



Department of Energy

Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

Environment, Fish and Wildlife

August 3, 2006

In reply refer to: KE-4

Dr. Tom Karier, Chair
Northwest Power and Conservation Council
851 SW Sixth Avenue, Suite 1100
Portland, OR 97204

Dear Chair Karier:

Northwest Power and Conservation Council (Council) members have asked that Bonneville Power Administration (Bonneville) make its *in lieu* funding concerns known for the proposals received in our joint FY 07-09 solicitation process. Enclosed is a spreadsheet describing our *in lieu* ratings for all of the new project proposals submitted in the solicitation. Also enclosed is the *in lieu* interpretive key and rating system utilized by Bonneville in the rating process.

As you know, the Northwest Power Act obligates Bonneville to use its authorities to fund fish and wildlife measures consistent with the Council's fish and wildlife program and other purposes of the Act. Bonneville's expenditures, however, "shall be in addition to, not in lieu of, other expenditures authorized or required from other entities under other agreements or provisions of law."¹

The application of the in lieu provision & the role of cost-sharing

The *in lieu* provision poses two fundamental questions: is another entity authorized or required by law or agreement to undertake the proposed activity? If so, is Bonneville's funding in addition to, rather than *in lieu* of that entity's funding? While the questions are relatively straightforward, their application to specific project proposals is not. As Bonneville discussed in its letter last fall regarding the Bonneville-Forest Service Memorandum of Understanding (October 25, 2005 letter to Ms. Eden), one of the most difficult aspects of the *in lieu* analysis is addressing off-site projects where there is overlapping authority to perform a project. In most cases, off-site projects (activities off of the mainstem Columbia and Snake Rivers) address the impacts from actions other than the construction or operation of the Federal Columbia River Power System (FCRPS). Yet, by implementing these off-site measures recommended by the Council, Bonneville can still protect, mitigate and enhance fish and wildlife affected by the FCRPS.

In such cases, an entity other than Bonneville is frequently "authorized or required" by "other agreements or provisions of law" to undertake the mitigation. The Act prohibits Bonneville from

¹ 16 U.S.C. § 839b(h)(10)(A).

funding the activity unless Bonneville's funding is in addition to rather than *in lieu* of the entity's funding.

In such situations, cost-sharing is one method for confirming that there is no *in lieu* problem. Reasonable cost-sharing (where Bonneville funding is a portion of the overall proposed budget for a proposal) can demonstrate that Bonneville's funding is not supplanting that of another entity already authorized or required to undertake the activity. With reasonable cost-sharing, Bonneville is confident it can defend against challenges that Bonneville is violating the *in lieu* prohibition. Reasonable cost-sharing reconciles a number of the Act's provisions: the requirement that ratepayers pay only for the impacts of power facilities "not the cost of measures designed to deal with the impacts caused by other factors,"² the plain language of the *in lieu* provision itself, and Congress' intent that enhancement measures be used, in appropriate circumstances, as means of achieving offsite protection and mitigation.³

Bonneville's interpretive key & rating system

Bonneville's interpretation of the provision and how Bonneville applies it to review proposals is described in the enclosed "BPA 'In Lieu' Interpretive Key & Ratings System." Our interpretation is not new, but with this document we provide greater transparency by more explicitly stating our interpretation, underlying assumptions, and the general principles used in our review. Cost-sharing with our project partners has always been a factor considered in *in lieu* reviews; in this key, however, we provide more explicit discussion of the role of cost-sharing as a possible remedy for many potential *in lieu* problems.

As with past practice, Bonneville is rating all proposals a "1" or a "2" or a "3." A "1" rating indicates no *in lieu* concerns, a "2" rating indicates possible *in lieu* concerns, and a "3" rating indicates *in lieu* problems. For 2007, Bonneville will treat the proposals rated as "1" and "2" as fundable. As further delineated in the ratings spreadsheet, however, Bonneville also includes notes about another entity's apparent authority or requirement to fund the activity, the level of cost-sharing (via a rough percentage), and an indication of the status of the cost-sharing proposed. Based on this information and applying the general principles of the key, Bonneville further rated all the "2" proposals as 2.1, 2.2, and 2.3. With these sub-ratings, Bonneville provides its perspective on whether the proposal includes a "reasonable" cost share, with 2.1 being "appears reasonable," a 2.2 "may be reasonable," and 2.3 being "appears unreasonable."

For future solicitations beyond the FY07-09 time period, Bonneville may not support proposals that get a 2.2 or 2.3 rating without additional cost sharing or other remedy for the *in lieu* problem identified. Again, Bonneville considers all projects rated a "2" as fundable for 2007 from an *in lieu* standpoint, but we provide this additional information to give early notice of Bonneville's thinking during this transition period.

² H.R. Rep. No. 96-976, Part II, at 45 (1980); 16 U.S.C. § 839b(h)(8)(B).

³ 16 U.S.C. § 839b(h)(8)(A).

Remedies for in lieu problems

If the Council anticipates recommending Bonneville funding for new proposals in 2007 that are rated in the enclosed list as a “3”, we encourage identification of such project proposals as soon as possible. Bonneville conducted its initial review based on proposals submitted in response to our joint solicitation and listed on the CBFWA website and other publicly available information. As noted in the enclosed key, there are a variety of ways to potentially address an adverse *in lieu* rating, including:

1. Written confirmation including supporting rationale from the proponent that neither it nor any other entity is authorized or required by other agreements or provisions of law to undertake the activity for which Bonneville funding is being sought.
2. Further description of how Bonneville’s funding is in addition to, not *in lieu* of the other entity’s funding, taking into account the principles described in the interpretive key and rating system. For example, a project sponsor could provide additional information showing that it is applying its funds to accomplish other aspects of the same overall project but had not included that explanation in the original proposal.
3. Information about past funding activities by the entity, indicating that the entity has not funded the kind of activity proposed for Bonneville funding.

Since proposals rated as “1” or “2” are considered fundable by Bonneville under the *in lieu* provision for the 07-09 period, BPA does not need additional information about these proposals at this time.

In lieu ratings for on-going project proposals

Bonneville considered whether to evaluate on-going project proposals submitted for the 07-09 solicitation. On the one hand, each of these on-going project proposals has already received an *in lieu* rating in prior project solicitations. On the other hand, some of the project proposals have been modified for the current solicitation. Also, although they are on-going, the nature and extent of another entity’s authority or requirements to undertake the activity may have changed. In addition, we have new or additional information about the amount and nature of cost-sharing offered. As a result, Bonneville concluded it would be reasonable to review all of the on-going project proposals as well, and expects to complete this review by October 1, 2006.

Some on-going proposals that did not have identified *in lieu* issues in past solicitation cycles may now present *in lieu* problems. If an on-going project proposal is rated as a “3” as not fundable, Bonneville expects the project proponent to use the FY07-09 period as a transitional one and seek to remedy the problem in consultation with Bonneville, or wind up the work to be funded by Bonneville in FY’08 and out years.

Our attention to this issue now is intended to offer insights about the appropriate level of cost share that could be expected for those *in lieu* gray areas in the future, particularly for project proposals after 2007. We firmly believe that appropriate adherence to the *in lieu* provision supports a broader, more diverse participation by our project partners, and a more expansive, better coordinated and cost-effective set of ecosystem and recovery efforts.

Thank you for the opportunity to share Bonneville's *in lieu* analysis. I look forward to working with you on these issues.

Sincerely,



Gregory K. Delwiche
Vice President, Environment, Fish and Wildlife

2 Enclosures:
New Proposals Only
In Lieu Key

cc:

Ms. Judi Danielson, Northwest Power & Conservation Council
Mr. Jim Kempton, Northwest Power & Conservation Council
Ms. Joan Dukes, Northwest Power & Conservation Council
Mr. Bruce Measure, Northwest Power & Conservation Council
Ms. Rhonda Whiting, Northwest Power & Conservation Council
Mr. Larry Cassidy, Northwest Power & Conservation Council
Ms. Melinda Eden, Northwest Power & Conservation Council
Mr. Doug Marker, Northwest Power & Conservation Council
Mr. Brian Lipscomb, Columbia Basin Fish & Wildlife Authority
Chairman Dean Adams, Burns Paiute Tribe
Chairman Chief Allan, Coeur d'Alene Tribe
Chairman Mike Marchand, Confederated Tribes of the Colville Reservation
Chairman Glen Nenema, Kalispel Tribe
Chairperson Jennifer Porter, Kootenai Tribe of Idaho
Chairperson Rebecca Miles, Nez Perce Tribe
Chairman James Steele Jr., Confederated Salish & Kootenai Tribes
Chairman Alonzo Coby, Shoshone Bannock Tribes of Fort Hall
Chairman Terry Gibson, Shoshone Paiute Tribes of the Duck Valley Reservation
Chairman Richard Sherwood, Spokane Tribe of Indians
Chairman Antone Minthorn, Confederated Tribes of the Umatilla Indian Reservation
Chairman Ron Suppah, Confederated Tribes of the Warm Springs Reservation
Chairman Lavina Washines, Yakama Indian Nation
Ms. Mary Verner, Upper Columbia United Tribes
Mr. Olney Patt, Jr., Columbia River Intertribal Fish Commission

Proposal Number	Project Title	Species Type	Province	Organization	In lieu rating	Notes	Approx. BPA share of total costs?	Status of Cost Share
200700100	Aquatic survey protocol comparison.	Anadromous	Mainstem/ Systemwide	US Forest Service - National Headquarters	1.0	General aquatic survey protocols; assume covered by MOU	BPA 70% (84)	Under Dev.
200700300	Dworshak Dam Resident Fish Mitigation	Resident	Mountain Snake	Idaho Department of Fish & Game	1.0	FCRPS mitigation; strobes	BPA 80%	Under Dev.
200701300	Convert BPA Term Riparian Lease Agreements to Permanent Riparian Conservation Easements	Anadromous	Columbia Plateau	John Day Basin Trust	1.0	Purchase perpetual riparian easements where BPA provided riparian fencing previously; assume wildlife HUs	BPA 91%	Mixed
200702000	Manastash Instream Flow Enhancement	Anadromous	Columbia Plateau	Kittitas County Conservation District	1.0	Close piping of irrigation, other efficiencies (assuming irrigators not required to do)	BPA 88%	Mixed
200702400	Coeur d'Alene Trout Ponds	Resident	Intermountain	Coeur D'Alene Tribe	1.0	Trout ponds to replace lost fishery; assume this is for FCRPS and Avista will be providing additional ponds via relicensing	BPA 96%	Confirmed
200702500	Project Compliance Monitoring	All	Mainstem/ Systemwide	XLSolutions	1.0	Independent compliance monitoring of BPA-funded Council projects	BPA 100%	
200702700	Colville Confederated Tribes Acquisition Project	Wildlife	Intermountain	Colville Confederated Tribes	1.0	FCRPS wildlife mitigation project	BPA 100%	
200703300	Monitor sub adult and adult bull trout passage through Lower Granite, Little Goose and Lower Monumental juvenile bypass facilities.	Resident	Mainstem/ Systemwide	US Fish & Wildlife Service (USFWS)	1.0	FCRPS bypass monitoring	BPA 100%	
200703500	UPA Project - Methow Basin Riparian Enhancement	Anadromous	Columbia Cascade	Methow Salmon Recovery Foundation	1.0	Riparian fencing/planting, mostly on private; assume that some in lieu problem sites (eg fencing at WDFW managed campground) excluded from funding	BPA 85%	Confirmed
200704000	Upper Columbia Landowner Incentive Program	Resident	Intermountain	Washington Department of Fish and Wildlife (WDFW)	1.0	Proposed WDFW competitive grant program for private landowners doing various habitat restoration activities; assume program will exclude projects for which landowner may be required to perform the	BPA 92%	Mixed

