Chehalis River Basin Flood Control Zone District
FRE Structure Tasks
July 2023 through June 2025

DRAFT
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FRE Funds

Effort	Assigned Responsibility	Coordinating Agencies	Schedule	Justification	Assumptions
Phase 2 Geotechnical	HDR		7/23 - 6/25	Additional geologic and geotechnical analysis is required to firmly establish foundation excavation and preparation requirements and to decrease design and cost uncertainties. This effort directly supports advancement of the construction schedule and cost estimate which will enable the District to contrast costs with the expected benefits of the project. This effort includes exploratory investigations for the FRE structure and the quarries to confirm their validity to produce the necessary materials to construct the FRE structure as well as support determined whether one or two quarries are needed, which also has affects on project costs and schedule. Further, the investigation incorporates temporary and permanent access road alignment exploration to support obtaining right-of-way and property and to support actions required to construct access roadways in support of future final design efforts. This task further includes the effort to develop and construct access to the Phase 2 geotechnical exploration areas including the permitting and right-of-way easement acquisition necessary to conduct the investigations as well as the costs associated with developing the access.	Work necessary to support FRE Structure Feasibility design analysis and District and OCB decision to initiate permitting and related tasks.
Hydrology, Reservoir Modeling, Hydraulics	HDR, Kleinschmidt		7/23 - 8/24	Initial hydrologic studies were performed 10-years ago. Developing the appropriate level of updated hydrology and hydrologic modeling data for reservoir modeling will enable the District to reaffirm that the project meets its purpose and needs while also allowing for additional analysis of operation scenarios to support adaptive management principles. Updated hydrologic and reservoir modeling will allow for advanced hydraulic modeling of the more complex river conditions at the minimization alignments in order to provide feasibility design of the outlet works including temporary and permanent fish passage structures, sluice gates, spillway and fish collection facility. This effort directly supports reducing design uncertainties and costs associated with the construction of these primary operational components as well as ESA consultation activities. Both the hydrological and hydraulic modeling will support advancement of vegetation management plan, sedimentation analysis and sediment transport modeling which directly effects the District's future O&M costs and is a major factor in determine whether the project will be advanced. Additional sediment transport modeling supports the development of the project's intended mitigation actions and will accommodate refinement of mitigation costs associated with sediment transport and management.	Work necessary to support FRE Structure Feasibility design analysis and District and OCB decision to initiate permitting and related tasks. ESA services and USACE will require more detailed design information in order to determine feasibility and effectiveness of airport levee design measures to avoid impacts to adjacent wetlands. (Likely)
FRE Structure Feasibility Design					
FRE Structure	HDR	Quinault and Chehalis Tribes	11/24 - 6/25	Advancement of the FRE Structure minimization alignment feasibility designs utilizing the new geotechnical, hydrologic and hydraulic information will directly affect the estimated project costs and construction schedule. Current design efforts for the avoidance alignments are conceptual in nature and heavily rely on data collected for the original project alignment and location. A key cost component of the project is preparation of the FRE structure foundation and the volume of roller-compacted concrete required. The volume of concrete required significantly affects the cost of the project and the feasibility of producing the required quantities with local materials from local quarries. Advancing the design is required before the full viability assessment of local quarries can be completed. Because foundation preparation and the quantities of roller-compacted concrete consist of approximately 25% of total project costs, advancing the design will allow for the advancement of project costs, allowing for the OCB and District to conduct a more robust and comprehensive cost vs. benefit analysis. Advancement of the FRE structure design will include seismic analysis required for optimization and improvement to fish passage conduit design, ultimately supporting ESA consultation.	Work necessary to support Section 106 and ESA process and District and OCB decision to initiate permitting and related tasks.
Outlet Works	HDR	WDFW, USFWS, NMFS, Ecology Quinault and Chehalis Tribes	12/23 - 3/25	The Outlet Works include the infrastructure that is key to achieving project operations and fish passage requirements. Current design efforts with the minimization alignments will only conceptually demonstrate that the outlet works are feasible at the new alignment locations. With the updated hydrology as discussed above and new minimization alignment locations, the outlet works design will need advanced hydraulic analysis to advance the structural and operational design to meet project goals. The refinement of the outlet works structural design will advance the quantities of cast-in-place concrete required for construction and also help to determine the viability of local quarries to supply concrete mix materials. Further, sedimentation and sediment transport will be directly affected by the operations of the outlet works. Advancing the outlet works will accommodate greater definition of long-term sedimentation and sediment transport quantities, issues and operational behaviors. This, along with the advancement of the structural design, will further refine project construction costs and schedule as well as operations and maintenance costs allowing for the District and OCB to conduct more robust and comprehensive cost vs. benefits analysis.	
