1. Project Title: East Fork Lewis River Floodplain Reconnection

2. Requested Funding Amount: $246,459

3. Project Manager (name, address, telephone, email)

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4. Identification of problem or opportunity to be addressed.

The Lower Columbia Estuary Partnership (Estuary Partnership) will restore 150 acres of riverine and floodplain habitat along the East Fork Lewis River (ELFR) in the vicinity of the Ridgefield Pits. The project will remedy the impacts of historic mining that began in the 1950's. The site has been severely impacted when in 1996 the river avulsed into (captured) the Ridgefield Pits; a series of nine abandoned aggregate mining pits (Figure 1). As a result, the EFLR lost more than one- mile of high-quality salmonid and lamprey spawning and rearing habitat. Since 1996 the EFLR has been restricted and locked into the Ridgefield Pits (see Appendix, Fig. 1), this has resulted in extremely poor habitat and water quality which has become a heaven for predatory fish.

Figure 1. Ridgefield Pits current conditions. There are nine pits total. The majority of the pits have changed very little over the last 15 years and the predicted recovery of the pits is greater than 75 years.

The Lower Columbia Recovery Plan (Recovery Plan 2010) identifies the Lewis River Watershed, which includes the East Fork Lewis River (EFLR), chum population as a core population. The chum core population is shared between the North Fork Lewis River (NFLR) watershed and the EFLR watershed. A core population is defined as one that was historically the most productive. Both the NFLR and EFLR chum populations are identified as primary contributors to recovery. The Recovery Plan identifies the Lewis River chum Cascade Strata population as having the potential to move from a "very low" viability of persistence to a "high" status level. The Recovery Plan points to the primary factor for regional chum recovery is the restoration of key habitat in tributaries such as the EFLR.

The Ridgefield Pits Floodplain Reconnection (RPFR) project is located about 0.5 miles above the head of tide between River Mile 7-10, in a low gradient section of the EFLR with known cold-water inputs (Estuary Partnership 2020 and Ecology 2021). Chum salmon have been observed in the area and observations show that chum historically are present within the project area as well as upstream and downstream of the project site (see Appendix, Figure 2 and 3). There are known sources of cold water within the project area including cooler surface water and documented hyporheic flow (Estuary Partnership 2020).

The RPFR project will be the single largest mainstem habitat project on the EFLR, which will address key limiting factors for different life stages for chum and other ESA listed salmonids (Habitat Plan 2010 and Lower Columbia Estuary Partnership 2020). Restoration actions will specifically target the shared fall chum salmon population.

The project will address key limiting for chum and other salmonids and lamprey, including:

- Sediment- There is a large influx of sediment from channel sources due to rapid channel migration rates and avulsions into streamside gravel pits.
- Key habitat- low large woody debris levels, channelization, and degraded riparian forests contribute to an overall lack of habitat diversity. Key habitat has been lost due to channelization and to the channel avulsion.
- Temperature- is impacted by the river flowing through the pits and warming. High summer temperatures provide habitat for non-native predators, resulting in high predation rates on juvenile salmonids. High summer temperatures also create a thermal barrier for returning adult salmonids, increasing mortality and seasonally blocking access to twelve miles of fall Chinook habitat in the upper basin.

5. Background Provide information related to how this project fits into greater watershed objectives and any previously collected information at the project site (e.g. fish surveys, habitat delineation, etc.)

Gravel mining operations began along the EFLR in the 1950's and created what are known as the Ridgefield Pits. In 1996 the EFLR avulsed into the Ridgefield Pits, essentially routing all flow and sediment through the pits. Previous assessments (WEST Consultants 2001 & 2013) estimated that natural filling of the pits with bedload would result in "recovery" by 2026 (i.e., channel filling back up to a pre-1996 avulsion level). The Estuary Partnership's analysis (2019) showed that the Ridgefield Pits still maintain a large capacity and that full recovery via natural sediment filling would not likely occur in some of the pits until 2070, with some pits likely to not recover at all. In the meantime, the site continues to "trap" virtually all EFLR sediment, resulting in significant "legacy" impacts to critical downstream habitats. These ongoing legacy impacts include channel incision and bank erosion resulting in a loss of connectivity between the river and adjacent floodplain. This converted a once complex, multi-thread system into a single, incised channel, which substantially reduced habitat complexity, diversity and productivity.

This project represents the single greatest opportunity to conduct broad scale floodplain reconnection restoring function to a three-mile long, multi-species reach of the East Fork. Restoration efforts will focus on recreating a dynamic, low gradient, braided environment reflective of the highly productive channel planform that occurred historically. Increasing habitat capacity and diversity in this high priority stream corridor provides a strong certainty of success for supporting viability improvements for five ESA-listed salmonid runs. The project will increase available cold-water refuge and reduce mainstem temperatures, therefore eliminating a zone of high predation on outmigrating juveniles and removing a thermal barrier that blocks access for summer steelhead and fall Chinook to the upper thirty miles of the watershed.