						restoration		
200704100	Kalispell Riparian Road Removal	Resident	Intermountain	Washington Department of Fish and Wildlife (WDFW)	1.0	Road decommissioning of FS road); assume covered by BPA-FS MOU	BPA 70% (64)	Mixed
200704200	UPA Wenatchee Passage Program	Anadromous	Columbia Cascade	Chelan County Natural Resources Department	1.0	Road decommission/culvert replacement on FS lands; assume covered by BPA-FS MOU	BPA 70% (87)	Confirmed
200704400	Kettle River Tributaries Riparian Habitat Improvement Project	Resident	Intermountain	Ferry Conservation District	1.0	Offstream water sources on NFS land for grazing mitigation; assume covered by FS MOU	BPA 70%	Confirmed
200705200	Chum Salmon Evaluations Within Bonneville Reservoir	Anadromous	Columbia Gorge	Washington Department of Fish and Wildlife (WDFW)	1.0	BON reservoir monitoring	BPA 78%	Mixed
200705300	Upper Lolo Creek Watershed Restoration	Resident	Mountain Columbia	US Forest Service: Lolo National Forest	1.0	FS road mitigation; assume covered by BPA-FS MOU	BPA 70%(75)	Mixed
200705400	Entiat River - UPA - Stillwater Restoration Project	Anadromous	Columbia Cascade	Chelan County Conservation District (SWCD)	1.0	Provide LWD, plantings for riparian restoration on private lands, assume no other entities authorized/required to install here (i.e., no order from state agencies/others to private entities for addressing christmas tree/anchoring?)	BPA 87%	Confirmed
200706400	Protect and Restore Slate Creek	Anadromous	Mountain Snake	Nez Perce Tribe Dept. Fisheries Resource Management Watershed Division	1.0	Road decommission/culvert replacement on FS lands; assume covered by BPA-FS MOU	BPA 70%(76)	Mixed
200706500	Coordinate and implement tributary habitat restoration in the Little Salmon River and lower Salmon River Idaho	Anadromous	Mountain Snake	Idaho Soil and Water Conservation District	1.0	Addressing impacts of grazing/irrigation on private lands; assuming covered by BOR MOU	BPA 66%	Under Dev.
200706700	Lawyer Creek Idaho A-Run Steelhead Spawning and Rearing Restoration and	Anadromous	Mountain Snake	Lewis Soil Conservation District	1.0	Addressing impacts of grazing/agriculture on private lands; assume no entity	BPA 90%	Mixed

	Enhancement					authorized/required to act due to ESA concerns		
200707300	Dynamics of Gravel Spawning Beds in Lake Pend Oreille, ID	Resident	Intermountain	Woods Hole Oceanographic Institution	1.0	Research re: effects of Albeni Falls on LPO	BPA 86%	Confirmed
200707700	Hemlock Dam Removal	Anadromous	Columbia Gorge	Gifford Pinchot National Forest	1.0	Removal of FS dam impacting listed steelhead; FS already authorized/required to remove (see NEPA ROD), but assume covered by MOJ	BPA 70% (73)	Under Dev.
200708400	Shrubsteppe Habitat Acquisition for Terrestrial Species in Need of Conservation in the Upper Mid-Columbia Subbasin.	Wildlife	Columbia Cascade	Washington Department of Fish and Wildlife (WDFW)	1.0	Wildlife mitigation for FCRPS	BPA 55%	Confirmed
200708500	UPA Nason Creek Oxbow Reconnection Project	Anadromous	Columbia Cascade	Chelan County Natural Resources Department	1.0	Install arch culverts for oxbow reconnection, mixed private/federal land, assume no entity required to do so	BPA 100%	
200708600	UPA Wenatchee Subbasin Riparian Enhancement Proposal	Anadromous	Columbia Cascade	Chelan County Natural Resources Department	1.0	Fencing/planting of riparian buffer zones on private land, assume no landowner requirement	BPA 100%	
200709200	Restore Selway River Watershed	Anadromous	Mountain Snake	Nez Perce Tribe DFRM Watershed Division	1.0	Culvert replacements on FS lands; assume covered by BPA-FS MOU	BPA 70% (70)	Mixed
200709300	Restore Middle Fork Clearwater Face Drainages	Resident	Mountain Snake	Nez Perce Tribe DFRM Watershed Division	1.0	Culvert replacements, road decommis. on FS lands, also riparian fencing; assume covered by BPA-FS MOU	BPA 70% (77)	Under Dev.
200709400	Protect & Restore Clear Creek Watershed	Anadromous	Mountain Snake	Nez Perce Tribe DFRM Watershed Division	1.0	Culvert replacements, road decommis. on FS lands; assume covered by BPA-FS MOU	BPA 70% (77)	Mixed
200710300	Skookumchuck Watershed	Anadromous	Columbia Cascade	Washington Department of Fish and Wildlife (WDFW)	1.0	Habitat acquisition for fish protection, irrigation/road/grazing mitigation; okay assuming no other entity (eg Grant Co PUD) required to obtain parcel	BPA 100%	

200710400	Protect and Restore White Bird Creek	Anadromous	Mountain Snake	Nez Perce Tribe Dept. Fisheries Resource Management Watershed Division	1.0	Culvert replacements, road decommission on FS lands; assume covered by BPA-FS MOU	BPA 70% (70)	Mixed
200711100	Assess impacts of flow augmentation on bull trout in the North Fork and Lower Clearwater Rivers	Resident	Mountain Snake	Idaho Department of Fish & Game	1.0	Bull trout impacts, Dworshak flow augmentation	BPA 100%	
200711200	Teanaway Watershed - Protect critical habitat from development, reduce water temperatures and increase instream flows, restore habitat forming processes in the floodplain.	Anadromous	Columbia Plateau	Kittitas Conservation Trust	1.0	Riparian conservation easements	BPA 78%	Confirmed
200711700	Comprehensive Assessment of Coho Salmon Restoration Efforts in the Mid-Columbia and Mid-Snake River Basins	Anadromous	Mainstem/ Systemwide	Columbia River Inter-Tribal Fish Commission (CRITFC)	1.0	Fund symposium and other coordination of coho reintroduction	BPA 70%	Under Rev.
200711800	Protect and Restore Anadromous Fish Habitat in Little Naches River Watershed.	Anadromous	Columbia Plateau	US Forest Service (USFS) - Wenatchee National Forest	1.0	Purchase checkerboard lands for Forest Service, Little Naches watershed, assume covered by FS MOU	BPA 70% (90)	Under Dev.
200711900	Restore Access to Upper Musselshell Creek	Anadromous	Mountain Snake	Nez Perce Tribe DFRM Watershed Division	1.0	Channel realignment on FS lands after blockage by historic mining tunnel; FS is authorized/required; assume covered by MOU	BPA 70%(77)	Under Dev.
200712400	Okanogan County Irrigation Water Management Improvement Project	Anadromous	Columbia Cascade	Okanogan Soil & Water Conservation District (SWCD)	1.0	Upgrade irrigation systems for efficiency; assuming no order/requirement to do so	BPA 95%	Confirmed
200712500	Protect and Restore the Tucannon River Watershed - Nez Perce Tribe	Anadromous	Columbia Plateau	DFRM Watershed Division	1.0	Road decommission/culvert replacement on FS lands; assume BPA-FS MOU applies	BPA 70% (79)	Mixed
200712700	Reestablish Connectivity and Restore Fish Habitat in	Anadromous	Mountain Snake	Nez Perce Tribe DFRM Watershed	1.0	Reestablish passage through falls, on FS lands; assume	BPA 70%(58)	Mixed

	the East Fork of the South Fork Salmon River Watershed			Division		covered by BPA-FS MOU		
200712800	Protect and Restore the Little Salmon Watershed	Anadromous	Mountain Snake	Nez Perce Tribe DFRM Watershed Division	1.0	Culvert removal, fencing on FS lands; assume covered by BPA-FS MOU	BPA 70% (85)	Mixed
200713200	NEOH Monitoring & Evaluation Implementation (Formerly a component of 198805301)	Anadromous	Blue Mountain	Tribe: Nez Perce Tribe, State: Oregon Department of Fish and Wildlife	1.0	Hatchery M&E; although fishery managers authorized/required, assume FCRPS obligation here since FCRPS hatchery	BPA 73%	Mixed
200713400	Restore and Protect Crooked River Watershed	Anadromous	Mountain Snake	Nez Perce Tribe	1.0	Culvert replacements, road decommis on FS lands; assume covered by BPA-FS MOU	BPA 70% (62)	Mixed
200713900	Rock Creek Stabilization and Habitat Rehabilitation	Anadromous	Columbia Gorge	Skamania County	1.0	LWD etc to improve pool/riffle habitat; assume no other entity required to perform	BPA 85%	Mixed
200714200	Restore and Protect American River Watershed	Anadromous	Mountain Snake	Nez Perce Tribe	1.0	Culvert replace, trib restoration, weed control on FS lands; assume covered by BPA-FS MOU	BPA 70% (80)	Mixed
200714400	Evaluation of water temperature exposure in the Columbia River hydrosystem on reproductive success of adult and juvenile Chinook salmon and steelhead	Anadromous	Mainstem/ Systemwide	University of Idaho	1.0	FCRPS temp evaluation	BPA 5%	Confirmed
200714500	Okanogan Livestock and Water	Anadromous	Columbia Cascade	Okanogan Soil & Water Conservation District (SWCD)	1.0	Livestock mitigation (watering sites, fencing)"allowing producers to respond to and prevent complaints;" other entities authorized/required (livestock owners)	BPA 100%	
200715300	Cardwell Hills Wildlife Mitigation and regional Biodiversity Protection Project	Wildlife	Lower Columbia	David Evans and Associates, Inc.	1.0	Wildlife mitigation (but need to confirm FCRPS mitigation species/habitats being acquired & that BPA receiving habitat unit credits, not clear from proposal)-if mitigation	BPA 99.7%	Confirmed

						authorized/required from other entities, this would be rated a 2.3.		
200715500	Develop a Master Plan for a Rearing Facility to Enhance Selected Populations of White Sturgeon in the Columbia River Basin	Resident	Mainstem/Sy stemwide	Columbia River Inter-Tribal Fish Commission (CRITFC)	1.0	White sturgeon hatchery planning; although other entities authorized/required (fishery managers, other dam operators etc), assume okay because will clearly mitigate for FCRPS	BPA 100%	
200716900	Total Dissolved Gas Effects on Incubating Chum Salmon Below Bonneville Dam	Anadromous	Lower Columbia	Pacific Northwest National Laboratory	1.0	BON TDG	BPA 100%	
200717300	Upper South Fork McKenzie Channel Restoration	Anadromous	Lower Columbia	US Forest Service (USFS) - Willamette	1.0	Channel restoration on FS lands; assume BPA-FS MOU covers	BPA 70%(71)	Confirmed
200717800	Monitoring fine sediment delivery in the Entiat subbasin	Anadromous	Columbia Cascade	US Forest Service (USFS) - Pacific Northwest Research Station	1.0	Develop/test protocols for evaluating fine sediment delivery; assume covered by MOU	BPA 70% (75)	Mixed
200718000	Evaluating and prioritizing restoration of riparian habitat for improving in-stream conditions for anadromous salmonids in the Columbia River basin.	Anadromous	Mainstem/Sy stemwide	US Forest Service (USFS) - Pacific Northwest Research Station	1.0	Aquatic/riparian model development, assume covered by MOU	BPA 70%(93)	Confirmed
200718100	Lower Lawyer Creek Stream Restoration Project	Anadromous	Mountain Snake	Flying B Ranch	1.0	Restoring channel meander on private land; assume no ESA or other requirement to do so	BPA 90%	Confirmed
200718300	Restoration of Historical Salmonid Habitat in South West Idaho	Anadromous	Multiprovinc e	Southwest Idaho RC&D	1.0	Culvert removal on FS lands; assume BPA-FS MOU covers?	BPA 70%(65)	Mixed
200718600	Middle Fork Willamette River Bull Trout Passage and Habitat Restoration	Resident	Lower Columbia	US Forest Service	1.0	Replacing FS road culvert, assume BPA-FS MOU covers	BPA 70%(49)	Mixed
200719300	Evaluate potential to enhance spawning of summer/fall chinook salmon in the tailrace of	Anadromous	Columbia Cascade	Colville Confederated Tribes	1.0	FCRPS tailrace spawning	BPA 100%	

