CITY OF NEWPORT
TASK ORDER NO. 13

NEWPORT DAM FINAL DESIGN PHASE 1 (2020-2021)

This TASK ORDER NO. 13 to the Engineering Services Agreement dated May 5, 2017, hereinafter called Agreement, between the City of Newport, (CITY), and HDR Engineering, Inc., (ENGINEER).

A. SCOPE OF SERVICES

CITY agrees to utilize the services of ENGINEER and ENGINEER agrees to perform engineering services as defined within the scope of work.

This PROJECT will include the scope of work as identified in the attached Task Order No. 13, NEWPORT DAM FINAL DESIGN PHASE 1 (2020-2021) dated September 29, 2020.

B. CITY'S RESPONSIBILITIES

CITY to provide ENGINEER with the following information:

1. CITY shall assign appropriate reviewers to the project and compile and provide a single consolidated, coordinated, legible, and internally consistent copy of written review comments to Consultant for all draft documents and work products, as appropriate.

2. CITY shall provide timely review of submitted products, as appropriate.

C. COMPENSATION

1. CITY shall pay ENGINEER according to the revised fee schedule set forth in the attached scope of work.

2. Services provided under this Task Order No. 13 shall not exceed $594,368.

D. MISCELLANEOUS

All terms and conditions of the Engineering Services Agreement apply to this Task Order No.13 as though fully set forth therein. In the event of a conflict between previous task orders and the Engineering Services Agreement, the terms of this Task Order No. 13 shall apply.

The parties do mutually agree to all mutual covenants and agreements contained within this Task Order No. 13.

CITY OF NEWPORT:

By: _____

Title: City Manager

Date: 10-14-20

HDR Engineering, Inc.

By: Craig Milliken

Title: Vice President

Date: 10/07/2020

NEWPORT DAM FINAL DESIGN (TO13)
PHASE 1 (2020-2021) - SCOPE OF WORK

September 29, 2020

Contents

Introduction to Phase 1 Scope of Services

This Scope of Services describes the first phase of the activities for pre-design work needed in preparation for final design of the Big Creek Water Supply Dam and Reservoir. The next phase of pre-design work tasks are listed in the scope of services and denoted with 'not included in this scope of work.'

This scope of services includes preparations for the abutment geotechnical investigations, structural model input parameters preparation (i.e., seismic hazard updates), and resolution on the shape of the dam. Further refinement of the basin hydrologic data, estimation of flood hydrology, and fish passage waiver mitigation site field work are included in this scope.

HDR Engineering, Inc. (HDR) previously performed engineering evaluations and concept design for the Big Creek Dams; lower dam (BC1) and upper dam (BC2). The outcome of the engineering evaluations and corrective action study recommended a new roller compacted concrete (RCC) dam downstream of BC2. The new RCC dam would have sufficient storage capacity to replace the current capacity of the two existing reservoirs, restore lost storage due to sediment accumulation in both reservoirs, provide increased future water supplies, and provide storage to reduce the use of the Siletz River intake pump station. The feasibility of the proposed site, an update of the design configuration, initiation of environmental compliance activities, preliminary reservoir operations study, and a cost estimate of suitable accuracy to support funding of the project have been completed during previous phases of the work.

Environmental compliance and permitting activities have been initiated in previous phases (wetland delineation, cultural resources survey, soil investigations, initiation of the permitting agencies involvement with the project including preparation of a fish passage waiver application) of work authorization by the City.

Task 1 Project Management

Objectives

Project management activities include directing and managing project work, tracking project financials, maintaining the project schedule, and managing changes to scope, schedule, and budget. Specific project management activities are described in each subtask. The activities performed under the project management task will cover the duration of this task order as described herein.

1.1 Scope, Schedule, Budget, and Change Maintenance

The activities in this task include maintaining the project scope and validating scope items; developing and maintaining the project schedule; and tracking project budget expenditures, earned and planned value, physical percent complete, and percent spent. Activities under this task include identification of scope and related schedule and budget changes and to work with the project team and the City to proactively and effectively manage these changes.