The long-term recovery strategy for Lower Columbia River (LCR) salmonids depends on effective habitat restoration in lower elevation mainstem reaches of large streams and rivers, particularly in significant historical production areas like the EFLR. This section of the lower EFLR is one of the highest priority restoration areas for spawning chum (Habitat Restoration Plan LCFRB 2009). Protection of remaining habitat functions in the watershed is also critical. However, significant chum production can only be restored through substantial improvements in habitat conditions which are currently very poor. Effective habitat restoration depends on watershed-based actions to repair habitat forming processes that determine mainstem stream habitat conditions. Process-related actions provide longer-term benefits, but typically demand large-scale and long-term efforts.

The primary chum population is identified as a historical core population by the Willamette-Lower Columbia Technical Review Team and is targeted for improvement from Very Low to High viability. Historically productive areas likely included the lower North Fork and East Fork Lewis rivers and Cedar Creek. Chum salmon currently spawn in the lower reaches of the mainstem North Fork River below Merwin Dam, RM 11.7 to 19.2, and East Fork Lewis River from RM 5.6 to 14.3. Beginning in spring 2016, approximately 100,000 hatchery-origin fed-fry have been released into the East Fork Lewis River annually to help re-build this population (LCFRB 2024).

Estimates of steelhead production in 2001 included hatchery production (prior to the EF Lewis River becoming a wild steelhead gene bank) included 12,481 wild smolts and 106,836 hatchery smolts. Smolt estimates for other species included: 5,716 coho, 2,060 chum and 1,068 sea-run cutthroat. Spawning data has not been collected by WDFW in the pits area (except for the area above Pit 1) due to avulsion and lack of suitable habitat. Historical accounts of the area where the avulsion occurred suggest that it hosted valuable spawning and rearing habitat due to the availability of spawning gravels and suitable depths and velocities.

The Estuary Partnership conducted presence/absence surveys for salmonids during the summers of 2018 and 2019. The data collection was accomplished using two teams and using a snorkel survey approach. Data collection occurred in June and August 2018 and again in August in 2019. The surveys began at Daybreak Park and ended below the Ridgefield Pits. As part of the June 2018 survey, we collected presence/absence data from each of the nine pits. The results from our surveys show juvenile fish present in almost every section of the river throughout the project reach. Juveniles that were found included yearling and sub-yearling steelhead, coho and Chinook. The juveniles were often found clustered in and around structures (wood), in areas that had cooler water and in tail-outs. In the June 2018 survey several of the pits (8 and 9) contained much cooler water and 360 juveniles were found in Pit 8. Approximately 550 fish were found around Pits 1 and 2 suggesting that this is an important area for juveniles. Juvenile salmon and steelhead were also found in and around Pits 1, 2, 8 and 9.

While many habitat-related actions have already been undertaken in the EFLR, current activities do not reflect the scale of habitat improvements needed for full and long-term recovery of Lower Columbia fall Chinook in the EFLR. This is why the proposed restoration of the Ridgefield Pits reach is a keystone habitat project for the EFLR and for the recovery of Lower Columbia chum. The project will build upon habitat restoration actions that have already been completed downstream of the proposed project area and others that are under development to repair full habitat forming processes both within the project area and downstream. In addition, the project will have many added benefits for other primary, contributing ESA-listed populations in the EFLR, including fall Chinook, coho salmon, and steelhead (summer and winter). To date, LCFRB helped secure Salmon Recovery Funding Board grants for six acquisition parcels, three assessments, 12 designs and 14 restoration projects in the EFLR watershed, totaling over $8 million in investments.

6. Project Objective(s) State the objectives of your Full Proposal including how the project is consistent with Aquatics Fund objectives and priorities, and recovery plans. Clearly describe the biological benefits and expected outcome of your project. Describe the technical basis for the objectives including the identification of any supporting technical references. 2 Identify biological metrics to help quantify the benefit of the project. Describe effects to other resource areas such as recreation and wildlife. The Aquatic Fund Subgroup to the ACC has completed a Lewis River Aquatic Fund Priority Reaches (Priority Reaches) document which provides priority rankings for stream reaches within the Lewis River watershed. The Priority Reaches document is aligned with the LCFRB Interactive map which is found on their website at https://www.lcfrb.org/salmon-resource-map. The interactive maps provide a wealth of information that should help project proponents in selecting areas to focus their habitat improvement efforts. For consideration of funding the proponent must demonstrate that they have reviewed both the Priority Reaches and the LCFRB Interactive map and selected appropriate projects/reaches from those two tools. Additionally, proponent must show how proposed project is consistent with fund objectives and priorities. Projects proposed in reaches other than those identified in the Priority Reaches document or high priority reaches in the LCFRB habitat strategy (Tier 1 and Tier 2) need a clear explanation of why they still support Lewis River Aquatic Fund goals

This project takes place in a high priority reach (Tier 1 reach) including Tier 1 reaches on both the mainstem EFLR as well as an important tributary, Dyer Creek. A map of the Tier reaches can be viewed at - https://experience.arcgis.com/experience/b6add7af40ae45a9a92736039dbb0883/page/Main-Page/?views=Layers#data_s=id%3AdataSource_1-18cf5794505-layer-19%3A3). The project was identified as one of the highest ranked projects in the East Fork Lewis River Habitat Restoration Plan (https://www.lcfrb.org/_files/ugd/810197_159de691eef748ba82655284836deda5.pdf, 2009) and was cited specifically for it's importance for recovery.