	Chief Joseph Dam, Columbia River, WA							
200719400	Oak Flats Acquisition and Habitat Enhancement	Anadromous	Columbia Plateau	Washington Department of Fish and Wildlife (WDFW)	1.0	Anadromous fish habitat acquisition (addressing irrigation impacts/Wapatox etc)	BPA 86%	Mixed
200721200	Develop a locally-adapted summer steelhead program to supplement natural production throughout the Okanogan River basin	Anadromous	Columbia Cascade	Colville Confederated Tribes	1.0	Evaluate expansion of Cassimer Bar hatchery for steelhead supplementation; assume in mitigation for FCRPS	BPA 85%	Under Rev.
200721400	UPA Project - Fender Mill Floodplain Restoration - Phase 1	Anadromous	Columbia Cascade	Methow Salmon Recovery Foundation	1.0	Reconnect floodplain via dike removal etc; assume no entity already required to do	BPA 67%	Confirmed
200721700	Operation and Maintenance for Walla Walla Basin Passage Projects	Anadromous	Columbia Plateau	Gardena Farms Irrigation Dist. and Hudson Bay Dist. Improvement Co.	1.0	O&M on BPA-constructed screens; assume BPA has already agreed to fund	BPA 100%	
200721900	Clackamas Watershed Prioritized Fish Passage Barrier Removal	Anadromous	Lower Columbia	Clackamas River Basin Council	1.0	Removal of road crossing barrier on private land; assume landowner not already required to address due to impacts to listed species	BPA 88%	Mixed
200722000	Water and Economic Optimization Project to Restore Streamflow in Fifteenmile Creek in the Fifteenmile Sub-basin.	Anadromous	Columbia Gorge	Wyeast Resource Conservation & Development Area Council	1.0	Testing new approach to withdrawals for irrigation (assuming no order, consent decree etc requiring increased flows here)	BPA 96%	Mixed
200722900	Development of protocols and priorities for re- establishing naturally reproducing populations of Upper Willamette River Chinook Salmon above US Army Corps of Engineers dams in the Willamette Subbasin	Anadromous	Lower Columbia	Oregon Department of Fish & Wildlife (ODFW)	1.0	FCRPS Willamette mitigation (re-population above blockages)	BPA 66%	Mixed

200723200	Okanogan-Similkameen Habitat Protection Project - Fish and wildlife habitat protection through fee simple and conservation easement purchases.	Wildlife	Columbia Cascade	Washington Department of Fish and Wildlife (WDFW)	1.0	Assuming wildlife HUs to be obtained	BPA 100%	
200723500	Proposal to Create a Sub-Basin Plan for the Blackfoot River Sub-Basin	Resident	Mountain Columbia	Trout Unlimited	1.0	(Because we funded development of other sub-basin plans)	BPA 83%	Confirmed
200723600	Strategic Adaptation of the Federal Columbia River Power System to Climate Variability and Change	Anadromous	Mainstem/Sy stemwide	Portland State University	1.0	FCRPS response to climate change (models & remote sensing)	BPA 96%	Confirmed
200723700	UPA Project - Elbow Coulee Floodplain Restoration	Anadromous	Columbia Cascade	Methow Salmon Recovery Foundation	1.0	Dike removal, LWD install, assume no entity already required	BPA 57%	Confirmed
200724200	Fifteenmile Subbasin Efficient Irrigation Technology	Anadromous	Columbia Gorge	Wasco County Soil & Water Conservation District (SWCD)	1.0	Upgrade irrigation systems for efficiency; assume no order/requirement to do so	BPA 72%	Mixed
200724300	Crab Creek Subbasin Plan 2007	Wildlife	Columbia Plateau	Washington Department of Fish and Wildlife (WDFW)	1.0	Subbasin plan fix it	BPA 100%	
200724600	Restoration of bull trout passage at Albeni Falls Dam using a trap-and-haul approach in conjunction with investigations to assess effectiveness of rapid genetic analysis in assigning natal tributary	Resident	Intermountain	Kalispel Tribe	1.0	Albeni Falls & bull trout	BPA 100%	
200724700	Priscilla Peak Wildlife Habitat Restoration (Prescribed Fire)	Wildlife	Mountain Columbia	US Forest Service	1.0	Prescribed fire, wildlife in MT assume covered by MOU	BPA 70%(82)	Mixed
200725500	Protect and Restore the Middle Lochsa	Anadromous	Mountain Snake	Nez Perce Tribe DFRM Watershed Division	1.0	Culvert replacement, road decomiss on FS lands; assume covered by BPA-FS MOU?	BPA 70% (90)	Under Rev.
200725900	Wilson Creek Relocation	Resident	Columbia	Central Washington	1.0	Relocate/rehab creek on campus;	BPA	Mixed

	and Rehabilitation		Plateau	University		assume not required to perform already	61%	
200726000	Acquisition of a Conservation Easement over 1084 acres of Upland Prairie and Oak Habitat, Willamette Subbasin	Wildlife	Lower Columbia	Nature Conservancy	1.0	Wildlife HUs; note too fish interests	BPA 53%	Confirmed
200726400	UPA Project - Programmatic Habitat Complexity Projects in the Methow River Subbasin	Anadromous	Columbia Cascade	Methow Salmon Recovery Foundation	1.0	Remove dikes, reconnect side channels; assume no existing entity required to conduct	BPA 71%	Under Dev.
200726500	Complete and Coordinate a Subbasin Plan for the Bitterroot Watershed	Resident	Mountain Columbia	Montana Water Trust	1.0	(Assuming BPA is responsible for new subbasin plans since it funded the original set)	BPA 100%	
200726900	Clearwater Coho Restoration Project	Anadromous	Mountain Snake	Nez Perce Tribe	1.0	Hatchery mitigation, Clearwater, coho, mitigating for Dworshak (but also note, non FCRPS dams originally blocked passage)	BPA 100%	
200727000	Lake Rufus Woods Subbasin Area Stock Assessment, Habitat Assessment and Fisheries Evaluation Program	Resident	Intermountain	Colville Confederated Tribes	1.0	FCRPS reservoir stock assessment, management issues, assume in mitigation for FCRPS	BPA 100%	
200727100	Willamette Basin Capitalized Wildlife Land Acquisitions	Wildlife	Lower Columbia	The Confederated Tribes of Grand Ronde	1.0	Wildlife HUs, minimum HUs promised (650)	BPA 99%	Confirmed
200727700	Hamilton Creek Stabilization and Habitat Rehabilitation	Anadromous	Lower Columbia	Skamania County	1.0	LWD installment, for BON2 powerhouse mitigation	BPA 70%	Confirmed
200728000	Columbia River Basin Journal	All	Mainstem/Sy stemwide	Intermountain Communications	1.0	No other entity known to be authorized/required to fund	BPA 94%	Confirmed
200728300	UPA Wenatchee Subbasin Access Proposal	Anadromous	Columbia Cascade	Chelan County Natural Resources Department	1.0	Channel realignment, LWD etc on private lands	BPA 100%	
200728600	Deschutes Cooperative Stream Flow Restoration	Anadromous	Columbia Plateau	Deschutes Soil and Water Conservation District	1.0	Restoration of streamflows above PRB; instream flow acquisition, irrigation efficiencies	BPA 4%	Mixed

200728700	Delivering Reliable Fish Passage Information for Hydrosystem Management	Anadromous	Mainstem/Sy stemwide	Pacific Northwest National Laboratory	1.0	FPC (1 rating for all activities in program & mainstem amendment)	BPA 100%	
200728800	Touchet Eastside and Westside Irrigation District Piping	Anadromous	Columbia Plateau	Walla Walla County Soil & Water Conservation District (SWCD)	1.0	Piping of diversions, assume irrigators not required to do	BPA 45%	Confirmed
200729200	EFFECTIVENESS MONITORING OF IN-STREAM HABITAT RESTORATION IN THE LOWER ENTIAI BASIN AT MICROHABITAT AND REACH SCALES	Anadromous	Columbia Cascade	US Forest Service (USFS) - Pacific Northwest Research Station	1.0	Effectiveness monitoring of instream restoration, assume covered by MOU	BPA 70% (64)	Under Rev.
200729500	Crow Creek BPA Powerline Channel Restoration Project	Resident	Mountain Columbia	US Forest Service: Lolo National Forest	1.0	Channel reconstruction, assume covered by MOU	BPA 70%(43)	Mixed
200730000	Fish Passage Technical Services Project	Anadromous	Mainstem/Sy stemwide	Columbia River Inter-Tribal Fish Commission (CRITFC)	1.0	Technical/analytical support to fishery agencies for regional collaboratives (eg BiOp remand)	BPA 98%	Confirmed
200731100	Acquire Land to Protect Critical Habitat in the Upper Lochsa	Anadromous	Mountain Snake	Nez Perce Tribe DFRM Watershed Division	1.0	Purchase Clearwater NF inholding, assume MOU covers	BPA 70% (97)	Confirmed
200731200	Albeni Falls Dam Operational Loss Assessment of Riparian Ecological Function in the Pend Oreille River Ecosystem	Wildlife	Intermountain	Kalispel Tribe	1.0	Loss assessment for operations	BPA 97%	Confirmed
200731600	McKenzie Canyon Irrigation Project	Anadromous	Columbia Plateau	Deschutes River Conservancy	1.0	Convert open canal to pipe, provide instream flows (no apparent order/decreed requiring; no BiOp for BOR?)	BPA 58%	Mixed
200731800	Entiat River - UPA - Knapp-Wham Hanan Detwiler Irrigation System Consolidation Project.	Anadromous	Columbia Cascade	Chelan County Conservation District (SWCD)	1.0	Wells, other irrigation consolidation; assume irrigation entities not already required to do to address passage barriers	BPA 76%	Confirmed
200732100	Data Management for	All	Mainstem/Sy	Columbia Basin	1.0	FPC (assume all activities are	BPA	Under

	System Operations		stemwide	Fish & Wildlife Authority (CBFWA)		included in program or mainstem amendment)	84%	Dev.
200732500	UPA Wenatchee Subbasin Complexity Proposal	Anadromous	Columbia Cascade	Chelan County Natural Resources Department	1.0	Channel realignment, LWD etc on private lands	BPA 100%	
200732600	Monitoring of juvenile and adult salmonid survival through the Federal Columbia River Power System	Anadromous	Mainstem/Sy stemwide	Washington Department of Fish and Wildlife (WDFW)	1.0	FPC (1 rating for all activities in program & mainstem amendment)	BPA 100%	
200733000	Gardena Farms Irrigation District Irrigation Efficiency and Instream Flow Project	Anadromous	Columbia Plateau	Gardena Farms Irrigation District	1.0	Close piping of irrigation (assuming irrigators not required to do)	BPA 100%	
200733600	Effects of short-term flow fluctuations on salmon migration	Anadromous	Columbia Plateau	Oak Ridge National Laboratory	1.0	Research of flow fluctuations at Little Goose	BPA 100%	
200734500	Grande Ronde Coho Restoration	Anadromous	Blue Mountain	Nez Perce Tribe	1.0	Expand NEOH to address coho production in mitigation for FCRPS	BPA 100%	
200734600	Crims Island Habitat Restoration	Anadromous	Columbia Estuary	US Geological Survey (USGS) - Cook	1.0	Assess effectiveness of Corps/BPA tidal marsh restoration	BPA 100%	
200736400	Determining the effects of load following on reservoir hydraulics and migration behavior of juvenile salmonids.	Anadromous	Mainstem/Sy stemwide	Columbia River Research Laboratory	1.0	Load following effects, Little Goose	BPA 47%	Mixed
200736500	Canyon Creek Culvert Replacements	Anadromous	Columbia Plateau	Malheur National Forest	1.0	Another entity authorized/required (FS roads), assume covered by BPA-FS MOU	BPA 70% (73)	Under Rev.
200736900	Protect and Restore the North Fork Clearwater Subbasin	Resident	Mountain Snake	Nez Perce Tribe Dept. Fisheries Resource Management Watershed Division	1.0	Culvert removal, road improvements on FS and other lands; assume covered by BPA-FS MOU	BPA 70% (76)	Under Rev.
200737200	Lake Roosevelt White Sturgeon Conservation	Resident	Intermountain	Spokane Tribe	1.0	White sturgeon hatchery planning, assume in mitigation	BPA 100%	

