2021 is also outlined in Table 6.

There were a total of 1,367 Bull Trout capture events during implementation of CFSA Appendix F5 LPO Lake Trout Netting and LPO Angler Incentive programs in 2020, which includes 332 mortalities, and is covered under a separate Section 6 Agreement between the USFWS and IDFG. There were 54 Bull Trout handling events during gill-netting efforts targeting Walleye in LPO under the CFSA Appendix F5 LPO/Clark Fork River Walleye Population Assessment program with 17 incidental Bull Trout mortalities. These mortalities are also reported under the Section 6 agreement between the USFWS and IDFG. There were likely instances where Bull Trout were handled multiple times under the programs described previously and some of these Bull Trout may have been handled during implementation of CFSA Appendix C programs in 2020.

Bull Trout "take" numbers for CFSA Appendix A and Appendix B programs are also reported by MFWP and IDFG personnel as part of their reporting requirements. These numbers are included with CFSA Appendix C Bull Trout "take" numbers in Table 6. There were a total of 68 Bull Trout captured under Appendix A, and none were recaptured in 2020. Appendix B project implementation resulted in the intentional take of 160 unique Bull Trout. One of these fish was recaptured stream electrofishing again during 2020. A total of 1,148 unique Bull Trout were handled during CFSA Appendix C program implementation. Forty-four of these fish were recaptured during 2020 including 37 juvenile Bull Trout that were initially PIT tagged during stream electrofishing efforts and then later recaptured in tributary traps. Six adult Bull Trout transported upstream of Cabinet Gorge Dam in 2020 were later captured in tributary traps in Graves Creek and East Fork Bull River, including one adult that was recaptured twice.

Table 6. Bull Trout take and mortalities reported in 2020 along with proposed intentional take for 2021.

CFSA Program	Capture Events	Unique Bull Trout	Bull Trout Mortalities	Proposed 2021 Bull Trout Take
Appendix A	68	68	0	300
Appendix B	161	160	1	350
Appendix C	1,192	1,148	6	1,500
Total	1,421	1,376	7	2,150

18) An annual report shall be prepared and submitted to the Service that details the next year's proposed activities under the Native Salmonid Restoration Plan and other fisheries monitoring that may result in intentional as well as incidental take of bull trout. The report shall quantify the number of bull trout proposed to be intentionally "taken" by each activity and summarize the extent of intentional take from all previous year's activities. This report shall be submitted to the Service by March 31st each year.

The USFWS, as a member of the MC, reviews and approves AIPs for the NSRP and other fisheries monitoring plans that have the potential to result in take of Bull Trout. This review process begins at the technical level with the Aquatic Implementation Team and continues through the Water Resource Technical Advisory Committee, with final approval of all proposed AIPs occurring at the March MC meeting.

The USFWS also verified that the information reported in this Annual Report is sufficient to cover the requirement for a report quantifying the number of Bull Trout proposed to be intentionally “taken” (see Table 6, above) and summarizing the extent of intentional take from all previous year’s activities.

19) During project implementation the FERC or licensee shall promptly notify the Service of any emergency or unanticipated situations arising that may be detrimental for bull trout relative to the proposed activity.

Avista documented 30 PIT-tagged juvenile Bull Trout that “disappeared” from the Graves Creek permanent weir trap box in the fall of 2020. These fish were known to have entered the trap box based on a sequence of detections on upstream PIT-tag antennas. However, the fish were not in the trap box during the daily check. Eventually, Avista staff suspected mink may have been getting into the trap box and confirmed this through trail camera photographs. The trap box was fortified with hardware cloth and after a couple of iterations it successfully kept mink out of the box. In addition, Avista sought a permit from MFWP to trap the mink who had likely been habituated to Bull Trout in the trap box. Avista received a permit to live trap the mink but was unsuccessful in doing so despite the use of four live traps. Two mink were eventually trapped from the site once the recreational trapping season opened. Based on the ratio of tagged to untagged Bull Trout captured in the permanent weir trap and the 30 fish identified as mink predation, it is estimated that mink preyed on greater than 300 juvenile Bull Trout from the trap box during the fall of 2020. In addition, two adult Bull Trout were injured and one succumbed to injuries sustained when

mink were in the trap box. Avista communicated and worked closely with the USFWS throughout the 2020 mink challenges.

20) Upon locating dead or injured bull trout, or upon observing destruction of bull trout redds, the FERC or licensee shall notify the Service within 24 hours. The FERC or licensee shall record information relative to the date, time, and location of dead or injured bull trout when found, and possible cause of injury or death of each fish and provide this information to the Service.

As directed by the USFWS, notifications of all dead or injured Bull Trout were sent to the USFWS representatives Kevin Aceituno and Ben Conard, located in Creston, Montana. Bull Trout mortalities were reported to the USFWS on four occasions during 2020. The first report was submitted on August 6 and covered four juvenile Bull Trout mortalities that occurred on August 4 and 5. Three of these mortalities were caused by electrofishing associated with the Bull Trout Emigration Study. The fourth mortality was caused by cannibalism and identified during the Bull Trout Emigration Study. The second report was for an adult Bull Trout that succumbed to injuries sustained during night electrofishing activities downstream of Cabinet Gorge Dam on August 18. This mortality was reported to the USFWS on August 19. The third report was submitted on October 6 for a post-spawn adult Bull Trout that was recovered from the Graves Creek permanent weir trap box as a mortality on October 5. It is believed that this fish died of injuries sustained when a mink entered the trap box. The last report was submitted on October 16 and pertained to a juvenile Bull Trout mortality that was observed downstream from the Graves Creek permanent weir trap during the redd survey on October 15. It is believed this fish was killed by a mink and removed from the Graves Creek trap box.

8.1.2.8 Terms and Conditions to Implement RPM # 8 and Corresponding Activities

The incidental take statement's RPM #8 states:

Construct and operate the CGDF consistent with Amendment #1 of the Clark Fork Settlement Agreement, and the Clark Fork Project License (including amendments).

The five terms and conditions (21 through 25) and corresponding 2020 activities implementing RPM #8 are listed below.

21) The FERC or licensee shall ensure that construction, operation, and maintenance of the CGDF remain consistent with the proposed action described in the final Biological Assessment (Avista and FERC 2017). The Service shall be promptly notified of any changes to construction, operations or maintenance activities.

One minor change was made to the design of the CGDF in 2020. The fabrication of a roll up door to isolate the holding pool was not feasible, so the project team decided to use a swing door instead. This design change was approved by the USFWS.

The schedule for construction of the CGDF was impacted by several factors in 2020. In early 2020, excavation of the bedrock within the cofferdam was halted due to FERC concerns related to the

stability of the thrust block, thrust block extension, and structure excavation. A new stability analysis was completed to verify previous analyses, and the FERC gave the approval to move forward with excavation, resulting in an initial three-month and ultimately a six-month overall delay to the project due to the nature of the limited work window during spill season. High flows in the spring of 2020 caused damage to the cofferdam sheet piles primarily on the north and northeast walls, compounding the delays to the project. The cofferdam was repaired by the end of September 2020. The updated CGDF construction schedule shows a completion date of spring 2022, with commissioning of the CGDF occurring post spill 2022. Avista plans to continue with construction and operate and maintain the CGDF consistent with the proposed action described in the final Biological Assessment.

22) The fish salvage plan shall be completed and approved by the Service prior to construction of the cofferdam.

The USFWS approved the CGDF Fish Salvage Plan on February 12, 2019; followed by approval by FERC on November 19, 2019. High flows in the spring of 2020 caused damage to the cofferdam sheet piles primarily on the north and northeast walls. The cofferdam was repaired by the end of September 2020 and Avista personnel performed fish salvage efforts consistent with the USFWS and FERC approved Fish Salvage Plan. These activities were reported to the appropriate stakeholders.