Access Roads	HDR	DNR, Ecology, Quinault and Chehalis Tribes	6/24 - 6/25	The current biennium feasibility effort for permanent or construction access for the project is scoped to be high-level concept design. Further analysis is warranted to advance access road feasibility design to provide tools the District can use to coordinate with land owners to ascertain the full feasibility of the planned access routes. Along with direct infrastructure costs, access routes and roads also effect long-term operations and maintenance costs. There will be costs likely associated with a loss of timber lands that need to be assessed. This effort will be instrumental in refining project construction costs and schedule, defining land right-of-way needs and costs, as well as operations and maintenance costs allowing for the District and OCB to conduct more robust and comprehensive cost vs. benefits analysis.	
Quarries	HDR	Ecology, Quinault and Chehalis Tribes	5/24 - 2/25	Quarry exploration will be a part of the Phase 2 Geotechnical Investigation. Assessing the results of those investigations and determining the volume of available suitable materials will directly support developing feasibility level construction schedules and costs. Feasibility advancement of the FRE Structure design will feed into this analysis by narrowing the quantities of materials required to generate roller-compacted concrete as well as materials for concrete mixes that will be used to construct the outlet works.	
Construction Schedule	HDR		2/25 - 5/25	The feasibility design conducted to support OCB and District decisions will support advancement of the construction schedule. This action will support the revision of the construction cost estimate which is a key decision factor to deciding whether or not to carry this project forward.	
Construction Cost Estimate - AACE Level IV	HDR		3/25 - 6/25	The feasibility design effort in combination with the advancement of the project schedule will decrease construction cost uncertainties and increase accuracies. The current construction cost estimate is concept level inclusive of significant design contingencies. The work to support the District and OCB decision will advance the accuracy and precision of the cost estimate allowing for the OCB and District reassess the project's costs vs. benefits resulting in a decision to halt or carry forward the project.	Work necessary to support the District and OCB decision to initiate permitting and related tasks.
Advance Airport Levee Avoidance Design	HDR	USACE, WDFW, NMFS, Ecology, DNR, Quinault and Chehalis Tribes	7/23 - 6/25	The Draft Environmental Impact Statements (EISs) prepared by Ecology and USACE identified significant permanent impacts to adjacent wetlands from construction of the Airport Levee. The District has identified potential design concepts that show the proposed Airport Levee improvements can be constructed within the existing Airport Levee footprint to avoid wetlands and cultural resource impacts. It has been conveyed to the District that before a final decision on wetland impacts can be made, the District will be required to provide detailed engineering plans. This, along with the advancement of the structural design, will further refine project construction costs and schedule as well as mitigation costs allowing for the District and OCB to conduct more robust and comprehensive cost vs. benefits analysis.	Work necessary to support Section 106 and ESA process and District and OCB decision to initiate permitting and related tasks. ESA services and USACE will require more detailed design information in order to determine feasibility and effectiveness of airport levee design measures to avoid impacts to adjacent wetlands. (Likely)
Advance Mitigation Design for ESA and Cost Refinement	Kleinschmidt Associates	USACE, WDFW, NMFS, Ecology, DNR, Quinault and Chehalis Tribes	7/23 - 6/25	Advance site specific selected aquatic, riparian, and wetland mitigation projects. Dependent upon status landowner agreements individual actions will be advanced to 30% or 60% as appropriate. Deliverables at the 60% stage include drawings, a draft report describing design methods, and Engineer's opinion of probable cost at the 60% project definition level.	Work necessary to support ESA process and District and OCB decision to initiate permitting and related tasks. Anticipate ESA services and USACE will require more site specific information in order to determine feasibility and effectiveness of mitigation plan. (Very Likely)

Field data collection		Kleinschmidt Associates		7/23-10/24	Field data in support of 60% and subsequent design milestones will be collected by the Kleinschmidt team. Collected data are to include photographs and necessary site-specific physical, chemical, and biological data to inform design of aquatic, riparian, and wetland mitigation projects. Coordination with landowners will be required for field data collection, particularly when permanent survey monuments are to be installed. Additional permitting for Section 106 consultation may also be required for field data collection.	Work necessary to support ESA process and District and OCB decision to initiate permitting and related tasks. ESA services and USACE will require more site specific information in order to determine feasibility and effectiveness of mitigation plan. (Very Likely)
EDT Model Development and Post Processing		Kleinschmidt Associates, ICF	USACE, Ecology	7/23 - 6/25	This task will fund the development and post processing of an EDT model for the District to be able to evaluate the efficacy of the District's mitigation plan and to better understand the costs associated with mitigating for the projects impacts. EDT modeling is being chosen because it is the same model being used in the Environmental Impact Statements (EISs) prepared by Ecology and USACE to evaluate the project.	Work necessary to support the District and OCB decision to initiate permitting and related tasks. Work is necessary for the District and OCB to evaluating the mitigation plan using the same tool that is being used in the SEPA/NEPA EISs. (Probably Likely)