	Hatchery Project					for FCRPS		
200738100	Lower Columbia Fish Enhancement Group Community-Based Multi-Sub-Basin Habitat Restoration Program	Anadromous	Columbia Estuary	Lower Columbia Fish Enhancement Group	1.0	Hire 3 project managers to facilitate suite of habitat actions; assume that mostly private & that projects where landowner required to undertake activity will be excluded	BPA 9%	Mixed
200738800	Fish Passage Data System (Key Functions Previously Performed by the Fish Passage Center)	Anadromous	Mainstem/Sy stemwide	Pacific States Marine Fisheries Commission (PSMFC)	1.0	FPC (assume all activities are included in program or mainstem amendment)	BPA 100%	
200701700	Lower Columbia Slough Off-Channel and Floodplain Habitat Restoration Project - Phase Two	Anadromous	Lower Columbia	Columbia Slough Watershed Council	2.1	Floodplain restoration on Portland-owned property, city and Corps authorized/required	BPA 20%	Mixed
200704300	Lower Columbia Fish Enhancement Group Community-Based Multi-Sub-Basin Habitat Restoration Program	Anadromous	Lower Columbia	Lower Columbia Fish Enhancement Group	2.1	Multiple restoration activities; multiple other entities potentially authorized/required to conduct	BPA 9%	Mixed
200706100	Deschutes Sub-basin Riparian Restoration through USDA Conservation Reserve Enhancement Program (CREP)	Anadromous	Columbia Plateau	Wyeast Resource Conservation & Development Area Council	2.1	Fund riparian planner to recruit/assist/plan with landowners for riparian protection under CREP program; NRCS authorized/required	BPA 7%	Mixed
200708300	Grande Ronde Cooperative Salmonid Monitoring and Evaluation Project	Anadromous	Blue Mountain	Confederated Tribes of the Umatilla Indian Reservation	2.1	Population/status monitoring; fishery managers authorized/required	BPA 20%	Mixed
200710200	Subbasin Scale Monitoring and Plan Implementation Monitoring for the Yakima Subbasin Plan	Anadromous	Columbia Plateau	Yakima Subbasin Fish and Wildlife Planning Board	2.1	Subbasin plan implementation, assume similar to other coordination	BPA 62%	Confirmed
200710600	Spokane Tribe Fish and Wildlife Planning and Coordination	All	Mainstem/Sy stemwide	Spokane Tribe	2.1	Coordination/travel costs for wildlife managers (wildlife managers authorized/required)	BPA 100%	
200710800	Regional Coordination for	All	Mainstem/Sy	Upper Columbia	2.1	Regional coordination for UCUT	BPA	

	Upper Columbia United Tribes		stemwide	United Tribes		(UCUT entities authorized/required)	100%	
200716200	Kalispel Tribe Fish and Wildlife Coordination	All	Mainstem/Sy stemwide	Kalispel Tribe	2.1	Coordination/travel costs for wildlife managers	BPA 100%	
200720000	Idaho Subbasin Planning and Comprehensive Wildlife Conservation Strategy (CWCS) Data Distribution System	All	Mainstem/Sy stemwide	Idaho Department of Fish & Game	2.1	Web-based data distribution for ID subbasin plan implementation; assume similar to other coordination proposals	BPA 46%	Confirmed
200725800	Development of reliable ESU-specific estimates of escapement, harvest, and straying for adult anadromous salmonids migrating through the Federal Columbia River Power System.	Anadromous	Mainstem/Sy stemwide	University of Idaho	2.1	Assume mostly FCRPS related, though fishery managers authorized/required to some degree	BPA 27%	Mixed
200735500	Determining the Accuracy of Adult Coho Salmon Population Estimates from a Random, Spatially Balanced design using Area-Under-the-Curve	Anadromous	Lower Columbia	Washington Department of Fish and Wildlife (WDFW)	2.1	Coho population research, other entities authorized/required (eg fishery managers)	BPA 12%	Confirmed
200737000	Methods of Applying Salmon Timing Mechanisms to Wild and Hatchery Fish Management	Anadromous	Columbia Gorge	The B. Taylor Group LLC	2.1	Hatchery/wild fish interactions research, fishery managers authorized required, but many connections to FCRPS operations/spill etc	BPA 100%	
200702600	Historic Changes in Organic Nutrient Sources and Productivity Proxies in the Columbia River Estuary in Relation to Juvenile Salmon Habitat Restoration Priorities	Anadromous	Columbia Estuary	Pacific Northwest National Laboratory	2.2	Nutrient research, fishery managers, others authorized/required	BPA 65%	Confirmed
200703100	Identifying prioritized action plans from subbasin strategies using a scenario-based decision support	Anadromous	Lower Columbia	Northwest Fisheries Science Center	2.2	Refinement of "decision support system" for aquatic habitat recovery; multiple entities authorized/required	BPA 55%	Mixed

	system							
200704500	Beebe Property Upland, Riparian, and Wetland Enhancements	Anadromous	Columbia Cascade	Washington Department of Fish and Wildlife (WDFW)	2.2	Vegetation, channel restoration on WDFW owned property near WDFW Chelan Falls hatchery; WDFW authorized/required to address	BPA 59%	Confirmed
200707000	Fish Passage Facility Final Design and Construction - Clear Lake Dam (NF Tieton R.).	Resident	Columbia Plateau	Washington Department of Fish and Wildlife (WDFW)	2.2	NonFCRPS dam blockage correction; USBR authorized/required	BPA 68%	Under Dev.
200709700	Restoring connectivity to a floodplain wetland on Multnomah Channel	Anadromous	Lower Columbia	Ducks Unlimited, Inc.	2.2	Creek restoration, but includes fixes to Metro installed (2002) water control that block passage (Metro authorized/required)	BPA 54%	Confirmed
200709900	Gold Creek (Lakeview District) Bull Trout Habitat and Migration Protection	Resident	Intermountain	Idaho Department of Environmental Quality	2.2	Mine restoration, mixed private & FS; assume MOU does not apply; DEQ, EPA authorized/required to address, along with FS	BPA 54%	Confirmed
200710500	Protecting & Restoring the Wallowa River Watershed	Anadromous	Blue Mountain	Nez Perce Tribe	2.2	Multiple restoration activities; multiple other entities potentially authorized/required to conduct	BPA 50%	Mixed
200710900	Aquatic Nuisance Species monitoring and outreach program for the Mountain Columbia province (Montana portion) of the Columbia River Basin	Resident	Mountain Columbia	Montana Department of Fish, Wildlife and Parks	2.2	Aquatic invasive monitoring, multiple entities authorized/required	BPA 70%	Confirmed
200711300	Cowiche Restoration and Protection Project (Easement/Fee Simple Acquisition)	Anadromous	Columbia Plateau	Washington Department of Fish and Wildlife (WDFW)	2.2	Anadromous fish habitat acquisition	BPA 26%	Confirmed
200711600	Lostine River Watershed Restoration	Anadromous	Blue Mountain	Nez Perce Tribe	2.2	Multiple restoration activities; multiple other entities potentially authorized/required to conduct	BPA 43%	Mixed
200713700	Open Channels	Resident	Upper Snake	Friends of the Teton River	2.2	Multiple restoration activities; multiple other entities potentially	BPA 65%	Under Dev.

						authorized/required		
200714700	Willamette Flow Management Project	Anadromous	Lower Columbia	Nature Conservancy	2.2	Flow management evaluation on Willamette; other hydro operators authorized/required	BPA 65%	Confirmed
200715000	Expand Salmonid Monitoring in Grays River to Meet Monitoring Needs Identified in the Lower Columbia Salmon Recovery and Subbasin Plan and maintain an at risk Chum Salmon Pop. through Supplementation.	Anadromous	Columbia Estuary	Washington Department of Fish and Wildlife (WDFW)	2.2	Population status monitoring for recovery; fishery managers, others authorized/required	BPA 38%	Confirmed
200717200	UPA Project - MVID West Canal Diversion and Headworks	Anadromous	Columbia Cascade	Methow Salmon Recovery Foundation	2.2	Irrigation infrastructure improvements to allow for canal use after required diversion reductions; irrigation district assumed to be authorized, if not required to conduct this work already	BPA 50%	Mixed
200718800	Lower Willamette River Fish Passage and Floodplain Reconnection at Oaks Bottom Wildlife Refuge	Anadromous	Lower Columbia	City of Portland	2.2	Replace culvert in Oaks Bottom Wildlife Refuge; assume neither City nor Corps already required to do	BPA 52%	Mixed
200719000	Icicle Creek Ecological Recovery and Fish Population Monitoring	Resident	Columbia Cascade	Washington Trout	2.2	Population monitoring of recently restored stream segment; fishery managers others authorized/required	BPA 69%	Mixed
200721600	Pacific Northwest Aquatic Monitoring Partnership- Fish Population Monitoring (FPM)--RME Design and Protocols. Programmatic and Standardized Work Products for PNW and the Columbia Basin	Anadromous	Mainstem/Sy stemwide	Pacific Northwest Aquatic Monitoring Partnership (PNAMP)	2.2	Multiple entity monitoring program	BPA 43%	Mixed

200722300	Genetic characteristics and movement patterns of bull trout populations between Chief Joseph and McNary Dams, within the Columbia Cascade and Columbia Plateau Provinces	Resident	Multiprovince	US Fish & Wildlife Service (USFWS)	2.2	Population/genetics studies; fishery managers, other hydro ops authorized/required	BPA 60%	Confirmed
200724500	Protect and Restore the Joseph Creek Watershed	Anadromous	Blue Mountain	Nez Perce Tribe	2.2	Multiple restoration activities; multiple other entities potentially authorized/required to conduct	BPA 40%	Mixed
200725100	UPA Project - Methow Valley Irrigation District East Diversion Dam Replacement	Anadromous	Columbia Cascade	Methow Valley Irrigation District	2.2	Replace existing infrastructure to meet fish passage standards; irrigation district authorized/required to do	BPA 41%	Mixed
200725200	Multi-scale assessment of hyporheic flow, temperature and fish distribution in Columbia River Tributaries	Anadromous	Mainstem/Sy stemwide	Confederated Tribes of the Umatilla Indian Reservation	2.2	Floodplain/water temp study/interactions; multiple entities authorized/required (fishery managers, DEQs, other hydro operators, etc).	BPA 34%	Confirmed
200725700	Protect and Restore the Imnaha Subbasin	Anadromous	Blue Mountain	Nez Perce Tribe	2.2	Multiple restoration activities; multiple other entities potentially authorized/required to conduct	BPA 48%	Mixed
200726800	Idaho Watershed Habitat Restoration Project via Custer Soil and Water Conservation District	Anadromous	Mountain Snake	Custer County Soil & Water Conservation District (SWCD)	2.2	Multiple restoration activities; multiple other entities potentially authorized/required to conduct	BPA 64%	Mixed
200727200	Conservation and Recovery of Endangered Species Act Listed Floodplain Fishes in the Willamette Basin, with Emphasis on Oregon Chub	Resident	Lower Columbia	US Fish & Wildlife Service (USFWS)	2.2	Multiple restoration activities for recovery of chub; multiple entities authorized/required (fishery managers, other entities impacting)	BPA 63%	Mixed
200727400	A Proposal to Expand Current Juvenile Salmonid Monitoring in the Lower Columbia Province to Meet the Monitoring Needs Identified in the Lower Columbia Salmon Recovery and Subbasin	Anadromous	Lower Columbia	Washington Department of Fish and Wildlife (WDFW)	2.2	Monitoring for recovery plan implementation; multiple entities authorized/required	BPA 31%	Confirmed