Progress reports will be included with monthly invoices and provide a summary of work performed with scope, schedule, and budget updates. This task includes subconsultant coordination.

1.2 Develop Project & Quality Management Plan

Within three weeks of Notice to Proceed, the project management plan (PMP) from subsequent phases will be updated. The purpose of the PMP is to provide a single source with relevant project information that can be accessed by project team members. Components of the PMP include project team names and contact information, communications protocols, project scope and schedule, the project's risk management plan and risk register, health and safety information, and the project fee estimate. Additional information includes project administration requirements such as CAD standards, document management, and the project decision log. The PMP will be revised and maintained following scope changes or other changes related to funding sequence and scope adjustments.

1.3 Project Meetings

Project meetings under the project management task include the project kickoff meeting, weekly client/consultant project manager (PM) meetings, and project team meetings. HDR will develop agendas and meeting notes to capture decisions and action items for all meetings except the weekly client/consultant project manager check in meetings.

1.3.1 Internal HDR Project Meetings

- Internal management review meetings as required under HDR's QA/QC and risk management program
- Weekly project meetings (1-hour duration)
- Quarterly in person design meetings with specific design leads (most likely in Denver or Portland; duration of 2 days) – pending COVID19 restrictions

1.3.2 Client Meetings

Up to two meetings/workshops with the City and key design leads to engage with the client and resolve design issues and/or gain needed client input to design development. (most likely in Newport or Portland) – pending COVID19 restrictions

1.3.3 Stakeholder Meetings

Upon request from the City, HDR personnel will assist with stakeholder meetings including the following:

- Attendance at City Council meetings (two City Council Meetings anticipated and will be attended by the PM)

1.3.4 Undefined Meetings and Site Visits

An allowance for unforeseen meetings and site visits will be included (e.g., data logger readings and retrieval, site condition changes).

Assumptions for Task 1

- The project duration is anticipated to be 7 months for this phase.
- The PMP is an internal document that can be shared with the client PM. The PMP is not a deliverable and therefore no client comments will be addressed.
- City review periods of draft TMs and comments will not exceed two weeks

Deliverables for Task 1

- Monthly invoices and progress reports
- Meeting notes for client meetings where decisions were made

Task 2 Pre-Design Configuration Resolution

Objectives

There are several items that need to be resolved before final design can start. This task will provide the basis for the design of a portion of the remaining outstanding items.

2.1 Lower Dam (BC1) Evaluation - (*not included in this scope of work*)

2.2 Selecting Dam Seismic Design Basis (Risk Informed Design) - (*not included in this scope of work*)

2.3 Determine Viable Configuration Options

Upon completion of the preliminary design and the 2019 value engineering workshop, several configuration uncertainties were identified that will be resolved and documented for this task. Specifically, information from additional final design site and construction material characterization activities, approved seismic hazard design criteria, preliminary structural analyses, and high level cost and risk information (Task 2.4) will be evaluated to address the following configuration uncertainties.

- Right abutment and reservoir landslide hazards, rock quality, and treatment requirements
- Adoption of a curved or straight dam axis alignment for the dam

The proposed right abutment of the dam is in an area designated by the state as a potential landslide hazard zone. Field activities were recently performed under Task Order 9 to address this concern including additional geologic mapping and evaluation of the right abutment and reservoir landslide hazards. These evaluations identified that the right abutment of the dam is not part of an old and relatively large landslide complex. However, the northern perimeter of the existing BC2 reservoir appears to be formed by stream erosion along the southern boundary of a large landslide complex.