23) The FERC or licensee shall provide an annual report to the Service detailing the progress of CGDF construction. This report shall be submitted to the Service by March 31st each year.

This annual report, including the discussion under term and condition 3, satisfies this requirement.

24) The FERC or licensee shall provide an annual report to the Service detailing the past year's operation of the CGDF, including the number of bull trout that interacted with the CGDF and any mortality. This information can be included in the annual report required under T&C 17 above and shall be submitted to the Service by March 31st each year.

The CGDF is currently under construction and is scheduled to be operational in the summer of 2022.

25) Any shut-downs of the CGDF during normal operating conditions, as agreed to in the Clark for Settlement Agreement (as amended), shall be reported within 24 hours to the Service.

The CGDF is currently under construction and is scheduled to be operational in the summer of 2022.

8.1.3 Key 2020 References

Adams, B., M. Piteo, and J. Von Bargen. 2020. Genetic Analysis of Native Salmonids from the Lake Pend Oreille and Clark Fork River System, Idaho and Montana. Annual Report for Calendar Year 2019. Avista document identification number 2020-0165.

Adams, B., M. Piteo, and J. Von Bargen. *In prep.* Genetic Analysis of Native Salmonids from the Lake Pend Oreille and Clark Fork River System, Idaho and Montana. Annual Report for Calendar Year 2020.

Aquatic Implementation Team. 2018. Clark Fork River Native Salmonid Restoration Plan. Five-Year Plan (2019–2023). Avista document identification number 2018-0318. Prepared for The Clark Fork Management Committee.

Avista. July 11, 2002. Annual 2001 reports on Threatened and Endangered Species Plan (License Article 432) and Fishway Plan (License Article 433), as presented to MC; reports contain revised format that will be included in future *Clark Fork Project Annual Reports on Implementation of PM&E Measures*. Avista document identification number 2002-0184.

Avista. December 24, 2002. Letter sending the Proposed Gas Supersaturation Control Plan to USFWS, IDEQ and FERC for approval. Avista document identification number 2002-0483. Avista, Noxon, Montana.

Avista. 2009. Final 2009 Addendum. Final Gas Supersaturation Control Program for the Clark Fork Project. Avista document identification number 2009-0290. Avista, Noxon, Montana.

Avista. August 7, 2015. Correspondence via letter to IDEQ, MTDEQ, USFS, IDFG, MFWP, KTI and USFWS regarding Cabinet Gorge Dam – Minimum Flow. Avista document identification number 2015-0242. Avista, Noxon, Montana.

Avista. 2020. Consent Mail approval of 2019 Avista CFSA Annual Budget Report, 2020 Aquatic Annual Implementation Plans, 2020 Terrestrial Annual Implementation Plans, 2020 Clark Fork Heritage Resource Program Annual Implementation Plan, and Appendix D Implementation Plan for the Bull Trout Protection and Public Education Project 2020-2024 (March 23, 2020). Avista document identification number 2020-0070.

Avista. 2020. Memoranda and associated information pertaining to deviations from the Cabinet Gorge Dam General Operating Limit for minimum flow in association with Cabinet Gorge Dam Fishway cofferdam construction. Avista document identification number 2020-0159.

Avista. Passive Integrated Transponder (PIT) Tag Database; for more information on this database contact Shana Bernall (Shana.Bernall@avistacorp.com).

Avista. 2020. Biological Opinion Condition 20 Report regarding Bull Trout (September 2, 2020). Avista document identification number 2020-0151.

Avista. 2020. Biological Opinion Condition 20 Report regarding Bull Trout (October 15, 2020). Avista document identification number 2020-0184.

- Avista. 2020. Biological Opinion Condition 20 Report regarding Bull Trout (November 10, 2020). Avista document identification number 2020-0194.
- Bernall, S., E. Oldenburg, and S. Moran. 2020. Fish Passage/Native Salmonid Restoration Plan Appendix C, 2020 Annual Work Summary. Avista document identification number 2020-0251.
- Bernall, S., K. Duffy, and J. Johnson. *In prep.* Upstream Fish Passage Program. Comprehensive Project Report (2001–2019).
- Bernall, S., K. Duffy and J. Johnson. *In prep.* Upstream Fish Passage Program. Annual Project Update – 2020.
- Blakney, J., and T. Tholl. *In prep.* Native Salmonid Abundance and Tributary Habitat Restoration Monitoring: Annual Project Update – 2019.
- Blakney, J. 2019. Montana Tributary Habitat Acquisition and Recreational Fishery Enhancement Program (Appendix B) Annual Work Summary 2020. Avista document identification number 2020-0261.
- Blakney, J., K. Aceituno, and S. Moran. *In prep.* Evaluation of Potential Actions for Reducing Non-native Threats to Native Salmonid Populations.
- Bouwens, K., A. Ransom, and P. Kusnierz. 2020. Idaho Tributary Habitat Acquisition and Fishery Enhancement Program Appendix A 2020. Annual Work Summary. Avista document identification number 2020-0247.
- Bouwens, K., A. Ransom, P. Kusnierz, E. Oldenburg, S. Harvey, N. Bean, and K. Lowell. 2020. Dissolved Gas Supersaturation Control, Mitigation, and Monitoring Appendix F5 2020. Annual Work Summary. Avista document identification number 2020-0262.
- Bowman, S., and B. Olson. 2019. Lower Clark Fork Tributary Watershed Restoration Plan. Avista document identification number 2019-0344.
- Brisette, C. *In prep.* Graves Creek Pilot Habitat Enhancement Project. Two-year, post-runoff technical review of substrate changes.
- Brisette, C. *In prep.* Upper Prospect Creek LWD Project. Two-year, post-runoff technical review of physical habitat and substrate changes.
- Dux, A. 2020. December 2, 2020 email to USFWS containing Lake Pend Oreille Bull Trout Redd Count data. Avista document identification number 2020-0210.
- Erickson, J., S. Garcia, and B. Olson. 2020. Watershed Councils Program (Appendix E). 2020 Annual Work Summary. Avista document identification number 2020-0246.

- FERC. 2000. Order Issuing New License for Clark Fork Project No. 2058, effective date March 1, 2001. Avista document identification number 2000-0047.
- FERC. 2005. Order Approving Gas Supersaturation Control Program Per Articles 413, 432, and Appendices D and F5. Avista document identification number 2005-0007.
- FERC. 2010. License Order Approving the Addendum to Gas Supersaturation Control Program per License Article 413 and Appendix F5. Avista document identification number 2010-0035.
- FERC. 2017. Order Amending Minimum Flow Pursuant to Article 429. Avista document identification number 2017-0382.
- FERC. 2020. Order Approving 2019 Annual Report and 2020 Implementation Plans Per Article 402, Annual Threatened and Endangered Species Plan Per Article 432, and Annual Fishway Plan Per Article 433 (April 28, 2020). Avista document identification number 2020-0152.
- FERC. 2019. Order Amending License and Approving Exhibits A and F (August 8, 2019). Avista document identification number 2019-0175.
- FERC. 2019. Order Approving Fish Salvage Plan (November 19, 2019). Avista document identification number 2019-0298.
- Frawley, S., R. Jakubowski, and K. A. Bouwens. 2020. 2019 Idaho Tributary Salmonid Abundance Monitoring Annual Project Update. Avista document identification number 2020-0068.
- Harvey, S., and N. Bean. 2020. Box Canyon Northern Pike Suppression Project. Annual Project Update 2020. Avista document identification number 2020-0260.
- IDFG. *In prep.* 2020 Idaho Tributary Salmonid Abundance Monitoring. Annual Project Update.
- Kleinschmidt Associates and K. L. Pratt. July 1998. Clark Fork River Native Salmonid Restoration Plan. Avista document identification number 1998-0469.
- Kreiner, R., M. Terrazas, and T. Tholl. 2020. Noxon Rapids and Cabinet Gorge Reservoirs Fisheries Monitoring Comprehensive Report: 2016-2018 Including Data From: 1999-2018. Avista document identification number 2020-0023.
- Kreiner, R., and T. Tholl. *In prep.* Noxon and Cabinet Gorge Reservoirs Fisheries Monitoring 2017. Annual Project Update.
- Kusnierz, P. 2020. Total dissolved gas monitoring 2020 Cabinet Gorge and Noxon Rapids Dams. Avista document identification number 2020-0187.