The main objective of the project is to reconnect the river to the historic floodplain and to improve physical and biological conditions within the project area. Supporting objectives of the include:

1. Increase chum salmon, salmonid and lamprey habitat quality and quantity by creating a pool/riffle frequency greater than 10 pools/mi., placing approximately 3,700 pieces of woody material, reconnecting/regrading 3/4 mile of mainstem EFLR and 1.3 miles of side-channels including Dyer Creek and two upstream side-channels.
2. Increase the channel migration zone by 1,500 ft. including reconnecting 150 acres of floodplain habitat and overbank flows and floodplain inundation that occurs annually for at least 1 month/year.
3. Create a dynamic channel that is well connected to the floodplain/CMZ, with moderate-to-high channel sinuosity (>1.3), planform complexity, natural bank erosion rates, slope and

channel geometry conditions that are depositional and a streambed composed of mixed sediment sizes.

4. Enhance thermal refuge by enhancing, protecting and expanding existing cold-water refugia at Pits 8, 9, Dyer Creek and by creating head gradients that result in strong hyporheic exchange flows.
5. Restore native vegetation communities on approximately 100 acres of floodplain, associated channels and Dyer Creek with a canopy closure from vegetation that is greater than 50%.

Biological and physical processes goals and supporting goals are shown below. Expected benefits will be targeted at the primary limiting factors, including habitat diversity and key habitat and sediment for egg incubation, pre-spawn holding and spawning life history stages for chum and other salmonids.

Goal 1. Enhance thermal refuge and incorporate cold water areas into restoration efforts.
1a. Protect, enhance, and expand access to existing known cold-water refugia in north-side side-channels, and in Pits 8 and 9 of the Ridgefield Pits.
1b. Achieve a low flow channel width-to-depth ratio that is below 15 and ideally below 12.
1c. Increase juvenile salmonid over-summer thermal refugia by creating head gradients that result in strong hyporheic exchange flows – i.e. highly sinuous meanders that create strong gradients across gravel bars where hyporheic flow contributes to backbar alcoves; occasional valley wall contacts with alcoves fed by wall-based channels; and offset riffles around islands.

Goal 2. Increase the quality and quantity of chum and other salmonid spawning and rearing habitat.
2a. Achieve a moderate-to-high channel sinuosity (>1.3) to increase planform complexity.
2b. Achieve a pool (and riffle) frequency greater than 10 pools per mile in the main channel, co- dominant channels, and active side-channels.
2c. Increase large wood quantities to exceed the Fox and Bolton (2007) 75th percentile quantities of wood and key pieces that would be expected under undisturbed conditions. A range of wood size classes should be present, with abundant large pieces exceeding the NOAA 'properly functioning condition' threshold of 80 pieces/mi for wood over 24 inches diameter and 50 feet in length. Wood placements to include individual pieces and jams to provide habitat complexity and to encourage structural formation of bars, pools, and other geomorphic features. Where suitable, jams should recruit mobile wood over time. Wood placements should also occur on floodplains, especially where vegetation is sparse or young, to emulate hydraulic roughness found in natural vegetated floodplains.
2d. Achieve a low-flow channel margin length that is at least five times the corresponding valley- bottom length.
2e. Achieve the presence of zero velocity areas during seasonal high flows in order to provide for flood refuge by juvenile salmonids.
2f. Create abundant (>8 acres/mile of stream) connected off-channel wetlands and beaver dam complexes that are accessible to fish throughout the year.

Goal 3. Restore Channel Migration Zone and Floodplain Connectivity.
3a. Expand Channel Migration Zone and floodplain inundation extent by removing (or setting back) levees, riprap, fill, and other hydromodifications impeding channel adjustment or flood inundation to the extent possible given private property and infrastructure constraints.
3b. Achieve an active valley width (i.e. extent of intact CMZ and floodplain) that is at least 6 times the active channel width.

3c. Achieve overbank flows and significant floodplain inundation that occurs annually for at least 1 month of the year, on average. The five-year flood should create very large inundation.

Goal 4. Create a dynamic channel that allows for natural rates of channel adjustment and sediment transport.
4a. Achieve slope and channel geometry conditions that are depositional, especially in the Ridgefield Pits segment where net deposition is needed to help build grade lost to gravel mining, but also in other segments that exhibit incision.
4b. Achieve bank erosion at meander bends that occurs at a natural rate. Minor erosion may occur every year (<5 feet), with larger adjustments at the 2- to 5-year event (e.g. scrolling) and more dramatic changes (e.g. chute and neck cut-off avulsions) occurring during large floods (>10-year event).
4c. Achieve a streambed that is composed of a mix of sediment sizes, with channel bed dominated (>70%) by coarse gravel and cobble and floodplains eventually topped with fine sand and silt. Increase substrate patchiness. Decrease fines to less than 15% in potential spawning areas.