	Plan.							
200728100	Washington Salmonid Abundance and Productivity Monitoring Framework	Anadromous	Mainstem/Sy stemwide	Washington Department of Fish and Wildlife (WDFW)	2.2	Recovery monitoring; fishery managers authorized/required	BPA 52%	Mixed
200729300	Umatilla River Basin Stream Temperature Monitoring	Anadromous	Columbia Plateau	Confederated Tribes of the Umatilla Indian Reservation	2.2	Stream temp monitoring relating to recovery/salmonids; fishery managers, land managers, DEQ, others authorized/required	BPA 64%	Mixed
200733300	Timing and survival of PIT tagged juvenile fall Chinook from the Hanford Reach.	Anadromous	Columbia Plateau	CRITFC	2.2	PIT tagging Hanford Reach fall chinook; multiple other entities authorized/required	BPA 56%	Confirmed
200734000	A multidisciplinary collaborative approach to aquatic habitat monitoring & evaluation in the Walla Walla Subbasin	Anadromous	Columbia Plateau	Walla Walla Basin Watershed Council	2.2	Aquatic monitoring, multiple entities authorized/required	BPA 33%	Mixed
200734300	A Proposal to Expand Current Juvenile Salmonid Monitoring in the Columbia Estuary Province to Meet the Monitoring Needs Identified in the Lower Columbia Salmon Recovery and Subbasin Plan.	Anadromous	Columbia Estuary	Washington Department of Fish and Wildlife (WDFW)	2.2	Juvenile monitoring, estuary, recovery focused; other entities authorized/required (fishery managers, other entities impacting listed species)	BPA 34%	Confirmed
200736200	Assessing Fish Passage Through the Icicle Creek Boulder Field Above Leavenworth National Fish Hatchery	Anadromous	Columbia Cascade	Washington Trout	2.2	Tributary passage assessment; fishery managers authorized/required	BPA 67%	Under Dev.
200736800	Adult Coho Salmon Monitoring Proposal for the Lower Columbia Province.	Anadromous	Lower Columbia	Washington Department of Fish and Wildlife (WDFW)	2.2	Population status monitoring, fishery managers authorized/required	BPA 54%	Confirmed

200700700	Determine Status and Limiting Factors of Pacific Lamprey in Fifteenmile Subbasin, Oregon	Anadromous	Columbia Gorge	Confederated Tribes of Warm Springs Reservation of Oregon	2.3	Lamprey research, fishery managers, other hydro ops authorized/required	BPA 84%	Mixed
200700900	A Spatially Explicit & Web-accessible Database for Managing the Impacts of Expanding Colonial Waterbird Populations on Juvenile Salmonids (<i>Oncorhynchus</i> spp.) in the Columbia River Basin	Anadromous	Mainstem/Sy stemwide	Northwest Fisheries Science Center	2.3	Avian predation database; fishery managers, others authorized/required	BPA 79%	Confirmed
200701400	Stock specific run timing and upstream migration mortality of adult Chinook and sockeye salmon and steelhead through PIT tagging and genetic analyses at Bonneville Dam.	Anadromous	Mainstem/Sy stemwide	Columbia River Inter-Tribal Fish Commission (CRITFC)	2.3	Stock specific run timing; fishery managers authorized/required	BPA 82%	Confirmed
200701800	Stock Assessment for salmon, steelhead, and other fish species in Lower Crab Creek, Wshington	Anadromous	Columbia Plateau	Washington Department of Fish and Wildlife (WDFW)	2.3	Population research, fishery managers required/authorized	BPA 96%	Mixed
200702800	Pend Oreille River Basin Watershed Protection and Enhancement Project	Resident	Intermountain	Kalispel Tribe	2.3	Multiple restoration activities; multiple other entities potentially authorized/required to conduct	BPA 73%	Mixed
200703400	Columbia Cascade Pump Screen Correction	Anadromous	Columbia Cascade	Washington Department of Fish and Wildlife (WDFW)	2.3	Correcting irrigation screens; irrigators authorized/required to do (assuming impacting listed fish)	BPA 96%	Mixed
200703800	Preserving/Enhancing Bull Trout and Westslope Cutthroat Trout within the Upper Pend Oreille Basin.	Resident	Intermountain	Idaho Department of Fish & Game	2.3	Population analysis, limiting factors; fishery managers, Avista authorized/required	BPA 78%	Under Rev.
200704600	Steelhead Spawning Ground Surveys, Flow, and Temperature Monitoring of Small Tributaries of the	Anadromous	Columbia Cascade	Washington Department of Fish and Wildlife (WDFW)	2.3	Population/status monitoring; fishery managers authorized/required	BPA 87%	Confirmed

	Upper Middle Mainstem Columbia River.							
200704900	Efficacy of carcass analogs for restoring the productivity of nutrient limited salmonid streams	Anadromous	Columbia Gorge	Columbia River Research Laboratory	2.3	Evaluation carcass analogs(hatchery) for nutrient deposition; fishery managers, others authorized/required	BPA 97%	Confirmed
200705100	Assessment of Interactions between Hatchery and Wild Summer Steelhead in the John Day River Subbasin	Anadromous	Columbia Plateau	Confederated Tribes of Warm Springs Reservation of Oregon	2.3	Hatchery interactions with wild fish; fishery managers authorized/required	BPA 77%	Mixed
200705500	Entiat River - UPA - Lower Entiat River Off-Channel Restoration Project	Anadromous	Columbia Cascade	Chelan County Conservation District (SWCD)	2.3	Multiple irrigation passage fixes, assume irrigators authorized/required	BPA 96%	Confirmed
200706300	Use of drift nets to monitor production and limiting factors in recruitment of larval Pacific lamprey	Anadromous	Mainstem/Sy stemwide	Oregon State University	2.3	Evaluating larval lamprey via drift nets (McKenzie River); fishery managers, others impacting lamprey authorized/required	BPA 89%	Confirmed
200707900	Salmon & Steelhead Habitat Restoration and Protection in the Yakima Basin	Anadromous	Columbia Plateau	Mid-Columbia Fisheries Enhancement Group	2.3	Multiple restoration activities, multiple other entities may be authorized/required (or cert. that no projects for entities required?)	BPA 88%	Confirmed
200709100	The evaluation of limiting factors on resident and anadromous salmonids in Lake Wenatchee, Washington	Anadromous	Columbia Cascade	Washington Department of Fish and Wildlife (WDFW)	2.3	Assessing limiting factors for recovery, recreational fishery; fishery managers authorized/required	BPA 78%	Confirmed
200709600	Wildlife Inventory and Habitat Evaluation of Duck Valley Indian Reservation	Wildlife	Middle Snake	Shoshone Paiute Tribes	2.3	Duck Valley Indian Res wildlife inventory, not wildlife mitigation lands; other entity required (tribe, BIA)	BPA 70%	Under Dev.
200710700	What was old is new again: evaluate the pound net and beach seine as innovative live capture selective harvest gears	Anadromous	Mainstem/Sy stemwide	Washington Department of Fish and Wildlife (WDFW)	2.3	Harvest practices; fishery managers authorized/required	BPA 88%	Under Dev.

200711000	Differences in Functional Genes Between Hatchery and Wild Chinook Salmon	Anadromous	Mainstem/Sy stemwide	University of Idaho - Aquaculture Research Institute	2.3	Genetic research for hatchery reform efforts; fishery managers authorized/required	BPA 88%	Confirmed
200712200	White Salmon River watershed assessment above and below Condit Dam before anadromous fish reintroduction.	Anadromous	Columbia Gorge	Columbia River Research Laboratory	2.3	Post Condit dam removal reintroduction assessment; other entities authorized or required (fishery managers; Condit dam owners)	BPA 79%	Mixed
200712600	Protect and Restore the Lower Snake Tributary and Pataha Streams/Watersheds - Nez Perce Tribe	Anadromous	Columbia Plateau	Nez Perce Tribe DFRM Watershed Division	2.3	Culvert/barrier inventory on mixed ownership lands; multiple entities may be authorized/required to address	BPA 95%	Confirmed
200713100	Screening diversions for conservation of fish populations in the Columbia River Basin: entrainment losses, prioritization, and the efficacy of alternative technology designs	Anadromous	Mainstem/Sy stemwide	Columbia River Research Laboratory	2.3	Impacts of unscreened diversions study and design suggestions; others authorized/required (fishery managers/state water departments, irrigators)	BPA 92%	Confirmed
200713300	Systemwide distribution of genetic variation within and among populations of the white sturgeon (<i>Acipenser transmontanus</i>)	Resident	Mainstem/Sy stemwide	University of California at Davis	2.3	White sturgeon genetic research; fishery agencies, other actors authorized/required	BPA 97%	Confirmed
200713500	Lower Columbia Salmon Recovery Planning: Habitat Restoration Project List Development and Modeling	Anadromous	Lower Columbia	Washington Department of Fish and Wildlife (WDFW)	2.3	Recovery prioritization/planning; multiple entities authorized/require (fishery managers, other actors in recovery)	BPA 95%	Confirmed
200713600	Beavers as stream restorationists? Determining Systemwide status and trends in beaver impoundments in tributary streams, and the relationships between beaver impoundment and salmonids.	Wildlife	Mainstem/Sy stemwide	University of Idaho	2.3	Beaver research, impacts on salmonid, stream restoration; fish/wildlife managers authorized/required	BPA 87%	Confirmed

200714100	Bull Trout Effective Population Size in Isolated Populations	Resident	Blue Mountain	Columbia River Fisheries Program Office	2.3	Bull trout viability research; fishery managers authorized/required	BPA 88%	Confirmed
200714600	Bull Trout Population Status Monitoring in the Snake River Basin of Southeast Washington	Resident	Columbia Plateau	Washington Department of Fish and Wildlife (WDFW)	2.3	Population status monitoring for bull trout; fishery managers authorized/required	BPA 89%	Mixed
200714800	Monitoring and Models for Restoration and Adaptive Management of White Sturgeon in the Columbia River Basin	Resident	Mainstem/Sy stemwide	US Geological Survey (USGS) - Cook	2.3	White sturgeon monitoring, fishery managers, others authorized/required	BPA 79%	Under Dev.
200714900	Pend Oreille Nonnative Fish Suppression Project	Resident	Intermountain	Kalispel Tribe	2.3	Non-native fish suppression, fishery managers authorized/required	BPA 99%	Confirmed
200715100	Nutrient Enhancement Business Plan	Anadromous	Mainstem/Sy stemwide	Lower Columbia Fish Enhancement Group	2.3	Develop business plan to address use of hatchery carcasses as nutrient analog; fishery managers authorized/required	BPA 91%	Confirmed
200715600	Rock Creek Fish and Habitat Assessment for the Prioritization of Restoration and Protection.	Anadromous	Columbia Plateau	Yakama Confederated Tribes	2.3	Population monitoring primarily; fishery managers authorized/required	BPA 82%	Confirmed
200715700	Bull Trout Status and Abundance Monitoring in the Waters in and Bordering the Warm Springs Reservation, Oregon	Resident	Columbia Plateau	Confederated Tribes of Warm Springs Reservation of Oregon	2.3	Bull trout monitoring, lower Deschutes; other entities authorized required (fishery managers; Pelton Round Butte operators)	BPA 84%	Mixed
200716000	Evaluation of spawning success in Pacific salmon using electromyogram telemetry	Anadromous	Mainstem/Sy stemwide	Pacific Northwest National Laboratory	2.3	Sockeye salmon spawning success study; fishery managers authorized/required	BPA 89%	Under Dev.
200716600	Lower Columbia River Coastal Cutthroat Trout Population Response to Habitat Restoration	Anadromous	Columbia Estuary	Columbia River Fisheries Program Office	2.3	Coast cutthroat trout response to habitat restoration, via PIT tag study; multiple entities authorized/required (fishery managers requiring habitat restoration; & all entities doing	BPA 86%	Confirmed