- MFWP. 2014. Administrative Rules of Montana (ARM) Amendment. Avista document identification number 2014-0501.
- Moran, S. *In prep.* Lower Clark Fork River, Montana – Avista Project Area – 2020 Annual Bull Trout and Brown Trout Redd Survey. Annual Project Update.
- Moran, S., P. Kusnierz, and J. Storaasli. *In prep.* Non-Native Fish Suppression Project in the East Fork Bull River Drainage, Montana: 2007–2020. Project Completion Report.
- Mucciarone, N., M. Corsi, M. Hurley, J. McCormick, E. Roche, K. A. Bouwens, and P. Kusnierz. *In prep.* Population dynamics of adfluvial Bull Trout in Lake Pend Oreille.
- Oldenburg, E. W. *In prep.* Tributary Trapping and Downstream Juvenile Bull Trout Transport Program. Comprehensive Project Report - 2018–2020. (includes Graves Creek permanent weir trap monitoring and evaluation plan report as an appendix).
- Ransom, A., S. Frawley, N. Mucciarone, P. Rust, R. Jakubowski, K. A. Bouwens. 2020. 2019 Lake Pend Oreille Predator Management Program Project Update. Annual Project Update. Avista document identification number 2020-0164.
- Ransom, A., P. Rust, R. Jakubowski, K. A. Bouwens. *In prep.* 2020 Lake Pend Oreille Predator Management Program. Annual Project Update.
- Ransom, A., S. Frawley, R. Jakubowski, K. A. Bouwens. 2020. 2019 Pend Oreille Basin Bull Trout Redd Monitoring Project Update. Annual Project Update. Avista document identification number 2020-0147.
- Ransom, A., R. Jakubowski, K. A. Bouwens. *In prep.* 2020 Pend Oreille Basin Bull Trout Redd Monitoring. Annual Project Update.
- Ransom, A., R. Jakubowski, and K. A. Bouwens. *In prep.* 2011–2019 Lake Pend Oreille Bull Trout Survival Study. Project Completion Report.
- Sprague, L. 2020. 2019 Survey for Selected Fish Pathogens in the Lower Clark Fork River and Lake Pend Oreille in Idaho. Avista document identification number 2020-0067.
- Sprague, L. *In prep.* 2020 Survey for Selected Fish Pathogens in the Lower Clark Fork River and Lake Pend Oreille in Idaho.
- USFS. 2019. Decision Memo Native Fish Restoration Project. Avista document identification number 2019-0050.
- USFWS. 2019. Endangered Species Act Section 7 Consultation Biological Opinion. Avista document identification number 2019-0026.

8.2 Fishway Plan and Annual Report (License Article 433 – Amended June 13, 2003)

8.2.1 Purpose

Article 433 of the FERC License (License) requires that, on or before April 15 of each year and after consultation with the MC, the Licensee file for Commission approval a Fishway Plan and Annual Report. The Plan must address the Licensee's compliance with the USFWS Section 18 fishway prescriptions contained in CFSA Appendix C to the License, including a detailed description of any fish passage devices or measures and any proposed modifications to project facilities or operations; documentation of any consultations; copies of comments and recommendations received on the completed plan; and specific descriptions of how entities' comments are accommodated by the Plan or Avista's reasons for not including such comments, based on Project-specific information.

In 2002, Avista and USFWS agreed that the Article 433 Fishway Plan requirement, as well as Avista's annual reporting and consultation requirements for CFSA appendices A, B, and C (License Articles 404, 405 and 406) are adequately addressed through the AIPs, which are approved by the MC, and by providing the annual activity summaries contained in this section of the Annual Report. Section 8.2.2 below provides the 2020 activity report for these PM&E measures, which comprises Avista's Fishway Plan and is intended to satisfy Avista's annual reporting requirement for these measures.

8.2.2 2020 Activity Summary

8.2.2.1 Prescription 1 Conditions and Corresponding Activities

Prescription 1 Description

USFWS's Section 18 Prescription 1 states the following:

The licensee shall assess, plan, design, construct, operate, and maintain upstream fishway devices or measures and downstream fish protection devices or measures in accordance with the Native Salmonid Restoration Plan (Plan) (License Application Volume IV.A). Construction, operation, and maintenance of fishways will proceed in a stepwise manner, beginning at the effective date of the Settlement Agreement (License Application Volume III), utilizing the principles of adaptive management (i.e., the ability to change program direction based on new information provided by monitoring and evaluation of experimental measures). Following initial feasibility assessments, and within one year of the effective date of the Settlement Agreement, an experimental fish trap and truck program for the purpose of moving bull trout from below Cabinet Gorge Dam to the Cabinet Gorge Reservoir pool shall be constructed, operated, and maintained. Assessment and implementation of other fish stock enhancement measures shall begin at the effective date of the Settlement Agreement, as described in the Plan. Evaluation of the effectiveness of the fish trap and truck program below Cabinet Gorge, and evaluation of other stock enhancement measures will determine the timing of construction, operation, and maintenance of other upstream fishway

facilities and measures and downstream fish entrainment protection devices at Cabinet Gorge and Noxon Rapids Dams.

2020 Activities Associated with Prescription 1

Adult Bull Trout Capture and Transport:

Bull Trout capture efforts downstream of Cabinet Gorge Dam and subsequent upstream transport have occurred annually since 2001. The goal of this program is to reconnect adult Bull Trout with their most likely tributary of origin based on genetic testing or capture history, in order to increase the number of spawning Bull Trout in Montana tributaries. Efforts to collect Bull Trout occurred from early April through mid-October 2020, with a total of 20 individual adult Bull Trout (defined as greater than 350 mm in length for upstream transport purposes) captured in the lower Clark Fork River downstream of Cabinet Gorge Dam utilizing three collection methods: night electrofishing, hook-and-line sampling, and the Cabinet Gorge Hatchery Ladder trap. Captured fish were held at the CGFHF while awaiting a genetic population assignment from the genetics laboratory. Eighteen Bull Trout were transported upstream to Montana based on genetic assignments or previous capture histories and were released in: Cabinet Gorge Reservoir or its tributaries (7), Noxon Reservoir or its tributaries (7), or upstream of Thompson Falls Dam (4). No Bull Trout genetically assigning to Lightning Creek tributaries were captured or transported to the East Fork Bull River in 2020.