Support Landowner Engagement		Kleinschmidt Associates, District/Local Consultant		7/23 - 6/25	Entering into land access agreements with participating landowners associated with the mitigation projects, including responsibility for verbal and written communication with landowners and development of agreements. Engage an independent legal team to prepare written agreements and documents. The Kleinschmidt team will support this effort by supplying mitigation design information, supplying information and details about prospective construction activities, and attending selected meetings (by phone or in person) when mitigation project detail or construction detail is required.	Work necessary to support NEPA/SEPA and ESA process and District and OCB decision to initiate permitting and related tasks. Work necessary for the District and OCB to assess the project's ability to meet mitigation requirements. ESA services and USACE will require this information to assess the District's ability to implement the mitigation plan. (Likely)
Acquire Land or Land Options for Mitigation Sites		Kleinschmidt Associates, HDR District/Local Consultant		7/23 - 6/25	Purchase land or land options where mitigation projects are being advanced. Engage an independent legal team to prepare written agreements and documents. The Kleinschmidt team will support this effort by supplying mitigation design information, supplying information and details about prospective construction activities, and attending selected meetings (by phone or in person) when mitigation project detail or construction detail is required.	Work to support NEPA and ESA process and District and OCB decision to initiate permitting and related tasks. Work will help the District and OCB to assess the project's ability to meet mitigation requirements. ESA services and USACE will require this information to assess the District's ability to implement the mitigation plan. (Potentially Likely)
Supporting the USACE with Initiation of Federal ESA Consultation		Stoel Rives	USACE, NMFS, USFWS	7/23 - 6/25	Legal, regulatory and policy advice and support to District project management and technical consulting team in initiating dialogue and responding to information requests from USACE, the National Marine Fisheries Service, and U.S. Fish and Wildlife Service (“Services”) to initiate and support ongoing consultation, including the team’s development and communication of additional information and details regarding the proposed FRE, mitigation, and other project components. Attend internal strategy meetings and meetings with the federal agencies. Review and draft responsive documents. Provide advice and support to review any ESA biological opinion(s). Review draft opinion(s) and provide regulatory support and assistance in developing comments. Advise District in follow up negotiations and dialogue with USACE and Services regarding revisions to draft opinion(s) and development of additional information to support.	ESA consultation will continue in the next biennium. (Very Likely)
Update Biological Assessment		HDR	USACE, NMFS, USFWS	7/23 - 6/25	Provide update to biological assessment in response to information requests and dialogue to support ongoing ESA consultation.	ESA consultation will continue in the next biennium. The ongoing dialogue and response to comments may result in the need for the District to update the biological assessment. (Likely)
Update Vegetation Management Plan		HDR	USACE, NMFS, USFWS, Ecology, WDFW, DNR	7/23 - 6/25	Provide update to Vegetation Management Plan in response to information requests to support ongoing SEPA/NEPA process.	Ongoing interagency meetings with USACE, Ecology, WDFW, & DNR may result in the need to add additional clarification and commitments to the District's current Vegetation Management Plan. (Likely)
Program Management						
	Staff Engagement	FCZD		7/23-6/25	District staff time for engagement/support.	Current staff engagement/support will continue in the next biennium. (Very Likely)
	Senior Advisors and Project Oversight	GTH		7/23-6/25	Provide advice on regulatory and policy matters. Senior advisory support with intergovernmental communications and tasks. Support core District team to ensure work is consistent with requirements of the overall NEPA & SEPA process.	Current advisory support needs will continue in the next biennium. (Very Likely)
	Agency/Tribes/OCB/Lewis County coordination	Kleinschmidt Associates, HDR, GTH, District Staff	USACE, WDFW, NMFS, Ecology, DNR, Quinault and Chehalis Tribes	7/23 - 6/25	Continued coordination with the District and OCB stakeholders with focus on geotechnical data collection, hydrology, reservoir modeling hydraulics, FRE structure feasibility, implementation of the aquatic, riparian, and wetland mitigation plans and development of mitigation projects. Participation in regular meetings with major stakeholders and ad hoc meetings on an as-needed basis.	Work necessary to keep all participating parties in the overall Chehalis River Basin Strategy well-informed of the latest developments regarding project impacts, costs, and schedule. (Very Likely)
	NEPA & SEPA Coordination	Kleinschmidt Associates, HDR, GTH, District Staff	USACE, WDFW, NMFS, Ecology, DNR	7/23 - 1/24	This task is for coordination between the District consultants and relevant agencies and other consultants in support of the development of final NEPA and SEPA. Activities in this task include participation in meetings and email/phone communications and response to requests for information (RFIs).	Current SEPA & NEPA coordination activities will continue in the next biennium. (Very Likely)
	Project and Contract Management	Dillin		7/23-6/25	This task is required for ongoing project management support through contractor/consultant assistance.	Current level of engagement/support will continue in the next biennium. (Very Likely)
Total: $24,500,000						