Technical documents used to inform construction are listed below with links to the supporting documentation:

- Review of prior reports (geomorphology, hydraulic modeling and aquatic resources)
- Geomorphic assessment (http://s458607291.onlinehome.us/FTP/RidgefieldPits/Deliverables/Attachment%20B%20(Geomorph%20Report).pdf
- Hydraulic modeling (http://s458607291.onlinehome.us/FTP/RidgefieldPits/Deliverables/Attachment%20C%20(Hydraulics).pdf)
- Restoration alternatives (http://s458607291.onlinehome.us/FTP/RidgefieldPits/Deliverables/Attachment%20F%20(Restoration%20Alternatives).pdf)
- Preliminary designs (http://s458607291.onlinehome.us/FTP/RidgefieldPits/Deliverables/Attachment%20H%20(Prelim%20Drawings).pdf)
- Preliminary design basis of design report (http://s458607291.onlinehome.us/FTP/RidgefieldPits/Deliverables/Attachment%20I%20(BOD).pdf)
- Final designs (can be provided upon request)

7. Tasks State the specific actions which must be taken to achieve the project objectives. [NOTE: If the project will cause any latent, dangerous condition (e.g. submerged wooden structures in a waterway used by boaters and/or tubers) include installation of permanent warning signs in the project tasks.]

The EFLR floodplain reconnection project includes the following tasks:

- Regrade and/or otherwise improve approximately 130 acres of floodplain formerly mined for aggregate including filling eight gravel pits, totaling approximately 391,000 cy of earthwork;
- Reconstruct approximately 12,800 linear feet of the East Fork Lewis River and excavate five new floodplain channels and construct other side channels and habitat areas;
- Isolate and dewater in-water work areas;

- Remove fish from in-water work areas and transfer to designated locations outside of the site;
- Install wood habitat structures, place approximately 3,000 pieces of large wood throughout the project area and install willow trenches;
- Remove four levees in the vicinity of the Ridgefield Pits that offer no flood control and have been breached;
- Reestablish approximately 80 acres of native riparian forest; and,
- Monitor the site after project completion.

8. Methods Describe methods to be used, by including the following: • Preliminary Design including existing site plan with bankfull width indicated, plan view drawing overlaid with proposed actions of specific dimensions, and project profile and cross sections at important project locations showing water surface elevations relevant to the design including design flows. Structure design details should also be provided for instream projects involving large wood. • Identify sources of Best Management Practices (BMPs) and how they will protect resource values. • Describe how the restoration methods relate to specific fish habitat benefits and seasonal flow conditions, including expected short- and long-term functional habitat responses.

The project will support salmon and steelhead ability to persist despite shifts in ecological conditions. Higher winter and lower summer flows as well as higher water temperatures can impact spawning habitat for fall chum and other salmonids. Actions that focus on reconnecting off-channel, floodplain and tributary areas could provide more flow refuge opportunities and greater distribution and resiliency. Reconnecting floodplain and side-channel areas may support greater water storage and cold-water refuge options to combat climate change, while also increasing habitat diversity and capacity. Restoring historic complexity and connectivity will improve habitat function and support resiliency to disturbances.

Best Management Processes and protection of resources are included as part of our HPA (DFW), water quality certification (Ecology) and through our ESA consultation (NOAA). These best management practices have been incorporated into our construction actions and include:

- fish salvage
- turbidity
- dewatering
- site access and mobilization
- construction of habitat features
- stream crossings

This project will provide a range of aquatic habitat and river process benefits. The primary benefit will be addressing the currently severely degraded conditions in the Ridgefield Pits reach. This work will immediately improve aquatic habitat and floodplain connectivity at the site and will re-set the geomorphic trajectory to support future channel dynamics, stream temperature improvements, establishment of native vegetation, and continued deposition of streambed material to re-build the channel and floodplain elevations lost due to gravel mining.

In addition to the channel and floodplain re-grading, a variety of large wood additions are planned for the channels, alcoves, and floodplain areas. The large wood habitat is designed to primarily accomplish the large wood objective (2c), but will also help support other objectives including pool frequency (2b), high flow refuge (2f), and substrate deposition (4a) and patchiness (4c). Instream wood placements include a variety of wood structure types.

These include 1) bar apex log jams at flow splits to support split flow and maintain island vegetation, 2) jams in pools to support pool scour and provide cover, 3) channel-spanning jams in smaller channels or off-channel areas to support sediment deposition and initiate planform changes, 4) general complexity jams to provide juvenile hiding cover and complexity throughout, and 4) floodplain roughness structures that provide hydraulic roughness and high flow refuge habitat throughout the floodplain. Overall, a very high density of in-channel and floodplain wood placements will be necessary to provide hydraulic roughness that will be necessary to support depositional processes, erosion control, and vegetation growth, especially in the first few years immediately following construction due to exposed soils and young vegetation.

Planting of native wetland, riparian, and floodplain vegetation will occur throughout the project site following construction. This will include a patchwork mosaic of species assemblages selected based on the range of elevations, soil conditions, and inundation frequencies. Two primary planting zones have been identified for the preliminary design. These include: 1) a riparian buffer zone, which extends approximately 25 feet from either side of the channels and will primarily include planting of willow and cottonwood live stakes, and 2) a floodplain wetlands zone that includes the remainder of the site and will consist of a wide range of native species found throughout undisturbed portions of the site and listed in the design plans. These will likely be bare root seedlings. Planting plan details including proportions of each species, type of planting stock, browse control, and any irrigation or maintenance needs will be determined in later design stages.