Under this task, additional analyses and evaluations of the right abutment will be performed to advance the findings from the recent landslide hazard mapping and provide input to the design

of the right abutment of the dam for input to structural modeling. Once appropriately characterized, treatment requirements (i.e., excavation configuration and any thrust block or other abutment shaping needed to create an appropriate abutment surface for the new RCC dam) will be developed at a preliminary design level. This preliminary design will identify additional confirmatory site explorations and characterization needed for final design. In addition, preliminary engineering evaluations and analyses will be performed of the northern reservoir rim landslide complex to assess potential impacts related to future movement of the landslide under normal and earthquake loading conditions. Results of these analyses and evaluations will then be used to identify any additional site characterization and lab testing needed to complete the final designs for the dam and reservoir.

Similarly, there may be benefits to modifying the straight axis of the dam to a curved alignment. Such an alignment provides for enhanced stability of the structure for large earthquake events that may cause the dam to crack at the foundation contact or in the upper portions of the dam. Curving the axis of the dam may also provide an opportunity for additional cross-section optimization. Planned structural analyses for final design will begin under Task 4.1 with a two dimensional (2-D) model. Under the risk informed design criteria, the planned cross-section of the dam will be analyzed to identify the earthquake loading conditions when cracking along the base of the dam is likely to occur. Subsequently, the 2-D model will be modified to consider a range of likely inter-monolith side shear forces that would develop in a curved configuration. The impact of these shear forces will then be summarized in a comparison of estimated monolith deformations. Likewise the impact on the potential for cracking in the upper portion of the dam will using linear elastic principle stress results to assess cracking likelihood.

Using the results of these initial structural modeling results and other factors described in Task 2.4, a straight or curved dam axis alignment will be determined. A one-day workshop is scoped for this decision making process. Once a decision is reached, the structural modeling will proceed to development of a three-dimensional (3-D) model of either the straight or curved dam axis alignment (in a subsequent task order).

2.4 Supporting Information for Options Evaluation & Selection

High-level comparative cost (comparable to the previous estimate in Task Order 4), schedule, and other risk factors will be developed and evaluated for the curved configuration and sub-options developed during Task 2.3. Results of these evaluations (including a screening level dam safety risk assessment – SQRA, as budget allows) will be used to select the preferred configuration to advance into final design. The cost factors will include rough quantity estimates. The results of work from Tasks 2.3 and 2.4 will be summarized in a technical memorandum. The dam axis alignment configuration evaluation will be independently reviewed by Mr. Larry Nuss who will be a subconsultant to the HDR team. Mr. Nuss previously provided structural design review and input to the value engineering evaluations that were completed for the project.

Assumptions for Task 2

- The overall work breakdown structure (WBS) for this evaluation will be based on previously developed cost estimating models and major changes to the previously developed cost WBS are not required for this evaluation.

- Quantities and unit costs for this evaluation are suitable for screening and selecting the preferred configuration for final design. Quantities and unit prices may change as the final design advances beyond the configuration development stage.
- The cost and related information developed for the comparative evaluation will qualitatively consider risk factors. Detailed evaluation of risk factors is not required at this time.

Deliverables for Task 2

- Quantity Estimates technical memorandum (draft and final electronic PDF submittals) outlining the rough quantity estimates for the preferred dam configuration under Task 2.3

Task 3 Data Collection & Preliminary Analysis Supporting Basis of Design

Objectives

The objective of this task is to review landslide hazard, seismic hazard, and preliminary flood hydrology characterizations to provide the basis for future final design. The subtasks below provide a summary of the scope that will be performed and deliverables prepared.

3.1 Geology and Landslide Hazard Evaluation

As previously noted, the region above the proposed dam and including the right abutment of the proposed RCC dam have been mapped by the Oregon Department of Geology and Mineral Industries using LiDAR imagery as potential ancient landslide terrain. Recent geologic mapping shows that the right abutment area for the dam is not part of the ancient landslide but bedrock that with appropriate treatment, would be suitable for the dam. However, the area along the northern rim of the reservoir upstream of the right abutment area is a part of a large and ancient landslide complex. No active landslides adjacent to the reservoir have been identified. The postulated ancient landslide complex upstream of the right abutment along the northern reservoir will need to be properly addressed during future final design phases.