A new study was initiated in 2020 to evaluate the reproductive contribution of Bull Trout (both those transported upstream and those that reside in the stream or reservoir) in Graves Creek and East Fork Bull River. This study is similar to the previous parentage study implemented in these drainages from 2008 through 2010. Fin tissue samples were collected from juvenile Bull Trout captured in both drainages and the genetics lab will be conducting the parentage assignments over the winter. One outcome of this research is to determine if Bull Trout genetically assigning to the Lightning Creek drainage were successful in reproducing in the East Fork Bull River. Passive Integrated Transponder arrays in the East Fork Bull River and mainstem Bull River have documented a portion of these Bull Trout remaining in the East Fork Bull River during the spawning period and then migrating out of the drainage in the fall. Redd surveys in the East Fork Bull River have also provided valuable evidence that points toward a portion of these fish reproducing. The genetic parentage study will be the final piece of the puzzle that will prove whether these Bull Trout reproduced, and this information will be invaluable in helping define future Bull Trout management actions.

Westslope Cutthroat Trout Experimental Transport:

This was the sixth year Westslope Cutthroat Trout were captured downstream of Cabinet Gorge Dam and transported upstream to Cabinet Gorge Reservoir. Night electrofishing and hook-and-line sampling were utilized to capture 40 fish for upstream transport. No radio transmitters were implanted in Westslope Cutthroat Trout transported upstream in 2020. The management goal for passage is to reestablish connectivity and increase the number of large migratory Westslope Cutthroat Trout available to spawn in Montana tributaries. Fish were transported upstream from mid-April through mid-June and were released at the Big Eddy Recreation Area boat ramp in Cabinet Gorge Reservoir. Ten of the 40 transports were detected entering the Bull River drainage

during the spring spawning time period, and one of these fish was detected on a PIT array moving upstream into the East Fork Bull River.

Cabinet Gorge Dam Permanent Fishway:

The schedule for construction of the CGDF was impacted by several factors in 2020. In early 2020, excavation of the bedrock within the cofferdam was halted due to FERC concerns related to the stability of the thrust block, thrust block extension, and structure excavation. A new stability analysis was completed to verify previous analyses, and the FERC gave the approval to move forward with excavation, resulting in an initial three-month and ultimately a six-month overall delay to the project due to the nature of the limited work window during spill season. High flows in the spring of 2020 caused damage to the cofferdam sheet piles primarily on the north and northeast walls, compounding the delays to the project. The cofferdam was repaired by the end of September 2020 and Avista personnel performed fish salvage efforts consistent with the USFWS and FERC approved Fish Salvage Plan. These activities were reported to the appropriate stakeholders. Quarterly updates were provided to the MC on the progress of the project. Monthly construction reports were submitted as required by permitting and approval agencies (i.e., FERC Portland Regional Office).

Excavation of the bedrock within the cofferdam continued during the fall along with the installation of the siphon piping along the wing dam into the forebay, and construction of the walkways and framework for the intake screens in the forebay. The contractor began pouring the concrete for the various components of the fish trap in December with a goal to have the concrete work completed prior to spill in 2021. The updated CGDF construction schedule shows a completion date of spring 2022, with commissioning of the CGDF occurring post spill 2022.

In 2019 the MC agreed to develop a monitoring and evaluation plan for the CGDF as an alternative to updating the basic monitoring program document that was originally developed in 2013. Any changes to the design of the fish trap that may impact the basic monitoring program document would be captured in the monitoring and evaluation plan that is currently being drafted. Other documents that need to be developed in preparation for operation of the CGDF, including a transport protocol, will be addressed in 2021 when more detail is available on how the CGDF will be operated and as commissioning of the CGDF gets closer.

To prepare for operation of the CGDF several upgrades were needed at the CGFHF. The design drawings for these modifications were completed during the spring and summer of 2020 and a contractor was selected in the fall. A consent mail requesting additional funds for construction of the modifications to the CGFHF was approved in the fall. Construction was initiated in October with an anticipated completion date in May 2022.

Noxon Rapids Dam Permanent Fishway:

No new work was proposed or conducted for the Noxon Rapids Dam Permanent Fishway and fish handling facility project in 2020. Based on agreements made in Amendment No. 1 to the CFSA, final design and construction of the Noxon Rapids Dam Permanent Fishway shall be deferred for an interim period ending no sooner than December 31, 2021 (see previous annual reports for additional information).

Downstream Fish Passage:

Safe downstream passage of Bull Trout is addressed through the Tributary Trapping and Downstream Juvenile Bull Trout Transport Program. Under this program, juvenile Bull Trout are captured in traps during their outmigrations, or through targeted stream electrofishing efforts. Following capture, juvenile Bull Trout are measured, implanted with a PIT tag, and transported to the Clark Fork River downstream of Cabinet Gorge Dam where they are released. In addition, adult Bull Trout that were previously transported upstream and are recaptured in tributaries following the spawn are transported back to the Clark Fork River downstream of Cabinet Gorge Dam (albeit, in consultation with the USFWS, the decision was made to release one-half of the post-spawn adults captured within Graves Creek on site so that the benefits and limitations of this strategy can be directly evaluated).

Fish trapping and transport for the 2020 season began on April 15 with the installation of the Graves Creek permanent weir trap and two screw traps in the East Fork Bull River (upper south channel and middle south channel). All traps were disabled on July 2. Trapping resumed on August 31 with the installation of the Graves Creek permanent weir trap, and in the East Fork Bull River on September 1 (upper south channel) and September 2 (upper north channel). These traps fished continuously through December 4 with the exception of the Labor Day and Thanksgiving holidays as well as periods where the traps were partially fishing due to environmental conditions. Vermilion River electrofishing was conducted in an effort to capture juvenile Bull Trout for downstream transport for ten days ranging from October 19 through November 6.

There were a total of 692 capture events of 691 individual juvenile (i.e., <300 mm in length) Bull Trout during 2020. A total of 629 120–250 mm Bull Trout were captured in Montana tributaries and transported to Idaho during 2020 (Table 1). An additional 63 juvenile Bull Trout were captured and released on site because they did not meet one or more of the transport criteria (i.e., fish length or direction of travel). Following capture, fish were measured (length and weight) and implanted with a PIT tag if they were greater than 99 mm and if a PIT tag was not already present. All juvenile transports were released in the lower Clark Fork River at the Cabinet Gorge Fish Hatchery site.

There were no Bull Trout mortalities directly associated with fish capture during 2020. However, in the fall of 2020 it was discovered that mink were getting into the Graves Creek trap box and predated on juvenile Bull Trout. Corrective actions were undertaken in consultation with the USFWS including fortifying the trap box and attempting to capture the problem mink. Unfortunately, the use of four live traps failed to capture any mink. However, two mink, a boar and a sow, were captured once the recreational trapping season opened. In total, 30 PIT-tagged juvenile Bull Trout were predated on from within the trap box. Based on the ratio of tagged to untagged Bull Trout captured in the trap this fall, we estimate that mink predated on over 300 juvenile Bull Trout as well as injured two adult Bull Trout and caused the mortality of one adult Bull Trout. As described in the 2019 Biological Opinion, the USFWS anticipates and acknowledges that direct intentional take as well as incidental take of Bull Trout will occur on an annual basis related to implementation of the NSRP and other proposed fisheries monitoring activities. Therefore, the implementation of these programs and the Bull Trout handled (including mortalities) through these programs are consistent with the USFWS incidental take statement's take authorization. Avista will work with the USFWS to implement actions to reduce the likelihood of future mink predation.

There were seven capture events of six individual adult Bull Trout in tributary traps during 2020. Four of these fish were captured following the spawn and transported to Idaho (two each from Graves Creek and the East Fork Bull River). One fish was captured early during the spawn period and released back upstream. The final fish succumbed to injuries related to mink getting into the trap box.

Table 1. Tributary and method of capture for juvenile Bull Trout transported to Idaho under the Tributary Trapping and Downstream Juvenile Bull Trout Transport Program in 2020.