Enhancements at the side-channels include large wood habitat additions and beaver dam analogs. At the upstream end of the side-channel there are multiple entry points. Apex log jams will be placed at these entrances in order to encourage scour and split flow conditions into the side channel. Various log jam types will be placed throughout the side channel. These are the same as the log jam types described above for the Ridgefield Pits site, with the exception of floodplain roughness, which is not necessary due to the already heavily vegetated floodplain. In addition, we anticipate that some riparian trees will be felled into the side-channels, mostly pushed over by machinery to retain the rootwad. This action provides high complexity habitat of whole trees and can also be used to help facilitate access routes.

At the lower end of the side-channel, beaver dam analogs will be installed. These will be post-supported structures racked with small wood and slash. These will be designed to provide immediate functions of off-channel habitat, sediment deposition, vegetation growth, and increasing groundwater tables, but are also anticipated to support additional beaver activity.

9. Specific Work Products Identify specific deliverable results of the project. Project managers will be required to provide status updates with submission of project invoices.

The Estuary Partnership has completed final designs, and the required permits will be received by winter 2025/2026. The previous restoration efforts conducted in this area make the proposed project a true lynchpin to addressing critical limiting factors for Lower Columbia salmonids. The planned restoration will also benefit at least five miles of EFLR habitat downstream of the project where nine restoration projects have already occurred and xxx miles upstream.

Construction will be overseen by the Estuary Partnership and contractors. Critical components of Construction will include:

1. Final design and site map of all EFLR floodplain reconnection project elements, signed and sealed by a professional engineer licensed in Washington;
2. As-built construction plan set. Completion of an as-built plan set sealed/stamped by project engineer showing the completion of all elements of the EFLR floodplain reconnection project;
3. Annotated digital photographs showing conditions before, during, and after construction;
4. GIS shapefile(s) of completed project location; and,
5. Riparian planting plan for project site.

10. Project Duration
a. Identify project duration. Note that duration of a project funded from Fiscal Year 2025 appropriations may extend beyond the end of the fiscal year.
b. Provide a detailed project schedule to include: o Initiation of project o Completion date for each milestone or major task o Project close-out site visit (with PacifiCorp, Cowlitz PUD, and ACC representatives) o Monitoring & reporting on results

The beginning phases of the restoration project are already underway. The main elements of the schedule, including project construction, are shown below. Construction is expected to last until winter 2026.

- Construction management and construction oversite. This will be led by LCEP. Schedule: May 2024- November 2026.
- Pre-qualifying and hiring contractors and restoration subcontractors. This will be led by LCEP. Schedule: October 2024- January 2025.
- Fish salvage. This will be led by LCEP & WDFW. Schedule: summer 2025 & summer 2026.
- Floodplain grading & placement of habitat features. This will be led by the Contractor. Schedule: summer 2025 & summer 2026.
- Riparian plantings and plant maintenance. This will be led by LCEP & Clark County with consultation from Ecology. Schedule: fall 2025 2 and 2026 and maintenance 2027.
- Project close out site visit. This will occur in winter 2027/2028.
- Monitoring. This will occur in 2027 and 2028.

11. Permits and Authorizations Identify any applicable permits and resource surveys required for project. Please include timeline for obtaining and any action taken to-date. Applicant will be responsible for securing all such necessary permits. Obtain permission of all owners of land used for access to and completion of the project. Landowner(s) must sign PacifiCorp's Release Agreement prior to finalization of a Funding Agreement with PacifiCorp.

Clark County is the landowner where restoration activities will take place. We have included a landowner acknowledgment (LOA) form as part of our RCO Grant Agreement for this restoration site. We will complete the requisite PacifiCorp LOA prior to the final grant.

All permits and access agreements will be acquired by fall 2024. Here is a summary and status of the permits and access agreements:

- Cultural Assessment (Section 106)- complete and permit received
- Hydraulics Project Approval- complete and permit received.
- SEPA and local permits- exempt per the HRPP Programmatic (WDFW)
- NEPA- complete and expected permit 11/15/2024
- ESA- complete and expected permit date 11/1/2024
- Floodplain permit- complete and expected permit date 1/15/2026.
- USACE JARPA/Nationwide- complete and expected permit date 11/1/2024
- Ecology WQ permit- complete and permit received
- BPA Access Agreement- complete and agreement expected 11/15/ 2024
- Clark County Access Agreement- complete and expected agreement 10/16/ 2024
- Storedahl Access Agreement- complete and agreement received
- Columbia Land Trust Access Agreement- complete and agreement received

12. Matching Funds and In-kind Contributions If applicable, describe any matching funds and/or in-kind contributions that you have secured or have requested through other means. Matching funds are those funds contributed to the project from other funding sources. In-kind contributions may include donated labor, materials, or equipment. Please be specific in your description of contributions and use of volunteers (e.g. ACE construction is donating 8 hours of backhoe operation including operator).

The project has significant matching and cost share elements. We can commit at least 1:1 match from the existing RCO grant (Salmon Recovery Funding Board- Targeted Investment Program) for the East Fork Lewis River Reconnection Project. We secured $7.05 million dollars with this award and can leverage at least $246,000 of this award for match.

13. Peer Review of Proposed Project It is encouraged that the Full Proposal be reviewed by an independent resource professional prior to submission for funding. Focus of such review should be on biological value, site selection and proposed methodology. Please note who completed the review and contact information. This does not have to be a third-party review and can come from someone associated with the sponsoring organization. For large wood projects in the mainstems of the Lewis or Muddy River, a peer review is required.