						restoration activity)		
200717000	South Fork Snake River Yellowstone cutthroat trout recruitment and survival improvement	Resident	Upper Snake	Idaho Department of Fish & Game	2.3	Screening of irrigation, and updating fish mgmnt weirs; other entities authorized/required (irrigators for screens, IDFG for weirs)	BPA 96%	Confirmed
200717500	DNA typing to identify native inland <i>Oncorhynchus mykiss</i>	Resident	Mainstem/Sy stemwide	Washington State University	2.3	DNA research, fishery managers authorized/required	BPA 93%	Under Rev.
200717700	Protecting wild steelhead populations by minimizing the behavioral differences between hatchery and wild populations.	Anadromous	Mainstem/Sy stemwide	Northwest Fisheries Science Center	2.3	Behavior research, wild vs hatchery steelhead; fishery managers authorized/required	BPA 79%	Confirmed
200721300	Assessing Recruitment Failure Across White Sturgeon Populations: Differences in Prey Availability and Physical Habitat Among Areas with Consistent, Inconsistent, and no Annual Recruitment to Age-1	Resident	Mainstem/Sy stemwide	US Geological Survey (USGS) - Cook	2.3	Investigate causes of sturgeon recruitment failure; multiple entities authorized/required (fishery managers, other Hs impacting sturgeon)	BPA 77%	Confirmed
200722400	Implementation of the Okanogan Subbasin Plan. Initiate a Programmatic and Sequenced set of Key Habitat Restoration and Protection Actions	Anadromous	Columbia Cascade	Colville Confederated Tribes	2.3	Multiple restoration activities, multiple other entities may be authorized/required	BPA 90%	Mixed
200723100	UPA Entiat Subbasin Riparian Enhancement Program	Anadromous	Columbia Cascade	Chelan County Conservation District (SWCD)	2.3	Fencing, livestock management to protect listed species, mixed landownership; other entities authorized/required (FS, pvt, to avoid ESA impacts)	BPA 92%	Confirmed
200724900	Evaluation of Live Capture, Selective Fishing Gear	Anadromous	Mainstem/Sy stemwide	Colville Confederated Tribes	2.3	Testing selective fishing gear, fishery managers authorized/required	BPA 98%	Confirmed

200725600	Physical and Biological Testing of a Flow Velocity Enhancement System	Anadromous	Mainstem/Sy stemwide	Natural Solutions	2.3	Flow velocity/enhancement equipment testing; Cowlitz river; other hydro operators authorized/required	BPA 79%	Confirmed
200726100	Habitat effectiveness survey of existing, historical, and potential beaver habitat in the Upper Columbia Basin, Methow Subbasin	Wildlife	Columbia Cascade	Pacific Biodiversity Institute	2.3	Analysis of beaver, WA watershed, to address relocation needs; other entities authorized/required (WDFW, Forest Service)	BPA 80%	Under Dev.
200727500	Impact of American shad in the Columbia River	Anadromous	Mainstem/Sy stemwide	Columbia River Research Laboratory	2.3	Basic research on shad; fishery managers authorized/required	BPA 87%	Confirmed
200727600	Idaho Department of Fish and Game Rearing Expansion for Snake River Sockeye Salmon	Anadromous	Mountain Snake	Idaho Department of Fish & Game	2.3	Expand sockeye facilities to address limits at both LSRCP and Mitchell Act facilities; need clarity on connection with Mitchell Act hatchery (NMFS authorized/required to address)	BPA 98%	Mixed
200727900	Assess Stream Habitat for Salmonid Recovery in the Lower Clearwater Subbasin	Anadromous	Mountain Snake	Nez Perce Soil & Water Conservation District (SWCD)	2.3	Stream habitat inventory, Lower Clearwater (mixed ownership, tribal, federal, private); multiple agencies authorized/required to inventory streams	BPA 79%	Mixed
200728200	Okanagan River Restoration Initiative: Phases IV & V	Anadromous	Columbia Cascade	Okanagan Nation Alliance	2.3	Dike setbacks, other river restoration activities on land in Canada (BC agencies authorized/required; also see MidC PUD HCP?)	BPA 81%	Under Dev.
200728500	Subyearling chinook salmon use of the Lower Willamette River.	Anadromous	Lower Columbia	City of Portland	2.3	Population research, needed by Portland for ESA compliance	BPA 94%	Confirmed
200729100	Developing and Assessing Freshwater Mussel Distribution, Abundance and Life History Survey Methods in the Columbia Basin in Washington.	Resident	Columbia Cascade	Washington Department of Fish and Wildlife (WDFW)	2.3	Basic freshwater mussel study, WA, other entities authorized/required (WDFW, entities that impact mussels)	BPA 75%	
200734700	IDL Ponderosa Area Fish Passage	Resident	Mountain Snake	Idaho Department of Lands	2.3	Fish barrier removal on non-federal lands, other entities	BPA 88%	Confirmed

						authorized/required (state, landowners etc)		
200734900	Monitoring resident salmonid populations and the aquatic food web in the upper Icicle Creek subbasin of the Wenatchee River basin.	Resident	Columbia Cascade	Washington Trout	2.3	Tributary salmonid monitoring, fishery managers authorized/required	BPA 71%	Mixed
200735200	Feasibility Study and Implementation of a System-wide Conservation Enforcement Web-Based Data Center	Anadromous	Mainstem/Sy stemwide	Steven Vigg & Company	2.3	Conservation law enforcement database, other entities authorized/required (i.e. law enforcement agencies, fish/wildlife regulatory agencies)	BPA 78%	Under Dev.
200735800	Estimating the detection efficiency of snorkeling for detecting anadromous salmonid parr	Anadromous	Mainstem/Sy stemwide	US Forest Service (USFS) - Rocky Mt Research Station	2.3	Effectiveness of snorkel surveys, other entities authorized/required (eg fishery managers, other entities that rely on snorkel survey data)	BPA 88%	Confirmed
200735900	Application and enhancement of monitoring protocols for assessing productivity and watershed condition in headwater subcatchments of the John Day subbasin	Anadromous	Columbia Plateau	PNW Research Station -- Wenatchee	2.3	Watershed monitoring, multiple entities authorized/required (FS, landowners, state DEQ etc)	BPA 75%	Under Rev.
200736000	Columbia River/Cowlitz River Eulachon Research and Monitoring Plan (ERMP)	Anadromous	Columbia Estuary	Steward and Associates	2.3	Smelt population analysis, fishery managers authorized/required	BPA 94%	Under Rev.
200736100	IDL St. Joe Area Fish Passage	Resident	Mountain Snake	Idaho Department of Lands	2.3	Fish barrier removal on private lands, other entities authorized/required (landowners)	BPA 85%	Confirmed
200702200	Characterizing stress responses in lampreys: assessments based on cDNA microarrays	Resident	Mainstem/Sy stemwide	Columbia River Research Laboratory	3.0	Lamprey stress response research, fishery managers, other hydro operators authorized/required	BPA 100%	
200702300	Integrated Fruit Production in Fifteenmile and Hood	Anadromous	Columbia Gorge	Wyeast Resource Conservation &	3.0	Pesticide impacts, other entities authorized/required (eg EPA,	BPA 100%	

	River Subbasin Orchards			Development Area Council		NMFS; state DEQs, agricultural users, etc)		
200703000	Determination of steelhead smolt production and smoltification genes in the Yakima River	Anadromous	Columbia Plateau	Columbia River Inter-Tribal Fish Commission (CRITFC)	3.0	Yakima River smolt research, other entities authorized/required (eg fishery managers)	BPA 100%	
200703200	Potential effects of the invasive New Zealand mudsnail in tributaries of Bonneville Reservoir and the Deschutes River, (Potamopyrgus antipodarum).	Anadromous	Columbia Gorge	US Geological Survey (USGS) - Cook	3.0	Invasive species effects, multiple entities authorized/required	BPA 100%	
200703600	Mid-Columbia Trophic Dynamics Project	Anadromous	Columbia Cascade	Washington Department of Fish and Wildlife (WDFW)	3.0	Other entities required (eg non-fed midC project operators)	BPA 100%	
200703700	North Fork Toutle River Fish Passage	Anadromous	Lower Columbia	Steward and Associates	3.0	Mitigation for non-FCRPS COE sediment control structure, Corps authorized/required	BPA 100%	
200704700	Hydrography Spatial Data Enhancement Project - WDFW & WDNR Operational Data Updates and Integration to the PNW Hydrography Clearinghouse for the WA Columbia Basin	Anadromous	Mainstem/Sy stemwide	Interagency Committee (IAC)	3.0	Database improvements for WA policy/technical integration, WA state required	BPA 100%	
200704800	Transboundary Watershed Coordination in the Kootenai River Basin	Resident	Mountain Columbia	Kootenai River Network, Inc.	3.0	Expansion of coordinating office, multiple entities authorized/required (other entities in the network)	BPA 100%	
200705600	IDL Pend Oreille Area Fish Passage #2	Resident	Intermountain	Idaho Department of Lands	3.0	Culvert replacements, county roads (IDLrequired)	BPA 95%	Confirmed
200705700	Potlatch River Basin Conservation Easement	Anadromous	Mountain Snake	Potlatch Corporation	3.0	Conservation easement acquisition for anadromous fish, mitigating for industrial timber company; timber company authorized/required (note too, no	BPA 100%	

						crediting for capital anadromous fish habitat acquisitions)		
200705900	Abiotic and Biotic Factors Affecting the Success of Reintroductions of Anadromous Salmonids in Cle Elum Lake, Washington	Anadromous	Columbia Plateau	Washington Department of Fish and Wildlife (WDFW)	3.0	Research for re-introduction due to irrigation dam blockage (Cle Elum Lake), other entity required to address (Reclamation; fishery managers)	BPA 100%	
200706000	Lake Pend Oreille Invasive Fish	Resident	Intermountain	Idaho Department of Fish & Game	3.0	Invasive fish evaluation/management, Idaho DFG authorized/required	BPA 100%	
200706900	Determine status of migratory bull trout in the South Fork Payette River.	Resident	Middle Snake	Idaho Department of Fish & Game	3.0	Basic pop research, fishery managers authorized/required	BPA 100%	
200707200	Flathead Subbasin Flowering Rush and Yellowflag Iris Project	Resident	Mountain Columbia	Salish Kootenai College/University of Montana	3.0	Invasive weed management, landowners required to address	BPA 100%	
200707800	Characterizing the Geographic Distribution of Freshwater Mussels in the Columbia Basin Using Museum Collection Data.	Resident	Mainstem/Sy stemwide	Washington Department of Fish and Wildlife (WDFW)	3.0	Freshwater mussel pop analysis, another entity authorized/required (fishery managers)	BPA 100%	
200708100	WRIA-Based Restoration Project Feasibility Assessment and Prioritization, Coweeman River	Anadromous	Lower Columbia	Lower Columbia Fish Enhancement Group	3.0	Identifying appropriate offsite habitat improvements, multiple entities may be authorized/required'	BPA 100%	
200708900	Monitoring Invasive Species in the mainstem Columbia River: the development of a design to monitor the status and trends and provide for the early detection of invasive species	Anadromous	Mainstem/Sy stemwide	US Geological Survey (USGS) - Cook	3.0	Invasive aquatics species research, multiple entities authorized/required (fish managers, water quality managers; all river users)	BPA 100%	
200709000	Effects of the marine environment on the growth and survival of Columbia Basin spring Chinook and	Anadromous	Mainstem/Sy stemwide	Columbia River Inter-Tribal Fish Commission (CRITFC)	3.0	Ocean research re chinook; multiple entities authorized/required (eg fishery managers)	BPA 100%	