Tributary	Method	Bull Trout Transported
Graves Creek	Permanent Weir	489
East Fork Bull River	Weir/Screw Trap	48
Vermilion River	Stream Electrofishing	92
Total		629

Following a feasibility investigation, Avista constructed a concrete-bedded weir trap (permanent weir trap) on lower Graves Creek in late 2012 and initiated operation in 2013. Operation of the permanent weir trap was anticipated to facilitate higher capture efficiencies for outmigrating juvenile Bull Trout, particularly during periods of higher streamflow that proved difficult to trap with existing methodologies. The Graves Creek Permanent Weir Trap Monitoring and Evaluation Plan was completed in 2013 and was designed to evaluate the operation and fish capture effectiveness of the permanent weir trap. The plan was updated during 2017 and continues to be implemented.

From the inception of permanent weir operation through 2018, a number of issues were identified and iteratively addressed by Avista, MFWP, and USFWS. After careful consideration and extensive testing of a prototype, an engineering firm was hired to design substantial enhancements to the permanent weir trap. Design was finalized in December and construction of the enhancements is planned for the summer of 2021. In addition, due to the marked increase in the number of juvenile Bull Trout during 2019 and 2020, Avista is currently constructing a fish handling facility near the permanent weir trap that will provide protected, flow-through stream water to minimize stress while holding and working up fish prior to transport or release.

8.2.2.2 Prescription 2 Conditions and Corresponding Activities

Prescription 2 Description

USFWS's Section 18 Prescription 2 states the following:

At the effective date of the Settlement Agreement (License Application Volume III), the licensee shall develop and implement a fish passage program in accordance with the terms of the Clark Fork Settlement Agreement and the Native Salmonid Restoration Plan (License Application Volume IV.A). Implementation of the Plan shall include initial project scoping activities resulting in goals and objectives; background information, compilation and updating in areas of fish

genetics, fish pathogens, exotic fish control, existing fish populations, stream and mainstem habitat conditions; assessment of suitable fish stock availability, fish transfer options, and fish hatchery options; and implementation of experimental and comprehensive fish passage measures, as appropriate, and a monitoring program to assess the effectiveness of fishways and other measures.

2020 Activities Associated with Prescription 2

Avista continued to provide safe, timely, and efficient fish passage in 2020, adaptively managed in consultation with USFWS and other MC members. Following approval of the CFSA Amendment by the MC, Avista and stakeholders reinitiated development of the next NSRP Five-Year Plan. The updated NSRP Five-Year Plan for the 2019–2023 time period was approved at the September 25, 2018 MC meeting. In 2020, the USFWS reviewed and approved AIPs, including those related to Bull Trout passage. The USFWS received the project plans that were approved by the MC, which the USFWS is a member of, in April 2020. The pertinent project plans include:

- Upstream Fish Passage Program
- Graves Creek and East Fork Bull River Genetics Study
- Tributary Trapping and Downstream Juvenile Bull Trout Transport Program
- Bull Trout Emigration Study
- Non-Native Fish Suppression Project in the East Fork Bull River
- Redd Surveys in Montana Tributaries
- Fish Capture Facilities Operation, Development, and Testing
- Graves Creek Permanent Weir Trap Enhancements

Assessing and/or improving stream and mainstem habitat conditions and the implementation of a monitoring program to assess the effectiveness of fishways and other measures are activities addressed through the coordinated implementation of CFSA appendices A, B, C, and F5.

8.2.3 Key 2020 References

Adams, B., M. Piteo, and J. Von Bargen. 2020. Genetic Analysis of Native Salmonids from the Lake Pend Oreille and Clark Fork River System, Idaho and Montana. Annual Report for Calendar Year 2019. Avista document identification number 2020-0165.

Adams, B., M. Piteo, and J. Von Bargen. *In prep.* Genetic Analysis of Native Salmonids from the Lake Pend Oreille and Clark Fork River System, Idaho and Montana. Annual Report for Calendar Year 2020.

Aquatic Implementation Team. 2018. Clark Fork River Native Salmonid Restoration Plan. Five-Year Plan (2019–2023). Avista document identification number 2018-0318.

Avista. 2017. Management Committee meeting minutes (September 26, 2017). Avista document identification number 2017-0434.

- Avista. 2020. Consent Mail approval of 2019 Avista CFSA Annual Budget Report, 2020 Aquatic Annual Implementation Plans, 2020 Terrestrial Annual Implementation Plans, 2020 Clark Fork Heritage Resource Program Annual Implementation Plan, and Appendix D Implementation Plan for the Bull Trout Protection and Public Education Project 2020-2024 (March 23, 2020). Avista document identification number 2020-0070.
- Bernall, S., E. Oldenburg, and S. Moran. 2020. Fish Passage/Native Salmonid Restoration Plan Appendix C, 2020 Annual Work Summary. Avista document identification number 2020-0251.
- Bernall, S., K. Duffy, and J. Johnson. *In prep.* Upstream Fish Passage Program. Comprehensive Project Report (2001–2019).
- Bernall, S., K. Duffy and J. Johnson. *In prep.* Upstream Fish Passage Program. Annual Project Update – 2020.
- Bernall, S., and J. Johnson. *In prep.* Clark Fork River Westslope Cutthroat Trout Experimental Transport Program. Comprehensive Project Report (2015–2018).
- FERC. 2000. Order Issuing New License for Clark Fork Project No. 2058, effective date March 1, 2001. Avista document identification number 2000-0047.
- FERC. 2020. Order Approving 2019 Annual Report and 2020 Implementation Plans Per Article 402, Annual Threatened and Endangered Species Plan Per Article 432, and Annual Fishway Plan Per Article 433 (April 28, 2020). Avista document identification number 2020-0152.
- FERC. 2019. Order Amending License and Approving Exhibits A and F (August 8, 2019). Avista document identification number 2019-0175.
- FERC. 2019. Order Approving Fish Salvage Plan (November 19, 2019). Avista document identification number 2019-0298.
- Oldenburg, E. W. *In prep.* Tributary Trapping and Downstream Juvenile Bull Trout Transport Program. Comprehensive Project Report - 2018–2020 (includes Graves Creek permanent weir trap monitoring and evaluation plan report as an appendix).
- USFWS. 2019. Endangered Species Act Section 7 Consultation Biological Opinion. Avista document identification number 2019-0026.

8.3 Other Clark Fork License Articles

8.3.1 Purpose

This section of the Annual Report highlights any annual activities (Section 8.3.2) that occurred in 2020 associated with other License Articles for the Clark Fork Project No. 2058 that do not directly tie to a specific CFSA PM&E measures.

8.3.2 2020 Activity Table

License Article Number	License Article Description	2020 Activity
438	Dispute Resolution	No activity occurred
439	Rock Creek Mine Discharge Facility	No activity occurred
440	Revised License Exhibit G	No activity occurred
441	Alterations per Fish and Wildlife Program	No activity occurred
442	Permission for Use and Occupancy of Project Lands and Waters	See Section 8.3.2.1
443	Construction, Operation, and Maintenance of Fishways	See Section 8.2.2.1

8.3.2.1 Permission for use and Occupancy of Project Lands and Waters

In 2020, Avista granted permission for certain types of use and occupancy of Project lands and waters to comply with CFSA appendices G and H (License Articles 414 and 415). Uses and occupancy are included in sections 7.1 and 7.2 of this report. Avista conveyed no new easements in 2020.

8.3.3 Key 2020 References

Avista. 2020. Avista Property Use Permits, 2020. Avista document identification number 2020-0016.

