Council Meeting Date: June 4, 2018 **Agenda Item:** 7(c)

CITY COUNCIL AGENDA ITEM

CITY OF SHORELINE, WASHINGTON

AGENDA TITLE:	Authorizing the City Manager to Execute a Contract with Herrera Environmental Consultants, Inc., in the Amount of $722,347 for Phase 2 of the Hidden Lake Dam Removal Project
DEPARTMENT:	Public Works
PRESENTED BY:	Tricia Juhnke, City Engineer
ACTION:	____ Ordinance ____ Resolution __X__ Motion ____ Discussion ____ Public Hearing

PROBLEM/ISSUE STATEMENT:

In February 2018, Phase 1 Pre-Design was completed for the Hidden Lake Dam Removal Project. With Phase 1 completed, the project is ready to move ahead into Phase 2 for design and permitting. A new consulting contract (Contract #8961) is required for Phase 2. Scope of work for this contract includes engineering design, permitting, and other support services to remove the earthen dam at Hidden Lake, replace the Boeing Creek culverts crossing NW Innis Arden Way, and restore the Boeing Creek stream channel throughout the existing lake, dam, and culvert area. Project design will include some park amenities, including trail relocation, an observation platform, and interpretive signage. Tonight, staff is requesting Council authorization to award this contract to Herrera Environmental Consultants, Inc.

RESOURCE/FINANCIAL IMPACT:

The total contract amount for Phase 2 of his project is $722,347, with work anticipated to take two to three years. The adopted 2018-2023 CIP includes a Surface Water Utility Capital Fund budget of approximately $531,528 for engineering, environmental, and other consultant services for the Hidden Lake Dam Removal project, distributed throughout 2018, 2019, and 2020.

Sufficient revenues are available in the Surface Water Utility fund. The contract amount exceeds the current adopted budget by $190,819. Additional Surface Water Utility fund balance will be allocated to cover the difference as part of the 2019-2024 Capital Improvement Plan.

RECOMMENDATION

Staff recommends that Council move to authorize the City Manager to execute an agreement (Contract #8961) with Herrera Environmental Consultants, Inc., in the amount of $722,347 to provide engineering, environmental, and other consultant services for the Hidden Lake Dam Removal project.

Approved By: City Manager ***DT*** City Attorney ***MK***

BACKGROUND

Hidden Lake is a man-made lake located east of the intersection of NW Innis Arden Way and 10th Avenue NW, partially within Shoreview Park. The lake originated in the early 20th Century when Boeing Creek was dammed to create a fishing pond and small hatchery near William Boeing's estate. The original dam failed and Hidden Lake was completely sediment-filled by 1970, and overgrown with mature vegetation by 1995. King County constructed the present dam and re-established Hidden Lake in 1996 as an environmental enhancement in relation to impacts of the West Point Sewage Treatment Plant expansion. Re-establishing the lake effectively created a stormwater management facility by constructing a maintainable sediment trap in the upstream end of the lake. Ownership of Hidden Lake is shared between the City of Shoreline (as part of Shoreview Park), four private property owners to the north and west, and a small portion of the west shore of the lake on property owned by the King County Wastewater Treatment Division.

The existing lake configuration traps sediment that would otherwise be carried downstream to replenish sediment-starved downstream reaches of Boeing Creek and near-shore habitat within the Puget Sound at Innis Arden Beach. Sediment deposition within the lake occurs at a high rate and, as a result, the City's Surface Water Utility had been required to remove large volumes of sediment to maintain the lake as an open water feature. From 2002 to 2013, the Surface Water Utility spent over $600,000 to implement seven separate dredging projects which removed a total of nearly 13,000 cubic yards of material. The actual volume of removed material was about six times greater than the deposition volumes estimated by King County in developing the lake re-establishment design in the mid-1990s.