Using the results of the recently completed geologic assessment of the landslide hazard area and the initial engineering analyses of the landslide performed under Task 2.3, the planned site characterization program in the upstream right abutment area, as well as the need for explorations along the northern reservoir rim will be reviewed. Appropriate adaptations to the draft exploration plan developed during TO9 will be made to gain additional subsurface data needed to support future final designs including the landslide hazard evaluation, final engineering analyses, confirmation of the preferred abutment treatment options (Task 2.3), and then finalizing the right abutment excavation and permanent treatment for future final design. HDR will conduct an internal one-day workshop to support completion of this task.

3.2 Seismic Hazard Update

A seismic hazard assessment for the Big Creek dam sites was completed in 2014. Subsequently, preliminary design level structural analyses were completed for an initial configuration of the new Big Creek RCC dam using the information. As the results of the site characterization and structural analyses were emerging, it became apparent that additional

updates to the seismic hazard would be needed with regard to the developing a full Probabilistic Seismic Hazard Analysis (PSHA), to critically review and update the ground motion records from that report (confirm or provide alternative motions that more closely represent the seismic hazards at the Big Creek Dam site), as well as adjustment of the ground motion records to the actual bedrock conditions.

Ground motion parameters for the Big Creek site developed in 2014 were based on a National Earthquake Hazards Reduction Program site classification having an average shear wave velocity in the first 30 meters (about 100 feet) below the base of the dam of $V_{S,30}$ = 760 meters/second (about 2,500 feet/second). In 2014 site characterization activities had not been performed for the RCC site. Subsequent site characterization in 2017 indicated that the actual $V_{S,30}$ for the new RCC site is about 1,220 meters/second (4,000 feet/second). The use of this updated site information will result in a reduction of the peak ground acceleration and spectral accelerations for a given earthquake return period.

Under this task, the seismic hazard assessment will be updated to provide the following information for future final design:

- Develop PSHA – Estimate hazard and provide UHS (Uniform Hazard Spectrum, both horizontal and vertical) at selected return periods (500-, 1,000-, 2,500-, 5,000-, and 10,000-year). Deaggregate results at each selected return period to identify the principal seismic sources responsible for the hazard at the peak ground acceleration and other selected spectral periods for the dam site.
- Perform deterministic hazard assessment.
- Calculate the UHS and deterministic spectra using the undated site response spectrum based on the actual shear wave velocity measured in the upper 30 meters (approx. 100 feet) of the bedrock below the dam in the ground motion models.
- Develop updated, spectrally matched 3-component short- and long- ground motion time histories associated with local crustal and Cascadia Subduction Zone fault ruptures.

A revised technical memorandum will be prepared summarizing the updated seismic hazards specifically developed for the new RCC dam site.

3.3 Construction Materials - (*not included in this scope of work*)

3.3.1 Site & Existing Reservoir Material Evaluation - (*not included in this scope of work*)

3.3.2 Offsite Aggregate Material Evaluation - (*not included in this scope of work*)

3.4 Hydrology

3.4.1 Refine Basin Hydrology

For final design of the dam it is essential to develop basin hydrologic data, estimate flood hydrology, water supply storage requirements, and sediment yield potential. The previous water storage and operations study conducted during preliminary design provided an estimated range of storage volume requirements to supply the necessary demand from the City over the life of the project. This study included estimated variation in basin hydrology arising from climate

change effects, estimated variation and increase in water demand, and an analysis of the potential for reducing interbasin supplementation from the existing Siletz River pump station.

The information and data determined as part of the proposed activities will be used for 1) planning construction water supply and diversion requirements, 2) spillway and outlet works design, and 3) providing the primary basis for refining the reservoir storage requirement to accommodate the loss of BC1, historical and potential sediment accumulation, and future water demands. Flood hydrology will be a critical dam safety consideration and include refining the associated spillway crest elevation, freeboard requirement, and refinement of dam crest elevation and configuration.