Section 9: Federal Energy Regulatory Commission Issues and Actions

9.1 Purpose

The purpose of this section is to inform FERC of any “out of the ordinary” issues pertaining to the implementation of the Clark Fork License No. 2058 and any items requiring FERC action through December 31, 2020. The FERC-related activities for 2020 (such as FERC filings, FERC orders, and FERC correspondence), and FERC awareness items (such as Clark Fork Settlement Agreement PM&E measure modifications and clarifications and specific issues of interest) are also included in this section of the Annual Report.

9.2 FERC Activities/Awareness

In 2020, FERC activities related to the Clark Fork Project included the following:

- Avista’s April 3, 2020 submittal of the 2019 Clark Fork Annual Report and the 2020 Clark Fork Annual Implementation Plans.
- FERC’s April 28, 2020 Order Approving 2019 Annual Report and 2020 Implementation Plans Per Article 402, Annual Threatened and Endangered Species Plan Per Article 432, and Annual Fishway Plan Per Article 433.
- Avista’s September 2, 2020 submittal of a Biological Opinion Condition 20 Report regarding Bull Trout Mortality for August 2020.
- Avista’s October 15, 2020 submittal of a Biological Opinion Condition 20 Report regarding Bull Trout Mortality for October 2020.
- Avista’s November 10, 2020 submittal of a Biological Opinion Condition 20 Report regarding Bull Trout Mortality for November 2020.

9.3 Key 2020 References

Avista. 2020. 2019 Clark Fork Annual Report and the 2020 Clark Fork Annual Implementation Plans (April 3, 2020). Avista document identification number 2020-0056.

Avista. 2020. Biological Opinion Condition 20 Report regarding Bull Trout (September 2, 2020). Avista document identification number 2020-0151.

Avista. 2020. Biological Opinion Condition 20 Report regarding Bull Trout (October 15, 2020). Avista document identification number 2020-0184.

Avista. 2020. Biological Opinion Condition 20 Report regarding Bull Trout (November 10, 2020). Avista document identification number 2020-0194.

FERC. 2020. Order Approving 2019 Annual Report and 2020 Implementation Plans Per Article 402, Annual Threatened and Endangered Species Plan Per Article 432, and Annual Fishway Plan Per Article 433 (April 28, 2020). Avista document identification number 2020-0152.

Section 10: Amendments, Modifications, and Clarification of License Articles

10.1 Purpose

This portion of the Annual Report highlights and summarizes all amendments, modifications, and/or clarifications (other than one-time filing extensions or Exhibits and annual approvals) made to the License for Clark Fork Project No. 2058, through December 31, 2020. Note that terms and conditions of the original license took effect on March 1, 2001.

Each FERC amendment, modification, or clarification to/of an existing license article are included in Section 10.2. The date of each amendment, modification, or clarification is also documented. There were no activities in 2020.

10.2 Amendments/Modifications/Clarifications of License Articles for Clark Fork Project No. 2058

Article Number	Description	Date Amended or Clarified
L-2	Exhibit Drawings	10/29/2013
201	Authorized Installed Capacity and Annual Charges	07/13/2006
201	Authorized Installed Capacity and Annual Charges	10/10/2006
201	Annual Charges and Exhibit A	06/15/2007
201	Authorized Installed Capacity and Annual Charges	04/10/2008
201	Exhibit G Drawings and Annual Charges	02/10/2009
201	Exhibit G Drawings and Annual Charges	10/09/2014
204	Exhibit F and Exhibit G Drawings	01/09/2002
412	Water Quality Protection and Monitoring Plan	12/10/2002
412	Water Quality Protection and Monitoring Plan	06/23/2011
413	Exhibit F Drawings	11/18/2016
413	Exhibit F Drawings	03/01/2018
413	Exhibit A and Exhibit F Drawings	08/08/2019
427	Programmatic Agreement	10/30/2000
429	Minimum Flows	12/18/2017
431	Coordination of Flows with Albeni Falls	11/22/2002
432	Threatened and Endangered Species Plan	06/13/2003
433	Fishway Plan	06/13/2003
434	Erosion Plan	03/04/2003
435	Solid Waste and Waste Water Plan	12/10/2002
436	Oil and Hazardous Substance Plan	12/10/2002
437	Pesticide & Herbicide Use Plan	11/22/2002
438	Dispute Resolution	10/30/2000
438	Dispute Resolution	11/22/2002
442	Use and Occupancy of Project Lands and Waters	11/22/2002
443	Fishway Prescriptions	10/30/2000
n/a	Approval to Replace Transmission Lines	03/05/2014

Section 11: Clarifications and Modifications to Clark Fork Settlement Agreement and PM&E Measures

11.1 Purpose

This portion of the Annual Report highlights and summarizes all clarifications and modifications to the CFSA and PM&E measures.

Each clarification or modification document are included in Section 11.2, with the date of MC (or, in the case of the Programmatic Agreement, CRMG) approval. There were no activities in 2020.

11.2 Clarifications/Modifications to Clark Fork Settlement Agreement and PM&E Measures

Document or Appendix	Document Title	Date Approved
CFSA ¶ 26	Cost Over-Run Guidelines	09/27/2000
CFSA ¶ 26	Management Committee Membership Application	12/29/2000
CFSA ¶ 26	Management Committee Procedures	09/30/2003
CFSA	Amendment No. 1	09/26/2017
CFSA Appendix C	Clarification of Usage of Funding Sources	09/30/2003
CFSA Appendix C	Joint Agreement Regarding Fish Passage	03/16/2010
CFSA Appendix C	Resolution of O&M Funding for CGDF	09/26/2017
CFSA Appendix F1	Title Revised	10/26/2016
CFSA Appendix N1	Obligation Fulfilled	10/26/2016
CFSA Appendix N2	Obligation Fulfilled	10/26/2016
CFSA Appendix N3	Obligation Fulfilled	10/26/2016
CFSA Appendix O	Obligation Fulfilled	10/26/2016
CFSA Appendix T	Project Operations during Low Inflows	09/26/2001
CFSA Appendix V	Guidelines for Acquisition of Land Interests	03/26/2010
PA	Programmatic Agreement (CRMG) Reporting	04/12/2001
PA	Programmatic Agreement (CRMG) Reporting	11/23/2004

11.3 Key 2020 References

Avista. 2020. Consent Mail approval of 2019 Avista CFSA Annual Budget Report, 2020 Aquatic Annual Implementation Plans, 2020 Terrestrial Annual Implementation Plans, 2020 Clark Fork Heritage Resource Program Annual Implementation Plan, and Appendix D Implementation Plan for the Bull Trout Protection and Public Education Project 2020-2024 (March 23, 2020). Avista document identification number 2020-0070.

FERC. 2020. Order Approving 2019 Annual Report and 2020 Implementation Plans Per Article 402, Annual Threatened and Endangered Species Plan Per Article 432, and Annual Fishway Plan Per Article 433 (April 28, 2020). Avista document identification number 2020-0152.

Section 12: Annual Budget and Grant Summary

12.1 Budget Summary

On the following page is a spreadsheet summary of budget activities for each of the PM&E measures for the 2020 calendar year (January – December). The MC approved activity year is from April through March therefore, the following budget spreadsheet summary includes the fourth quarter of 2019 approved activities and the first through third quarters of the 2020 approved activities.

The first dollar amount column in the budget spreadsheet shows funding obligations carried over from 2019 (unspent 2019 dollars plus 1.55% interest). Total carryover (including interest) was \$11,557,708.

The “2020 Funding Obligation” column, totaling \$4,298,133, details Avista’s annual funding obligation per Appendix U (Funding Summary Table) of the CFSA.