	sockeye salmon stocks.							
200711400	Vulcan Mountain Weed Control for Mule Deer and Bighorn Sheep Habitat Improvement	Wildlife	Intermountain	Washington Department of Fish and Wildlife (WDFW)	3.0	Weed control, wildlife managers/others required to address	BPA 100%	
200712000	Malheur Subbasin Habitat Restoration and Fish Enhancement – Logan Valley Project	Resident	Middle Snake	Burns Paiute Tribe	3.0	Logan Valley/Stanbro Ranch acquisition, mitigation for nonFCRPS dam (Warm Springs), other entities authorized/required (Reclamation)	BPA 100%	
200715400	Douglas County Multi Species Habitat Conservation Plan, Previously referred to as the Foster Creek Habitat Conservation Plan (FCHCP)	Wildlife	Columbia Cascade	Foster Creek Conservation District	3.0	County HCP implementation (agriculture, timber); other entities authorized/required to implement	BPA 100%	
200716400	Determination of Steelhead Production and Productivity Response to Habitat Manipulations in the Upper Potlatch River, Idaho	Anadromous	Mountain Snake	Idaho Department of Fish & Game	3.0	Report on steelhead production in Potlatch River, other entities (fishery managers) authorized/required	BPA 100%	
200716500	Relative abundance, distribution, and population structure of lampreys in the Columbia River Basin	Anadromous	Mainstem/Sy stemwide	Columbia River Research Laboratory	3.0	Lamprey population analysis, fishery managers authorized/required	BPA 100%	
200716800	Using otolith microstructure and microchemistry to delineate growth patterns and spatial structure of Snake River Fall Chinook salmon	Anadromous	Mainstem/Sy stemwide	National Oceanic & Atmospheric Administration (NOAA)	3.0	Snake River Fall Chinook basic biology research; other entities authorized/required (eg fishery managers)	BPA 100%	
200717100	Malheur River Subbasin Habitat Restoration and Fish Enhancement–	Resident	Middle Snake	Burns Paiute Tribe	3.0	Habitat to address fish/wildlife losses, but not related to FCRPS dam (Warm Springs dam),	BPA 100%	

	Stinkingwater Project					grazing; another entity authorized/required to address (eg non FCRPS, livestock owners, range managers)		
200717600	A Freshwater Mussel Watch for Biomonitoring in the Columbia River Basin	Resident	Mainstem/Sy stemwide	Confederated Tribes of the Umatilla Indian Reservation	3.0	Research re: mussels as indicator species, other entities authorized/required (eg fish/wildlife agencies, other hydro owners etc)	BPA 100%	
200718700	Use of Mainstem Habitats by Juvenile Pacific Lamprey (<i>Lampetra tridentata</i>)	Anadromous	Mainstem/Sy stemwide	Pacific Northwest National Laboratory	3.0	Lamprey research, mainstem, other entities authorized/required (eg other hydro)	BPA 100%	
200719700	Evaluating the sublethal impacts of current use pesticides on the environmental health of salmonids in the Columbia River Basin.	Anadromous	Mainstem/Sy stemwide	Northwest Fisheries Science Center	3.0	Pesticide impacts, other entities authorized/required (eg EPA, NMFS; state DEQs, agricultural users, etc)	BPA 100%	
200719800	Next Steps in Subbasin Planning: Umatilla Pilot Project	Anadromous	Columbia Plateau	Confederated Tribes of the Umatilla Indian Reservation	3.0	Subbasin plan implementation, multiple entities authorized/required	BPA 100%	
200721000	Mores Creek Watershed Floodplain and Habitat Restoration: Design and Implementation	Resident	Middle Snake	West Central Highlands Resource Conservation and Development Council	3.0	Mitigating non FCRPS dam (?); also mining impacts; other entities authorized/required (eg, Reclamation, FS)	BPA 100%	
200721500	Adult Steelhead Monitoring in Trout Creek	Anadromous	Columbia Gorge	Washington Department of Fish and Wildlife (WDFW)	3.0	Population monitoring, other entities authorized/required (eg WDFW)	BPA 100%	
200721800	Development of single nucleotide polymorphism (SNPs) genetic markers diagnostic between coastal rainbow trout and interior redband trout	Resident	Mountain Columbia	Idaho Department of Fish & Game	3.0	Fish diagnostics/biology research, other entities authorized/required (fishery managers)	BPA 100%	
200722100	Native Trout Restoration in the Methow, Entiat, and	Resident	Columbia Cascade	Washington Department of Fish	3.0	Trout restoration via investigation & invasives	BPA 100%	

	Wenatchee Subbasins			and Wildlife (WDFW)		management; WDFW authorized/required		
200722700	Rapid DNA Profiling of Hatchery and Wild Salmon Stocks with Single Nucleotide Polymorphism (SNP) Profiling	Anadromous	Mainstem/Sy stemwide	Pacific Northwest National Laboratory	3.0	DNA profiling, fishery managers authorized/required	BPA 100%	
200723000	Selective Gear Demonstration Project: Reef Net Fishing Gear for Lower Columbia River Commercial Salmon Fishery	Anadromous	Mainstem/Sy stemwide	Washington Sea Grant Program	3.0	Reefnet fishing gear testing (fishery managers authorized/required)	BPA 100%	
200723300	Distribution and Abundance Monitoring of <i>Oncorhynchus mykiss</i> within the Lower Clearwater Subbasin	Anadromous	Mountain Snake	Nez Perce Tribe Dept. Fisheries Resource Management Watershed Division	3.0	Population analysis for listed species, multiple entities authorized/required (fisheries managers, NMFS, entities with impacts to listed species)	BPA 100%	
200723400	Assessing Habitat and Environmental Suitability for Northern Leopard Frogs in the Crab Creek and Pend O'reille Sub-basins of Eastern Washington	Wildlife	Columbia Plateau	Washington Department of Fish and Wildlife (WDFW)	3.0	RME re: declining leopard frogs in WA; multiple entities authorized/required (WDFW, other sources of habitat decline)	BPA 100%	
200723800	Providing Services to Assist Record Keeping of Over the Bank Sales in Zone 6 Tribal Fisheries	Anadromous	Multiprovinc e	Steven Vigg & Company	3.0	Record keeping for harvest sales; other entities authorized/required (harvest managers)	BPA 100%	
200724100	Well modifications to improve aquatic habitat for Toppenish/Simcoe Creeks.	Anadromous	Columbia Plateau	Yakama Confederated Tribes	3.0	Well modifications to help groundwater; other entities authorized/required (well owners, state etc) [could check not required to do so]	BPA 100%	
200725000	Genetic Evaluation of Chinook Salmon Supplementation in Idaho Rivers	Anadromous	Mountain Snake	Idaho Department of Fish and Game / Nez Perce Tribe	3.0	Hatchery supplementation analysis in ID; other entities authorized/required (eg fishery managers, hatchery managers)	BPA 100%	

200725300	Monitoring of Adult Abundance and Spatial Distribution for Snake River Spring/Summer Chinook Salmon ESU Populations	Anadromous	Mainstem/Sy stemwide	Nez Perce Tribe / Idaho Department of Fish and Game	3.0	Monitoring adult chinook/ESA abundance; other entities authorized/required (fisheries managers, NMFS, others affecting chinook).	BPA 100%	
200725400	StreamNet Support and Services for Conservation and Recovery Data Needs	Anadromous	Mainstem/Sy stemwide	Pacific States Marine Fisheries Commission (PSMFC)	3.0	Fish population inventory coordination with another BPA project; other entities authorized/required (eg fishery managers)	BPA 100%	
200726200	Enhanced Landscape Classification to Improve Assessment of Conservation Restoration and Mitigation Projects	Anadromous	Mainstem/Sy stemwide	Pacific Northwest National Laboratory	3.0	General effectiveness evaluation (especially habitat); multiple entities authorized/required	BPA 100%	
200726700	Probabilistic Monitoring of the Status and Trends of Habitat, Water Quality, and Fish Presence in the Washington Portion of the Columbia River Basin	Anadromous	Mainstem/Sy stemwide	Interagency Committee (IAC)	3.0	Offsite habitat monitoring, using EMAP; multiple other entities authorized/required (WA state, individual landowners etc)	BPA 100%	
200727300	Evaluate the effects of hyporheic exchange on egg pocket water temperature in Snake River fall Chinook salmon spawning areas	Anadromous	Blue Mountain	Pacific Northwest National Laboratory	3.0	Evaluate benefits of changing discharge operations at Hells Canyon; Idaho Power required	BPA 100%	
200729400	Control of BKD by Inactivation of the Renibacterium salmoninarum Sortase Enzyme as an Alternative to Antibiotics	Anadromous	Mainstem/Sy stemwide	Northwest Fisheries Science Center	3.0	Hatchery disease research, other entities (eg hatchery/fishery managers) authorized/required	BPA 100%	
200729600	IDL Clearwater Area Fish Passage	Anadromous	Mountain Snake	Idaho Department of Lands	3.0	Culvert replacement towards meeting state SRBA requirements	BPA 93%	Confirmed
200729700	Effect of Elevated Water Temperature and Gas Supersaturation on Bull	Resident	Mainstem/Sy stemwide	Abernathy Fish Tech. Center	3.0	Temperature effects on bull trout, other entities authorized/required (eg fishery	BPA 100%	

	Trout Reproduction and Growth.					managers, temperature contributors)		
200729900	Investigation of the Relative Reproductive Success of Stray Hatchery and Wild Steelhead and the Influence of Hatchery Strays on Natural Productivity in the Deschutes River Subbasin	Anadromous	Columbia Plateau	Oregon Department of Fish & Wildlife (ODFW)	3.0	Hatchery/stray research in Deschutes; other entities authorized/required (eg ODFW, Pelton-Round Butte)	BPA 100%	
200731300	Expanded Acquisition and Display of Fish (Initially Anadromous Salmonids) Harvest Data in the StreamNet Database	Anadromous	Mainstem/Sy stemwide	Pacific States Marine Fisheries Commission (PSMFC)	3.0	Harvest data for StreamNet, other entities authorized/required (eg fishery managers)	BPA 100%	
200731400	Regional Consolidation of Habitat Restoration Project Information From Multiple Funding Sources with Dissemination Through the StreamNet Website	All	Mainstem/Sy stemwide	Pacific States Marine Fisheries Commission (PSMFC)	3.0	Coordination of habitat restoration data into StreamNet; multiple other entities authorized/required (e.g, other restoration funders)	BPA 100%	
200731500	Camas Slough/Lower Washougal River Realignment	Anadromous	Lower Columbia	Lower Columbia Fish Enhancement Group	3.0	Feasibility study for re-routing Lower Washougal, multiple entities authorized/required (highway, landowners etc)	BPA 100%	
200731900	WRIA-Based Restoration Project Feasibility Assessment and Prioritization, Kalama River	Anadromous	Lower Columbia	Lower Columbia Fish Enhancement Group	3.0	Identifying appropriate offsite habitat improvements, multiple entities may be authorized/required'	BPA 100%	
200732000	Inventory and Assess Fish Passage and Screening Needs in the Willow Creek Watershed	Anadromous	Columbia Plateau	Morrow County Soil & Water Conservation District (SWCD)	3.0	Inventory of passage barriers in watershed; other entities authorized/required (eg ODFW, landowners etc).	BPA 100%	
200732200	Ecosystem Economics Model for Willamette Basin Restoration and Conservation	Anadromous	Lower Columbia	David Evans and Associates, Inc.	3.0	Ecosystem economics modeling, multiple entities authorized/required	BPA 100%	