The Newport, Oregon area has poor coverage of weather, precipitation, and hydrologic data collection stations. This paucity of baseline data must be rectified prior to final design. There is currently only one local meteorological station within a 25-mile radius of Newport, and no local tributary drainage stream gages. The rainfall-runoff relationship in the Big Creek watershed above the dam site is poorly understood, and there is no data to estimate the local hydrology and stream runoff characteristics. Hence, a limited program of hydrologic data collection has been proposed herein to provide this baseline data, and, a potential plan for future monitoring of key hydrologic parameters that will be important for continued successful operation of the project. The following activities are proposed as part of this scope and will be summarized in a flood hydrology evaluation technical memorandum:

- Install stream gage(s) and rainfall tipping bucket:
  - Up to two stream gages and one precipitation gage will be installed to collect baseline data for the Big Creek watershed. Stream gages are proposed at the head of the future reservoir on Blattner Creek and on Big Creek. A tipping bucket-type precipitation gage will be located somewhere at the head of BC2 or at the water treatment plant, possibly accompanied by additional meteorological data collection equipment, such as atmospheric pressure, solar radiation, dew point, and air temperature.
- Collect data for at least one winter season and one summer season:
  - Inspect for damage, maintain, and download data from each station up to two times. Conduct manual stream ratings for up to three varied flow conditions for the proposed stream gaging stations installed to establish stream gage rating curves. These should include a moderate to base flow during winter, and a moderate to high flood flow, if the streams can be safely gaged using standard stream gaging equipment.
- Determine appropriate watershed hydrologic model to be applied and confirm that it complies with the State of Oregon's requirements:
  - Develop a preliminary rainfall-runoff model to determine the Big Creek watershed hydrology
  - Setup model for Big Creek Basin and include estimate of uncertainties in the model relationships. Baseline gage data collected is expected to support calibration of hydrologic model.
- Compare analogous basins:

- Big Creek is an ungaged basin. Develop preliminary hydrologic statistics for Big Creek Dam site using direct or proportional comparison and regression comparisons among selected similar sites use U.S. Geological Survey StreamStats results by comparing them with any empirical data/statistics from analogous basins, if available.
- Use data observations collected as part of stream gaging task to update calibration of hydrologic model parameters.
- Required hydrologic information covers the full range of instantaneous flows from high winter flood flows to low flow estimates during late summer. Specific requirements are in Tasks 0, 3.4.4, and 3.4.5.
- Research and locate available existing data: RAWS, OWRD, USFS, ODF, ODFW, County, etc.

- Determine flood frequency and flow duration curves:
  - Using the hydrologic model prepared and analogous basin information, develop preliminary annual frequency, volume frequency, and flow-duration relationships for the Big Creek Dam site. Confidence limits should be estimated for hydrologic statistical results and consider field observations using gage data collected as part of the stream gaging task, if high flows of sufficient magnitude have occurred during the study period to inform the model parameter adjustment.
  - Construction-related inflow flood hydrographs ranging from 0.50 Average Exceedance Probability (AEP) to ~0.002 AEP will be developed using a balanced hydrograph approach and/or analogous basin information. These inflow flood hydrographs should include a minimum of the following events:
    - AEP = 0.1 (10-year recurrence interval)
    - AEP = 0.05 (20-year recurrence interval)
    - AEP = 0.02 (50-year recurrence interval)
  - Flood hydrographs for up to three specific recurrence interval events, including the AEP = 0.0001 (or probable maximum flood event-equivalent) will be estimated, given appropriate confidence limits as supported by field observations, analogous basin data, or other appropriate comparative data.

3.4.2 Sediment Transport & Sedimentation Evaluation - (*not included in this scope of work*)

3.4.3 Perform Flood Routing Analyses

To develop the spillway and outlet works design, it will be necessary to determine the range of flood events that must be passed through the project. The following tasks are expected to be required as part of this analysis:

- Route inflow flood events of AEP=0.1 through 0.0001 through up to two spillway design configurations using the model developed in previous tasks of this scope.