Under terms of Paragraph 23 of the CFSA, the “GDP” (Gross Domestic Product) column adjusts certain annual funding obligations for inflation (1.71% for 2020). This equates to an additional \$73,627 for 2020.

The “Total Funding Obligation” column is the sum of the “Carryover Funding with Interest” column, plus the “2020 Funding Obligation” column, plus the “GDP Amount” column. For 2020, the “Total Funding Obligation” was \$15,875,316. Note that the MC approved the removal of CFSA appendices N1, N2, N3, and O from the ongoing list of CFSA PM&E measures, as Avista has met the obligation under these appendices for the remainder of the current FERC license.

The “2020 Annual Implementation Plan Budget” column, totaling \$32,670,304, shows the implementation budget amounts determined by the TRTAC and WRTAC and approved by the MC. Note that, due to TRTAC, WRTAC, and MC decisions, some 2020 AIP budgets were more or less than the actual 2020 funding obligations. Note there were no approved budgets for CFSA appendices F4, or Q.

The “O&M & Capital Expenditures” column shows expenditures for each of the PM&E measures, totaling \$14,003,077.

The “Carryover Dollars” column shows the amount of unspent dollars for certain annual funding obligations totaling \$12,267,889. In 2012, expenditures from CFSA Appendix C (Annual Facilities Contribution) Fund exceeded the annual contribution and all carryover dollars were depleted. Since then the dollar amounts represented in the “Appendix C Facilities” row have been represented as negative amounts. The negative amounts accurately reflect the expenditures above and beyond the annual contribution.

Under terms of Paragraph 23 of the CFSA, the “Treas constant maturity 1-year” column adjusts the carryover dollars for interest (.11% for 2020). This equates to an additional \$12,492 for 2020.

The final column on the spreadsheet is the “2020 Dollars with Interest”. For more details regarding the current interest rates utilized, refer to both Paragraph 23 and Appendix U (Funding Summary Table) of the CFSA. Total 2020 end-of-year carryover, plus interest, is \$12,280,161.

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App.	PM&E - Description	Carryover	Notes	2020	Notes	III qtr	GDP****	2020	Total	Funds Transfer	2020 Annual	Consent Mails	Clearing	Capital	O&M & Capital	Carryover	Treas	Interest	2020
		Funding		Funding		GDP		Funding			Funding						Implementation		
		Oblig w/Int.		Obligation*		1.71%	Amt	Obligation w/GDP	Obligation		Plan Budget						1-year	Amount	Interest
A	Idaho Tributary & Fishery Enhancement Program																		
	Tributary Habitat Acquisition & Enhancement	\$2,403,747		\$573,259		0.0171	\$9,820	\$583,079	\$3,316,169	1	\$690,477		\$69,673	\$480,132	\$549,805	\$2,766,364	0.0011	\$3,043	\$2,777,511
	Fish Resource Monitoring, Enhancement & Management	\$0		\$49,495		0.0171	\$848	\$50,343	\$96,000		\$96,000		\$87,905		\$87,905	\$8,095	0.0011	\$9	\$0
B	Montana Tributary Habitat Acquisition & Recreational Fishery Enhancement																		
	Tributary Habitat Acquisition & Enhancement	FALSE	2	\$408,448		0.0171	\$6,997	\$415,445	\$403,395	2	\$293,150		\$91,956	\$6,994	\$98,950	\$304,445	0.0011	\$335	\$304,780
	Recreational Fishery Enhancement	\$1,224,296		\$272,296		0.0171	\$4,664	\$276,960	\$1,501,257		\$435,040		\$43,476	\$182,613	\$226,089	\$1,275,168	0.0011	\$1,403	\$1,276,571
C	Fish Passage/Native Salmonid Restoration Plan																		
	Annual Operation	\$977,588	2	\$789,663		0.0171	\$13,527	\$803,190	\$1,792,828	2	\$1,243,385		\$695,528	\$48,276	\$743,805	\$1,049,023	0.0011	\$1,154	\$1,050,177
	Facilities	-\$8,624,650		\$573,261		0.0171	\$9,820	\$583,081	\$583,081		\$26,394,761	1,2		\$10,528,992	\$10,528,992	-\$9,945,911	0.0011	-\$10,941	-\$18,581,501
D	Bull Trout Protection & Public Education Project	\$46,598		\$176,756		0.0171	\$3,028	\$179,784	\$226,382		\$194,431		\$228,513		\$228,513	-\$2,132	0.0011	-\$2	-\$2,134
E	Watershed Council Program	\$6,888		\$14,140		0.0171	\$242	\$14,382	\$21,270		\$14,355		\$14,355		\$14,355	\$6,915	0.0011	\$8	\$6,923
F1	Clark Fork River Water Quality Monitoring Program	\$8,338		\$21,212		0.0171	\$363	\$21,575	\$29,913		\$29,550		\$18,128		\$18,128	\$11,785	0.0011	\$13	\$11,798
F2	Monitoring Noxon Reservoir Stratification			**					\$0		\$55,107				\$0	\$0			
F3	Aquatic Organism Tissue Analysis			****					\$0		\$10,000				\$0	\$0			
F4	Water Quality Protection & Monitoring Plan for Maintenance, Construction & Emergency Activities			****					\$0		\$0				\$0	\$0			
F5	Gas Supersaturation																		
	TDG Monitoring			**					\$0		\$75,384		\$14,368	\$21,414	\$35,782	\$0			
	Mitigation	\$2,388,073		\$855,996		0.0171	\$14,663	\$870,659	\$2,883,733	1	\$1,584,370		\$761,325	\$15,044	\$776,368	\$2,107,364	0.0011	\$2,318	\$2,109,682
	GSCP Alternative			**					\$0		\$88,000		\$2,056	\$87,899	\$89,955	\$0			
G	Implementation of Land Use Mgmt Plan			**					\$0		\$177,500		\$97,242		\$97,242	\$0			
H	Implementation of Recreation Resource Mgmt Plan			**					\$0		\$229,500		\$179,395		\$179,395	\$0			
	Management			**					\$0		\$229,500		\$179,395		\$179,395	\$0			
	Facilities Fund	\$186,664		\$218,625		0.0171	\$3,745	\$222,370	\$409,034		\$409,034		\$13,921	\$21,196	\$35,117	\$373,917	0.0011	\$411	\$374,328
I	Implementation of Aesthetics Mgmt Plan			**					\$0		\$7,000				\$0	\$0			
J	Implementation of Wildlife, Botanical & Wetland Mgmt Plan			**					\$0		\$5,000				\$0	\$0			
K	Wildlife Habitat Acquisition & Enhancement Fund	\$489,624		\$284,795		0.0171	\$4,879	\$289,674	\$779,298		\$130,000		\$2,057	\$36,702	\$38,759	\$740,538	0.0011	\$815	\$741,353
L	Black Cottonwood Habitat on Avista Property	\$88,942		\$6,946		0.0171	\$119	\$7,065	\$96,008		\$15,000		\$6,551		\$6,551	\$89,457	0.0011	\$98	\$89,555
M	Wetlands on Avista Property	\$135,750							\$135,750		\$10,000				\$0	\$135,750	0.0011	\$149	\$135,900
P	Forest Habitat for Selected Avista Lands																		
	Annual Fund			****					\$0		\$0				\$0	\$0			
	Improvement Fund								\$0		\$5,000		\$14,899		\$14,899	\$0			
	Timber Revenue	\$226,818							\$226,818		\$0				\$0	\$226,818			\$226,818
Q	Reservoir Islands Owned by Avista								\$0		\$0				\$0	\$0			
R	Clark Fork Heritage Resource Program			**					\$0		\$55,000		\$32,466		\$32,466	\$0			
S	Erosion Fund & Shoreline Stabilization - Guidelines																		
	Annual Fund	\$200,000		\$53,239		0.0171	\$912	\$54,151	\$200,000		\$58,000				\$0	\$200,000	0.0011	\$220	\$200,000
T	Project Operating Limits	\$884,767		**					\$884,767		\$365,260			\$200,001	\$200,001	\$684,767		\$9,973	\$9,988,028
	Total	\$9,268,094	1	\$4,298,133			\$73,627	\$4,371,759	\$13,585,702		\$32,670,304		\$2,373,814	\$11,629,263	\$14,003,077	\$9,978,275		\$9,973	\$9,988,028

* 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 The totals of "Carryover Funding Obligations w/int", "Unspent Dollars", "Carryover Dollars", and "Carryover Dollars with Interest" columns exclude App C Facilities Fund balance. The negative amounts depict total expenditures exceeding the defined annual App C Facility Fund contribution in the CFSA. If the App C Facility Fund carryover was included in the total it would not accurately reflect the total funding carryover.