On September 8, 2014, the City Council discussed this issue as presented in the Hidden Lake Management Plan Feasibility Study and authorized staff to cease dredging the lake and begin a phased approach to remove Hidden Lake Dam and re-establish Boeing Creek at Hidden Lake. This decision followed the Hidden Lake Management Plan Feasibility Study and a July 24, 2014 recommendation from the Parks, Recreation and Cultural Services (PRCS)/Tree Board. No sediment removal has occurred since the summer of 2013. The staff report for the September 8, 2014 City Council discussion, which includes the Hidden Lake Management Plan Feasibility Study, can be found at the following link:
http://cosweb.ci.shoreline.wa.us/uploads/attachments/cck/council/staffreports/2014/staffreport090814-8a.pdf.

On May 23, 2016, the City Council discussed the results of the Hidden Lake Dam Removal alternatives analysis and authorized staff to further develop a preferred alternative to maximize restoration efforts along Boeing Creek in addition to Hidden Lake-area dam removal and NW Innis Arden Way culvert replacement. The staff report for the May 23, 2016 City Council discussion, which includes the Hidden Lake Design Alternatives Analysis Report, can be found at the following link:
http://cosweb.ci.shoreline.wa.us/uploads/attachments/cck/council/staffreports/2016/staffreport052316-8a.pdf

On October 2, 2017, staff updated the City Council on continued project pre-design efforts following selection of the preferred alternative. Update topics included implementing Boeing Creek streamflow gaging and Hidden Lake sedimentation monitoring programs, completing a Boeing Creek-Puget Sound nearshore habitat gains analysis and follow-up with WRIA 8, and pursuing grants – with a successful application to secure $300,000 from the King County Flood Control District for design of Hidden Lake dam removal and NW Innis Arden Way culvert replacement.

Based on the conclusions of a Technical Memorandum for Concept Design Evaluation of Fish Passage Improvements in Lower Boeing Creek, staff recommended discontinuing development of Boeing Creek restoration concepts downstream of NW Innis Arden Way. The staff report for the October 2, 2017 City Council discussion, which includes the Concept Design Evaluation of Fish Passage Improvements in Lower Boeing Creek Technical Memo, can be found at the following link: http://cosweb.ci.shoreline.wa.us/uploads/attachments/cck/council/staffreports/2017/staffreport100217-8b.pdf

In February 2018, Herrera completed the Technical Memorandum for Hidden Lake Dam Removal and NW Innis Arden Way Culvert Replacement Concept Design. This memorandum presents the preliminary design concepts developed in Phase 1 Pre-Design efforts.

With Phase 1 completed, the project is ready to move ahead into Phase 2 for design and permitting. A new consulting contract is required for Phase 2. Scope of work for this contract includes engineering design, permitting, and other support services to remove the earthen dam at Hidden Lake, replace the Boeing Creek culverts crossing NW Innis Arden Way, and restore the Boeing Creek stream channel throughout the existing lake, dam, and culvert area. Project design will include some park amenities, including trail relocation, an observation platform, and interpretive signage. Phase 2 work is anticipated to take two to three years due to requirements and timelines for environmental permitting. Phase 3 of the project will be for project construction, which is currently scheduled for 2020.

ALTERNATIVE ANALYSIS

On February 7, 2018, the City issued a Request for Qualifications (RFQ) for Phase 2 of the Hidden Lake Dam Removal project. A Statement of Qualification (SOQs) was received from one consultant team: Herrera Environmental Consultants, Inc.

The project manager reviewed the SOQ and selected Herrera Environmental Consultants, Inc., as highly qualified for this project. (Herrera had just completed Phase 1 of the project.)

There are two primary alternatives regarding the award of this contract:

1. Award the contract to the selected consultant (recommended).
2. Do not award the contract.

While awarding the contract allows the project to move forward, conversely, not awarding the contract would stop it. Given that the project will address a high priority potential flooding hazard which will only increase over time as Hidden Lake fills with sediment, this alternative is not recommended.