3.4.4 Develop Minimum In-stream Flow Values - (*not included in this scope of work*)

3.4.5 Refine Water Storage Model (based on existing model) - (*not included in this scope of work*)

Assumptions for Task 3

- The data collected is not a formal deliverable, however it will be provided to the City upon request.
- Permits, access permission and clearances, and access support for the borrowed site material investigation as well as the installation of the weather station and stream gages will be provided by the City.
- Geotechnical explorations are not part of this scope and will be conducted in the next phase of the project.

Deliverables for Task 3

- Updated Seismic Hazard technical memorandum (draft electronic PDF submittal)
- Final Site Exploration and Laboratory Testing Plan (electronic PDF submittal)
- Flood Hydrology Preliminary Evaluation Report (Draft)

Task 4 Basis of Design

4.1 2-D Structural Model Development and Evaluations

Objectives

Work under this task will be used to support configuration-related evaluations and decisions for the dam as described in Task 2.3. Risk informed design criteria and updated seismic hazard information will be used for a series of initial structural analyses of the planned cross-section of the dam. A 2D model of the maximum dam cross-section will be developed and analyzed to identify earthquake loading conditions when cracking along the base of the dam is likely to occur. The threshold loading condition when potential cracking in the upper portion of the dam also will be identified.

Subsequently, the 2-D model will be modified to consider a range of likely inter-monolith side shear forces that would develop if the dam was constructed in an upstream curved configuration, cracking developed along the base and in the upper portions of the dam, and the dam begins to deform to engage arch action with load transfer to the abutments. The impact of these shear forces will then be summarized in a comparison of estimated monolith deformations and performance. The impact of a curved configuration on the potential for cracking in the upper portion of the dam will also be qualitatively assessed. Curving the section alignment may not only improve dam performance during large earthquakes, but may also offer the opportunity for further section optimization.

The specific scope to be performed under this subtask includes the following:

- Create and verify the performance of a 2-D structural model (LSDYNA or equivalent) under static and seismic loading conditions.
- Develop study case matrix (2-D without and with inter-monolith shear forces)
- Run 2-D model and analyze outcome for three return periods (up to 20 study cases as can be achieved within the budget for this task)

Assumptions for Task 4

- Thermal analyses to establish initial stresses in the dam will not be required to assess the configuration requirements for the dam.
- Reasonable RCC material properties (intact tensile, shear and compressive strength along with peak and degraded strengths along crack surfaces that may develop under large earthquakes) will be assumed. Later analyses will be based on strength requirements identified from these initial structural modeling results and actual mix design testing results.
- A risk informed design is anticipated to require a linear (no damage) response of the dam for loads ranging from the 2,500- to 10,000-year event. These initial structural analyses will be used to verify or adjust the risk informed design criteria for the dam.
- Given the level of seismic hazard associated with the dam site, additional final design level 3D structural model development, calibration, and analyses (including thermal analyses) will be required to finalize the design of the dam's cross-section. These analyses will be performed under subsequent task orders.

Deliverables for Task 4

- Structural 2-D Modeling technical memorandum summarizing the 2-D configuration resolution structural model including input for semi-quantitative risk screening of straight verses curved dam configuration.

Task 5 Environmental Permitting – Fish Passage Waiver Mitigation Site Extend

Objectives

HDR will physically locate the upper extents of physical habitat for native migratory fish (steelhead, Coho, and cutthroat trout). This information is needed to support the fish passage waiver process and is consistent with ODFW's request provided during the September 2019 coordination meeting. The physical limits will be completed for streams upstream of the proposed new Big Creek Dam. The upstream limit will be noted with a handheld global positioning system (GPS) unit. HDR will revise its previously prepared memorandum relating to fish passage presence and distribution to include field notes and revised calculations.