Note 2 Per consent mail dated July 3, 2019, Vermilion River PIT-monitoring station funding (\$130,000) will be split between App B (Tributary Habitat Acquisition and Enhancement Fund) and App C (Annual Operations Fund). This project is being capitalized within Avista's accounting, which cannot accommodate charging costs to two different BFs. App C bore the entire cost of this project and upon completion, I have manually transferred \$57,032.68 (half of the total cost) from App B to C within the carryover dollars. This adjustment is not reflected in the 2019 annual report or the 2020 annual implementation plans.

CONSENT MAILS:

1 App C Facilities Fund \$828,369, October 5, 2020: Modifications to the Cabinet Gorge Fish Handling Facility

2 App C Facilities Fund \$110,000, July 31, 2020: Graves Creek Fish Handling Facility

FUNDS MANUAL TRANSFER:

1 App F5 to App A \$375,000: cost share on Idaho Field Station

2 App B to App C \$12,050: cost share for crawdad electrofishing unit

Fund 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.

Estimate 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.

Budget 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.

Periodic 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.

12.2 Grant Summary

Appendices B and H of the CFSA included a provision intended to leverage PM&E measure funds through grants. Avista has employed a grant writer who pursues creative funding opportunities to match and enhance the financial commitments being made to implement the PM&E measures. It is important to note that any funding received does not reduce Avista's contribution to the implementation effort; rather, the funds create additional protection, mitigation, and enhancement opportunities.

The grant writer coordinates with program leaders, technical committees, MC members and other local constituencies to identify projects for grant funding, research funding sources, prepare grant applications, and conduct grant project follow-up and reporting.

Since project start-up in October 1999, \$12,861,991 in federal, state, and private foundation grants have been acquired to assist with implementation of a variety of on-the-ground aquatic and terrestrial projects. Grants received in 2020 totaled \$99,500.

In Montana, the Lower Clark Fork Watershed Group (LCFWG) received a \$3,000 grant from the Montana Watershed Coordination Council's (MWCC) Watershed Fund and another \$1,500 grant from the Soil and Water Conservation Districts of Montana for landowner outreach. These funds, in addition to another \$10,000 grant to the Green Mountain Conservation District (GMCD) from the Montana Department of Natural Resources and Conservation's (DNRC) HB223 Grant Program in late 2019, are funding a special outreach effort by LCFWG and GMCD to engage private landowners in conservation projects on their properties and will distribute tributary-specific outreach across the Lower Clark Fork River watershed. The purpose of this effort is to generate more active stewardship and restoration projects on private lands that contribute to water quality improvements and overall health of the watershed. The LCFWG received another \$3,000 grant from the Trout and Salmon Foundation for the restoration of native riparian vegetation on private land along the East Fork Bull River. Another successful proposal sponsored by LCFWG to help fund the East Fork Bull River revegetation project was a \$7,000 request to the MWCC's Watershed Fund.



The CFSA funds help LCFWG increase native riparian vegetation through landowner outreach and engagement.

The LCFWG also collaborated with GMCD to successfully apply for a \$8,250 grant from the Montana DNRC Pollinator Grant Program to establish pollinator demonstration gardens and conduct related outreach to private landowners to empower them to establish their own pollinator gardens around Sanders County.

Sanders County received a \$20,000 grant from Aquatic Invasive Species Grant Program, of which \$10,000 was spent to treat invasive Eurasian watermilfoil in priority areas in both Noxon and Cabinet Gorge reservoirs in the summer of 2020. Additional funds for treatment included a 2018 grant from the U.S. Army Corps of Engineers under the Water Resource Development Act (WRDA). Eurasian watermilfoil infestation was less extensive than expected and partial grant funds were expended in 2020. Thus, the funding agencies have extended the grants to fund control measures in 2021.

Avista teamed up with Project Ascent, a Thompson Falls-based non-profit organization, to seek outside funding for new and improved playground equipment at Pilgrim Creek Park in Noxon, Montana. Project Ascent applied for grants to augment budgeted CFSA funds for the playground equipment, which will be appropriate for children from ages 5 to early teenage years, and easier to maintain than the existing playground equipment. Project Ascent was awarded \$10,000 from the Dennis & Phyllis Washington Foundation, with the potential to double that amount if the amount was matched by another funder. Project Ascent also received a \$10,000 grant from the Sample Foundation for the playground project. Having met the challenge requirement, Project Ascent received another \$10,000 award from the Dennis & Phyllis Washington Foundation in 2021, bringing the total of private funds for the playground to \$30,000. The playground equipment will be installed in the spring of 2021.

In other recreation projects, Avista was awarded \$1,500 from the Sanders County Resource Advisory Committee (RAC) to fund improvements to the vault toilet at the Vermilion River boat launch recreation site to make the toilet ADA accessible.

The Sanders County RAC also awarded \$25,000 to the USFS Kootenai National Forest for implementation and monitoring of the Sims Meander Stream and Floodplain Restoration Project. This funding will help support Forest Service staff contributions toward reactivating the floodplain and improving native fish habitat along 1,500 to 2,000 feet of stream channel in the Vermilion River.

Project funding ran into some difficulties in 2020 due to the COVID-19 pandemic. For instance, the Kalispel Tribe of Indians suspended their generous grant program because of the shutdown of the tribe's casino, which is the source of the charitable funds. This affected Panhandle Chapter of Trout Unlimited (PCTU), which applied for funds for native fish outreach. Similarly, the Angels Over Sandpoint redirected all their funds toward COVID-19 relief, which affected a PCTU grant application to support Bull Trout education and outreach. However, PCTU received partial funds \$250 from the Community Assistance League, for native fish outreach.

At year's end, a proposal for \$200,000 remained pending for a grant from the U.S. Army Corps of Engineers WRDA program for future Eurasian watermilfoil control. If approved by Congress, this funding would help Sanders County control invasive Eurasian watermilfoil on Noxon and Cabinet Gorge reservoirs in 2022 and 2023.

Along with Avista CFSA PM&E funds, a variety of partners provide funds and in-kind match support for grant proposals. In 2020, matching partners included:

- Sanders County
- Sanders County Aquatic Invasive Plants Task Force
- U.S. Army Corps of Engineers
- Natural Resource Conservation Service
- NorthWestern Energy
- Trout Unlimited
- Montana Fish, Wildlife & Parks
- Idaho Department of Fish and Game
- Montana Department of Environmental Quality
- U. S. Forest Service
- Lower Clark Fork Watershed Group
- Green Mountain Conservation District
- Project Ascent
- Private landowners