The design and construction phases of this project have been reviewed for technical merit by the Lower Columbia Fish Recovery Board's Technical Advisory Committee, RCO's Salmon Recovery Funding Board, NOAA's ESA Programmatic Team and the Restoration and Community Grant Team, and Ecology's Floodplain by Design Team.

During the development of restoration alternatives and the preliminary designs, a 24-member Technical Oversight Group (TOG), comprised of representatives from resource agencies including WDFW, DNR, Ecology, LCFEG, CLT, NOAA, Cowlitz Tribe, Clark County, Clark Conservation District and others participated. The restoration alternatives involved the development and evaluation of six alternatives, including a No Action alternative. Not all the alternatives were mutually exclusive, allowing for the selection of "a la carte" items that could be grouped together. The restoration alternatives evaluated are listed below:

- Alt. 1 – No action- passive recovery of Ridgefield Pits
- Alt. 2 – Relocate main channel EF Lewis River into pre-avulsion channel (single-thread)
- Alt. 3 – Full Ridgefield Pits re-grade and multi-thread channel network
- Alt. 4 – Side-channel enhancements at upper and lower sites
- Alt. 5 – Mill/Manley Cr. Confluence improvements
- Alt. 6 – Mill/Manley Cr. Channel migration expansion

Each alternative was evaluated with respect to how well it would achieve the project goals and objectives. This resulted in the following ordering (most to least) of how well each alternative achieved this: Alternative 3, Alternative 4, Alternative 6, Alternative 2, Alternative 5 and Alternative 1. A report was produced and was distributed to the TOG members for their input. Based on input on the report, discussions, and multiple follow-up discussions, further design refinement and analysis was performed. This work was primarily to address suggested edits to Alternative 3 and to further explore a single-thread alternative like Alternative 2. Based on this additional analysis, and in consideration of the TOG input and the best approach for accomplishing the project objectives, the following suite of actions were selected to move forward to Preliminary Designs:

- Modified Alternative 3: A full gravel pits re-grade with modifications to reduce the number of channels, reduce grading at the upstream end of the reach where the delta has formed, and to better optimize grading efforts.

The overall project was designed and reviewed by Interfluve, an engineering firm specializing in restoration.

14. Budget
Provide a detailed budget for the project stages (Final design, Permitting, Construction, Signage, Monitoring/Reporting) by work task. Include:
- Personnel costs;
- Labor and estimated hours for each project employee;
- Operating expenses;
- Supplies and materials;
- Mileage;
- Administrative overhead; and
- Insurance expense, in accordance with Appendix A.

If in-kind contributions have been acquired, please note contributions according to project stage within the budget.

Funding from Aquatic Fund will be specifically targeted towards construction of habitat and key habitat features such as wood structures in areas that have historically supported chum salmon. These restoration actions are also expected to benefit other ESA listed salmonids. This funding request addresses a key funding gap within the broader project. Although we have secured funding from several other grants, we still have a deficit between the engineers' estimate and secured funding. This funding request will help us get to the finish line and will target a key need for the project.

A budget was developed for the project (see attached budget spreadsheet). The total request for the project is $246,459. The following is a breakdown of costs associated with the project.

- Construction including mobilization and dewatering- $40,000
- Construction of habitat features- $180,000
- Personnel costs- $16,486
- Administrative overhead- $9,973

15. Photo Documentation
(Per National Marine Fisheries Service's Biological Opinion for Relicensing of the Lewis River Hydroelectric Projects – August 27, 2007):
Identify process or methodology project will include and provide "photo documentation of habitat conditions at the project site before, during and after project completion."
a. "Include general views and close-ups showing details of the project and project area, including pre- and post-construction."
b. "Label each photo with date, time, project name, photographer's name, and documentation of the subject activity."
Please provide a schedule of when photo documentation will be provided to the ACC

We have an extensive array of pre-construction photos, including aerial photographs and drone imagery (available upon request). We will collect photographs at known locations so that we can replicate them. We also will collect drone imagery along an established flight path allowing us to replicate the same photograph orientations.

As part of our monitoring and evaluation for our NOAA Grant we will be collecting photos post-construction. Photos will be provided to the ACC immediately following construction during the first year (October 15, 2025) and second year (October 15, 2026). Photos will also be taken once a year during low flows in August following construction and during high-flow events (defined as the 5-year recurrence interval). These photos can also be submitted to the ACC.

16. Insurance
All qualifying applicants shall comply with PacifiCorp's insurance requirements set forth in Appendix A. The policy limits are deemed sufficient by PacifiCorp for project activities involving significant risk, including placement of large woody debris in navigable waterways, and are presumed to be sufficient for all activities likely to be funded under this Full Proposal Form. Should applicant's insurance program not meet these requirements, bid pricing should include any additional costs applicant would incur to comply with these requirements.

We will comply with PacifiCorp's insurance requirements. As part of the larger project we have satisfactory insurance in place. In 2023 DNR shifted positions and said that the project was not part of the navigable waterways. We will work with DNR to confirm that the project is not part of navigable waterways. We will also confer with Clark County to determine signage that they will require.

APPENDIX

Figure 1. Avulsion pathway through the Ridgefield Pits in 1996 (Norman et al. 1998).