Assumptions for Task 5

- Completion of this task is dependent on site access and site conditions. Task includes five field days for two staff to inventory the upper reaches. HDR will notify the City if conditions prevent some tributaries from being inventoried during the allotted duration for field work.
- City will notify/secure property access; use of logging roads is requested.
- City will provide access to rowboat, if needed.

Deliverables for Task 5

- Revised Fish Passage Presence and Distribution technical memorandum (draft and final electronic PDF submittals)

City of Newport,
Big Creek Dam Final Design TO13

PHASE 1 (2020-2021)

September 29, 2020

	Task Description	Principal In Charge	Engineer III	Technical Advisor II	Engineer V	Equipment	Travel	Misc. Expenses (as a % of Labor)	Total Expenses	HDR Fee	Larry Nuss	Seismic Hazard Specialist	Subconsultant Total	Total Fee (includes sub-consultant mark-up and escalation)
	Billable Rates	$295.20	$211.16	$196.65	$274.10						$ 1	$ 1		
Task 001	PROJECT MANAGEMENT & MEETINGS													
1.1	Scope, Schedule and Budget Maintenance		50					$ 163	$ 533	$ 16,851			$ -	$ 17,055
1.2	Develop/Maintain Project and Quality Management Plan		10					$ 21	$ 68	$ 2,170			$ -	$ 2,196
1.3	Project Meetings (based on 7 months project duration)							$ -	$ -	$ -			$ -	$ -
1.3.1	Internal HDR Project Meetings	15	50	38	3		$ 16,000	$ 718	$ 17,736	$ 89,537			$ -	$ 90,434
1.3.2	Client Meetings		24	12	1		$ 1,500	$ 287	$ 2,231	$ 30,968			$ -	$ 31,327
1.3.3	Stakeholder Meetings (City Council, Legislator, Funding)		20	2			$ 500	$ 50	$ 632	$ 5,646			$ -	$ 5,709
1.3.4	Unanticipated Meetings and Site Visits		24		2		$ 1,000	$ 110	$ 1,280	$ 12,305			$ -	$ 12,443
1.4	Project Closeout		10					$ 42	$ 138	$ 4,318			$ -	$ 4,370
	Sub-total	15	188	52	6	-	$ 19,000	$ 1,392	$ 22,608	$ 161,795	0	0	$ -	$ 163,535
Task 002	PRE-DESIGN CONFIGURATION RESOLUTION													
2.1	Lower Dam (BC1) Evaluation - *(not included in this scope of work)*							$ -	$ -	$ -			$ -	$ -
2.2	Selecting Dam Seismic Design Basis (risk informed design) - *(not included in this scope of work)*							$ -	$ -	$ -			$ -	$ -
2.3	Determine Viable Configuration Options		10	24	1			$ 289	$ 651	$ 29,524			$ -	$ 29,884
2.4	Options Evaluation & Selection		6	6	1			$ 284	$ 765	$ 29,153			$ -	$ 29,508
	QC Hours Only			4				$ 37	$ 89	$ 3,824	3,000		$ 3,000	$ 7,021
	Sub-total	0	16	34	1	-	$ -	$ 610	$ 1,505	$ 62,501	3,000	0	$ 3,000	$ 66,414
Task 003	DATA COLLECTION & PRELIMINARY ANALYSIS SUPPORTING BASIS OF DESIGN													
3.1	Geology and Landslide Evaluation		12	16			$ 2,000	$ 478	$ 3,255	$ 51,071			$ -	$ 51,669
3.2	Seismic Hazard Update		2	8				$ 219	$ 574	$ 22,433		70,000	$ 70,000	$ 96,206
3.3	Construction Materials - *(not included in this scope of work)*							$ -	$ -	$ -			$ -	$ -
3.3.1	*Site Material & Existing Reservoir Material Evaluation - (not included in this scope of work)*							$ -	$ -	$ -			$ -	$ -
3.3.2	*Offsite Aggregate Material Evaluation - (not included in this scope of work)*							$ -	$ -	$ -			$ -	$ -
3.4	Hydrology							$ -	$ -	$ -			$ -	$ -
3.4.1	Refine Basin Hydrology		40		4	3,000	$ 2,000	$ 422	$ 9,384	$ 51,573			$ -	$ 52,100
3.4.2	Sediment Transport & Sedimentation Evaluation - *(not included in this scope of work)*							$ -	$ -	$ -			$ -	$ -
3.4.3	Perform Flood Routing Analyses							$ 81	$ 259	$ 8,360			$ -	$ 8,461
3.4.4	Develop Minimum in-stream Flow Values - *(not included in this scope of work)*							$ -	$ -	$ -			$ -	$ -
3.4.5	Refine Water Storage and Operations Model - *(not included in this scope of work)*							$ -	$ -	$ -			$ -	$ -
	QC Hours Only		2	10	1			$ 151	$ 358	$ 15,454			$ -	$ 15,643
	Sub-total	0	56	34	5	3,000	$ 4,000	$ 1,351	$ 13,830	$ 148,892	0	70,000	$ 70,000	$ 224,080
Task 004	BASIS OF DESIGN													
4.1	2-D Structural Model Development and Evaluations			50		6,000		$ 1,007	$ 11,042	$ 111,717			$ -	$ 112,976
	QC Hours Only							$ -	$ -	$ -	3,500		$ 3,500	$ 3,675
								$ -	$ -	$ -			$ -	$ -
	Sub-total	0	0	50	5	6,000	$ -	$ 1,007	$ 11,042	$ 111,717	3,500	0	$ 3,500	$ 116,651
Task 005	Environ Permitting - Fish Passage Waiver Mitigation Site													
5.1	Locate the Upper Extent of Physical Habitat						$ 2,000	$ 186	$ 2,667	$ 21,291			$ -	$ 21,524
	QC Hours Only							$ 21	$ 54	$ 2,139			$ -	$ 2,165
	Sub-total	0	0	0	0	-	$ 2,000	$ 207	$ 2,721	$ 23,430	0	0	$ -	$ 23,689
	Hours	15	262	170	14						6,500	70,000		
	Fee	$4,428	$54,899	$47,251	$3,900	6,000	$ 25,000	$ 4,566	$ 51,706	$ 508,336	$6,500	$70,000	$ 76,500	
	Escalation												$ 80,325	
	Sub-consultant Budget w/ Mark-up													
	Total Non-Contingency													584,368