200732300	Investigate genetic parentage analysis techniques to estimate spawner abundance in ESA-listed steelhead populations	Anadromous	Mountain Snake	Idaho Department of Fish & Game	3.0	Genetic analysis regarding ESA-listed steelhead; fishery managers authorized/required	BPA 100%	
200732700	Compilation of Location-Specific Hatchery Release Data in Consistent Format Across Agencies by StreamNet	Anadromous	Mainstem/Sy stemwide	Pacific States Marine Fisheries Commission (PSMFC)	3.0	Hatchery release data coordination; fishery managers authorized/required	BPA 100%	
200733200	Mitigation of marine-derived nutrient loss in the Boise-Payette-Weiser subbasin.	Resident	Middle Snake	Idaho Department of Fish & Game	3.0	Marine derived nutrient loss research, other entities authorized/required (other hydro operators; fishery managers etc)	BPA 100%	
200733500	Migration and homing ecology of supplemented and wild spring Chinook salmon.	Anadromous	Columbia Plateau	Northwest Fisheries Science Center	3.0	Hatchery/supplementation research; fishery managers authorized/required; may be a "1" because this is a BPA-funded facility (Cle Elum)?	BPA 100%	
200733700	Oregon Plan Monitoring of Steelhead Status, Trend, and Habitat in the Grande Ronde River Subbasin.	Anadromous	Blue Mountain	Oregon Department of Fish & Wildlife (ODFW)	3.0	Steelhead status/trend monitoring, fishery managers authorized/required	BPA 100%	
200734200	IDL Maggie Cr. Area Fish Passage Proposal	Anadromous	Mountain Snake	Idaho Department of Lands	3.0	Culvert removal on IDL lands, IDL authorized/required (SRBA)	BPA 94%	Confirmed
200734400	Lower Columbia River Wild Coho DNA Stock Identification Proposal	Anadromous	Lower Columbia	Fish Friendly Inc.	3.0	DNA research wild coho, fishery managers authorized/required	BPA 100%	
200735300	Quantitative and effective analysis of Columbia River Chinook salmon (<i>Oncorhynchus tshawytscha</i>) and steelhead (<i>O. mykiss</i>) population viability.	Anadromous	Mainstem/Sy stemwide	Columbia River Inter-Tribal Fish Commission (CRITFC)	3.0	Population viability analysis, fishery managers authorized/required	BPA 100%	
200736300	IDL Pend Oreille Area Fish Passage	Resident	Intermountain	Idaho Department of Lands	3.0	Culvert replacement, non-federal lands ID, others authorized/required (i.e, IDL)	BPA 87%	Confirmed

200736700	Klickitat and Rock Creek Subbasin Habitat Improvement Program	Anadromous	Columbia Gorge	Klickitat County	3.0	Offsite habitat improvements/restoration, multiple activities, multiple entities with authority or requirement to fund	BPA 100%	
200737100	Documentation of food-web linkages in the mainstem Columbia River – towards understanding the role of invasive species and establishing a baseline trophic state	Resident	Columbia Gorge	Columbia River Research Laboratory	3.0	Impacts of aquatic invasive species; NOAA (eg National Sea Grant) and others authorized/required	BPA 100%	
200737300	IDL Priest Lake Fish Passage	Resident	Intermountain	Idaho Department of Lands	3.0	Culvert replacements, non-fed lands (IDL authorized/required via forest practices act, Snake River Basin Adjudication to address)	BPA 88%	Confirmed
200737400	Investigating Juvenile Salmonid Mortality Associated with Lock Flushing	Anadromous	Mainstem/Sy stemwide	bluefish.org	3.0	Navigation impacts, Corps/shippers required/authorized	BPA 100%	
200737500	Does the Decline of Idaho's Sockeye Salmon Correlate with a Mountain Beetle Infestation?	Wildlife	Upper Snake	bluefish.org	3.0	Nutrients, focus on affecting timber resource (timber managers authorized/required)	BPA 100%	
200737700	Cooler Temperatures for Federally Controlled Reservoirs	Anadromous	Mainstem/Sy stemwide	bluefish.org	3.0	Temperature control structure at Brownlee (Idaho Power required)	BPA 100%	
200737800	Investigating Reservoir Sediment Concerns of a Restored Free-Flowing Lower Snake River	Anadromous	Mainstem/Sy stemwide	bluefish.org	3.0	Evaluation of sediment were 4 lower snake dams removed (Corps, Reclamation authorized/required)	BPA 100%	
200737900	Surveying Jobs that Depend on the Existence of Lower Snake River Reservoirs	Anadromous	Mainstem/Sy stemwide	bluefish.org	3.0	Economic impacts of breaching 4 lower snake dams (Corps/others authorized/required and already evaluated)	BPA 100%	
200738000	Keeping Irrigators Whole in the Event of Reservoir	Anadromous	Mainstem/Sy stemwide	bluefish.org	3.0	Impacts to irrigators of removal (irrigators, plus	BPA 100%	

BPA “IN LIEU” INTERPRETIVE KEY & RATINGS SYSTEM

The *in lieu* provision, section 4(h)(10)(A) of the Northwest Power Act states:

“Expenditures of the Administrator pursuant to this paragraph shall be in addition to, not in lieu of, other expenditures authorized or required from other entities under other agreements or provisions of law.”

Interpretation:

If another entity is authorized or required under other agreements or provisions of law to undertake an activity, BPA cannot fund the activity unless BPA’s funding is in addition to, not in lieu of that other entity’s funding.

In lieu concerns for BPA will typically arise in areas of overlapping authority—where BPA may be authorized (but not required) to undertake the activity and another entity is also either required or authorized to undertake the activity.

How to apply the provision:

1. Is another entity authorized or required under other agreements or provisions of law to undertake the activity?
2. If no, then no further *in lieu* review is needed.
3. If yes, then BPA’s funding must be in addition to, not in lieu of that entity’s funding.

What is another entity?

BPA interprets this to mean any entity other than BPA, including but not limited to federal, state or tribal governmental entities, corporations, individuals, etc.

What does “authorized or required under other agreements or provisions of law” mean?

Taking into account relevant provisions of the Northwest Power Act, including sections 4(h)(10)(A), as well as sections 4(h)(8)(C),⁴ 4(h)(8)(A),⁵ and 4(h)(8)(B)⁶ in particular,

⁴ “To the extent the program provides for coordination of its measures with additional measures (including additional enhancement measures to deal with impacts caused by factors other than the development and operation of electric power facilities and programs), such additional measures are to be implemented in accordance with agreements among appropriate parties providing for the administration and funding of such additional measures.”

⁵ “Enhancement measures may be used, in appropriate circumstances, as a means of achieving offsite protection and mitigation with respect to compensation for losses arising from the development and operation of the hydroelectric facilities of the Columbia River and its tributaries as a system.”

⁶ “Consumers of electric power shall bear the cost of measures designed to deal with adverse impacts caused by the development and operation of electric power facilities and programs only.”

BPA interprets “authorized” to mean that another entity has been given legal authority under other agreements or provisions of law to undertake the protection, mitigation, or enhancement activity proposed for BPA funding. The entity need not have appropriations or be currently funding the activity to be “authorized” to do so.

BPA interprets “required” to mean that another entity has been directed under other agreements or provisions of law to undertake the activity. BPA interprets this to be a directive to the entity to conduct the activity. The entity need not be currently funding the activity even though “directed” to do so.

BPA interprets “other agreements” to mean a contract, permit, license, settlement, memorandum of agreement or other written arrangement between entities other than BPA.

BPA interprets “provisions of law” to mean a statute, regulation, or regulatory or judicial order.

When is BPA’s funding in addition to, not in lieu of, another entity’s funding?

“In lieu” means “in place of” or “instead of.” BPA interprets this to mean that when another entity is authorized or required under other agreements or provisions of law to undertake an activity, BPA’s funds can also be used, but only if they add to funding by the entity.

A rule of reasonableness has to apply here, so BPA will seek to adhere to the following general principles:

- The central objective is to make sure Bonneville expenditures to benefit fish and wildlife are in addition to and not replacing or supplanting the expenditures others are authorized or required to make.
- In evaluating proposals, BPA may consider a variety of relevant factors, such as the following:
 - the relationship of the project to FCRPS impacts
 - whether the activity has historically been funded by another entity
 - the nature and extent of the other entity’s authority or obligation to take the action
 - the amount and kind of the cost-share
 - the likelihood of the project being implemented without BPA participation

- Where BPA and another entity have overlapping *authority* to do work proposed as BPA mitigation, “cost-sharing”—where BPA funding is a portion of the overall proposed budget for a proposal—can provide the proof needed to demonstrate that the *in lieu* prohibition does not apply.
- BPA is not requiring a set amount of cost-sharing, but the amount of cost-sharing provided must allow BPA to reasonably conclude that its funds are adding to and not effectively supplanting the funding authorized or required of another entity. For example, while cost-sharing of \$1 could technically mean BPA is not supplanting another entity’s funding, this is plainly an unreasonable result; what level is “reasonable” will be evaluated on a case-by-case basis.
- Cost-sharing is not likely to be appropriate when another entity is plainly *required* to conduct the activity. For example, when another entity has contracted or has been ordered to perform the activity, BPA should not fund what’s already covered. BPA’s funding should create additional, measurable value to the project over and above what the entity is responsible for.
- A cost-share agreement between BPA and the entity may address appropriate cost-sharing on a programmatic basis (e.g., the MOU between BPA and the Forest Service).

***In lieu* ratings for proposals**

BPA rated each proposal as follows:

- 1** No *in lieu* concerns identified
- 2** Potential *in lieu* funding issues: another entity is authorized or required to undertake the activity proposed for BPA funding, but BPA funding appears to be in addition to, not *in lieu* of the other entity’s funding, typically due to cost-sharing.

These “2” ratings were further delineated into ratings of “2.1,” “2.2” and “2.3” describing BPA’s perspective on the reasonableness of the cost-sharing, taking into account the relative proportion of cost-sharing, the nature and extent of the other entity’s authorization or requirement to conduct the work, and the other principles outlined above. The ratings are as follows: 2.1—Appears reasonable; 2.2—May be reasonable; 2.3—Appears unreasonable.

- 3** *In lieu* funding problems: another entity is authorized or required to undertake the activity, and BPA’s funding is *in lieu* of that entity’s funding, e.g., the other entity is authorized or required to undertake the

activity and there is no cost-share offered, or the other entity is clearly required to undertake the activity, and the cost-share offered is not sufficient (does not appear to add value rather than just supplanting).

Under BPA's ratings then, a "1" rating is an "okay to fund" rating at the discretion of BPA. A "2" rating is a "may be okay to fund" at the discretion of BPA (with approximate leanings on use of that discretion indicated). A "3" rating is a "not okay to fund, in lieu concerns."

Remedies for *in lieu* concerns

The following are examples of things that can address *in lieu* concerns identified:

4. Written confirmation by the proponent that neither it nor any other entity is authorized or required by other agreements or provisions of law to undertake the activity for which BPA funding is being sought.
5. Further description of how BPA's funding is in addition to, not *in lieu* of the other entity's funding, taking into account the principles described above. For example, a project sponsor could provide additional information showing that it is applying its funds to accomplish other aspects of the same overall project but had not included that explanation in the original proposal.
 - For example, assume a proposal seeking 100 percent BPA funding for replacement of three culverts that another entity is already required to replace was rated a "3." The sponsor could provide information that the proposal to the Council was part of a larger project that would remove six culverts, and the other three were being funded in the same time period by the entity; this would be a potentially reasonable cost-share and result in the project getting a "2" rating.
6. Information about past funding activities by the entity, indicating that it has not funded the kind of activity proposed for BPA funding.