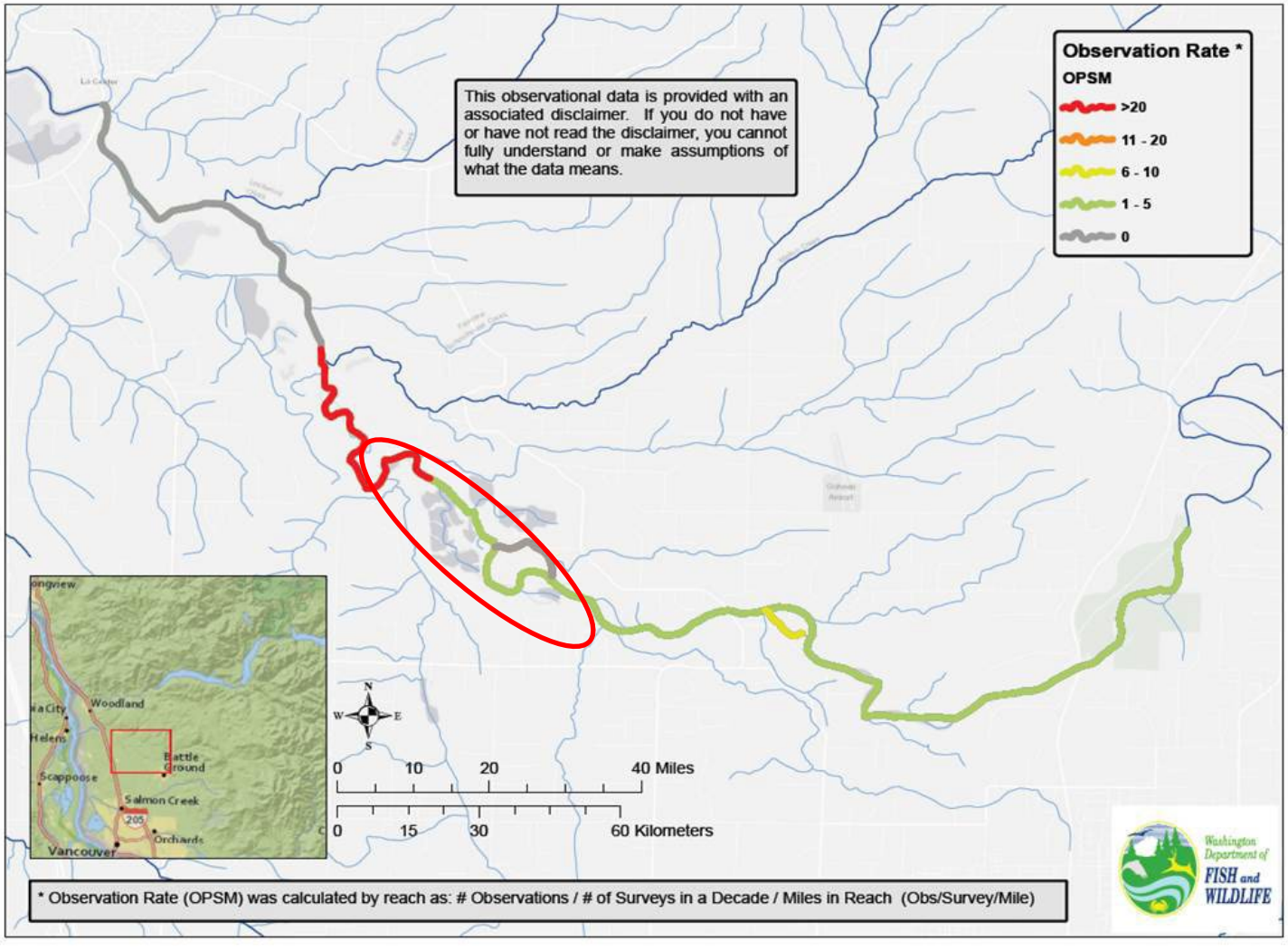

Figure 2. Chum presence within project site (from the East Fork Technical Oversite Group 2018).