AUTHORIZATION FOR AGREEMENTS, MOUs, OR OTHER DOCUMENTS OBLIGATING THE CITY

All contracts, agreements, grant agreements, memoranda of understanding, or any document obligating the city (with the exception of purchase orders), requires the completion of this form. The City Manager will sign these documents after all other required information and signatures are obtained.

Document: HDR Engineering Task Order #13 - Newport Dam Final Design Phase 1
Date: 10/9/20

Statement of Purpose: Task Order for designing Newport Dam.

Department Head Signature: _____

Remarks, if any: _____

City Attorney Review and Signature: _____ Date: _____

Other Signatures as Requested by the City Attorney: _____
Name/Position

_____ Date: _____
Signature

Budget Confirmed: Yes ☐ No ☐ N/A ☐

Certificate of Insurance Attached: Yes ☐ No ☐ N/A ☐

City Council Approval Needed: Yes X No ☐ Date: 10/5/2020

After all the above requested information is complete and signatures obtained, return this form, along with the original document to the City Manager for signature. No documents should be executed prior to the City Manager's approval as evidenced by signature of this document.

City Manager Signature: _____ Date: 10-14-20

Once all signatures and certificates of insurance have been obtained, return this document, along with the original, fully-executed agreement, MOU, or other document to the City Recorder. A copy of grant agreement and all project funding documents, must be forwarded to the Finance Department for tracking and audit purposes.

City Recorder Signature: _____ Date: 10/14/2020

Date posted on website: 10/21/20