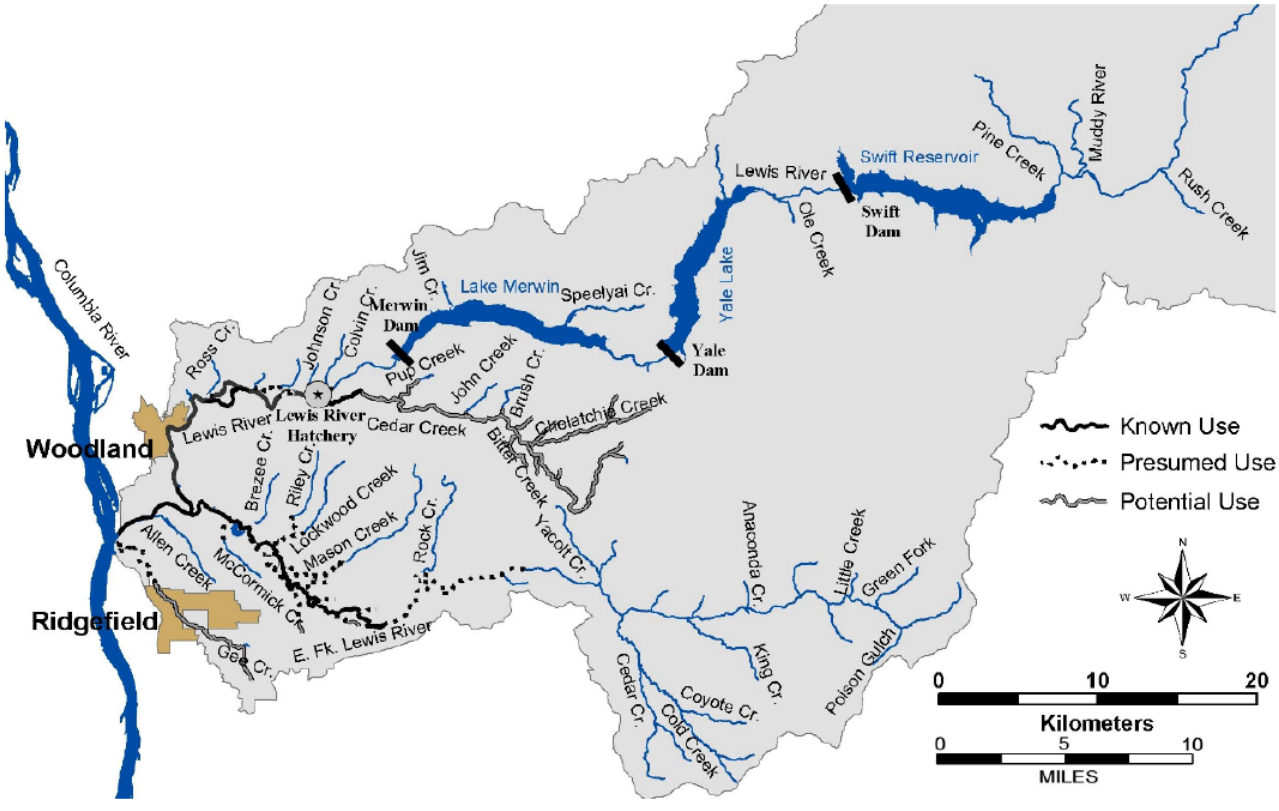

Figure 3. Chum known use within project site (LCFRB 2010).

Landowner Acknowledgement Form

Landowner Information

Name of Landowner:
Landowner Contact Information:

X Mr. ☐ Ms. Title: Manager

First Name: Patrick Last: Lee
Name: Contact Mailing Address:
Contact E-Mail Address:

Property Address or Location: T4N R1E Sections 13, 24 T4NR2E#1

1. (Landowner or Organization) is the legal owner of property described in this grant application.
2. I am aware that the project is being proposed on my property.
3. If the grant is successfully awarded, I will be contacted and asked to engage in negotiations.
4. My signature does not represent authorization of project implementation.

Patrick T. Lee 2-9-21

Landowner Signature Date

Project Sponsor Information

Project Name: Ridgefield Pits Final Design
Project Applicant Contact Information:

☑ Mr. ☐ Ms. Title Principal Ecologist- Lower Columbia Estuary Partnership

First Name: Paul Last Name: Kolp

Mailing Address: 811 SW Naito Parkway #410 Portland, OR 97204

E-Mail Address: pkolp@estuarypartnership.org

Project Name **East Fork Flooplain Reconnnection Project**

Sponsor **Lower Columbia Estuary Partnership**

				OVERALL PROJECT	GRANT REQUEST	MATCH			
				Amount	Amount	Match	Funding not reported	Source (Grant, Cash, Materials, Labor, Volunteers, etc)	Match Type (federal, state, local)
Construction									
Category (choose one)	**Task Description**	**Qty**	**Rate**						
Other	*Stakeholder Coordination , funders, and partners*	1.00	$25,000	$25,000	$ -				
Other	*Procurement*	1.00	193,210	193,210	$ -	$ -	$ -		
Construction supervision	*Engineering/CM Firm, EP Staff Time*	1.00	1,609,643	1,609,643	$ 13,082	$ -	$ -		
Materials	*Construction + Habitat/wood strurtures*	1.00	8,060,000.00	8,060,000.00	$ 180,000	$ 250,000	$ -		
Demolition and site prep	*Prep. Dewatering, Env. Compliance*	1.00	200,000	200,000	$ 20,000	$ -	$ -		
Mobilization	*Mobilization*	1.00	352,034	352,034	$ 20,000	$ -	$ -		
Construction	*Revegatation*	1.00	900,000	900,000	$ -	$ -	$ 10,914,685	Grant	State and Federal
Other	*Staff time for admi*	1.00	3,404	3,404	$ 3,404	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			$ -	$ -	$ -	$ -	$ -		
			STotal	**$ 11,343,291**	**$ 236,486**	**$ 250,000**	**$ 10,914,685**		

Indirect Costs									
	Description	**Approved Rate**	**MTDC**						
	Indirect	15.000%	$ 9,972.95				$ -		
	Indirect					$ -	$ -		
			STotal	$ -	$ 9,973	$ -	$ -		
					Grant Request	**Match**			
			GTOTAL	$ 11,343,291	**$ 246,459**	**$ 250,000**	$ 10,914,685		
					Project Total	**$ 496,459**			
					Project Percentage	**Match Percentage**			
					49.64%	**50.36%**			