The Phase 2 contract amount exceeds the budget for this project. The budget estimates did not adequately anticipate the total amount of work necessary which became apparent during detailed contract scoping. Staff has negotiated the scope and fees with Herrera and concurs the work and associated costs are necessary to proceed with design to construction as conceived during the preliminary design phase. Additional costs can be covered by Surface Water Utility Fund balance.

Project design activities will begin once the consultant is under contract, currently expected no later than July 1, 2018. The proposed scope of work, budget, and schedule are provided as Attachment A.

COUNCIL GOAL ADDRESSED

This project addresses Council Goal #2, Improve Shoreline's utility, transportation, and environmental infrastructure.

RESOURCE/FINANCIAL IMPACT

Total contract amount is $722,347, with work anticipated to take two to three years. The adopted 2018-2023 CIP includes a Surface Water Utility Capital Fund budget of approximately $531,528 for engineering, environmental, and other consultant services for the Hidden Lake Dam Removal project, distributed throughout 2018, 2019, and 2020.

Sufficient revenues are available in the Surface Water Utility fund. The contract amount exceeds the current adopted budget by $190,819. Additional Surface Water Utility fund balance will can be allocated to the Hidden Lake Dam Removal project as part of the 2019-2024 Capital Improvement Plan as follows (by year):

Project Administration Expenditures	**Year**			**3-Year Total**
	2018	**2019**	**2020**	
Original Budget	$267,800	$275,834	$55,606	$599,240
Proposed New Phase 2 Budget	$378,030	$315,040	$96,989	$790,059
Estimated Increase Needed for Phase 2 Contract #8961	$110,230	$39,206	$41,383	$190,819

Below is a breakdown of Phase 2 (Design) funding for the Hidden Lake Dam Removal project:

EXPENDITURES	
Phase 2: Design and Permitting (2018-2020 Estimated):	
Staff and other Direct Expenses	$67,713
Engineering Consultant, Herrera	$722,347
Total Project Administration Costs	$790,059

REVENUE	
Surface Water Capital Fund	$490,059[1]
King County Flood Control District Flood Reduction Grant	$300,000
Total Revenue	$790,059

Construction costs are not included above. Estimated construction costs and revenues will be updated as design progresses.

RECOMMENDATION

Staff recommends that Council move to authorize the City Manager to execute an agreement (Contract #8961) with Herrera Environmental Consultants, Inc., in the amount of $722,347 to provide engineering, environmental, and other consultant services for the Hidden Lake Dam Removal project.

ATTACHMENTS

Attachment A - Herrera Environmental Consultants - Hidden Lake Dam Removal Phase 2 (Design and Permitting) Scope of Work, Budget, and Schedule

[1] Assumes approval of $190,819 in project budget increase distributed over 2018, 2019, and 2020 as listed in table above.

SCOPE OF WORK

HIDDEN LAKE DAM REMOVAL PROJECT FINAL DESIGN AND PERMITTING

The City of Shoreline (City) plans to remove an existing dam impounding Boeing Creek at Hidden Lake on the western edge of Shoreview Park, restore a free-flowing stream through the lake area, and replace the existing Boeing Creek culverts beneath NW Innis Arden Way, immediately downstream of the dam site, with a wider culvert. Dam removal is the first priority and currently scheduled for construction in 2020, whereas schedule and funding for culvert replacement are currently unknown. This scope of work is structured to account for and resolve such uncertainties as the design is developed. Herrera Environmental Consultants (Herrera) will lead a team of firms in assisting the City with final design, permitting, and related tasks for the project. This scope of work describes the activities, assumptions, and deliverables associated with the following tasks that the Herrera team will perform:

- Task 1 - Geotechnical Analysis
- Task 2 - Analyze and Select Preferred Culvert Replacement Alternative
- Task 3 – Stakeholder Outreach and Coordination
- Task 4 – Streamflow Gaging
- Task 5 - Supplemental Survey Allowance
- Task 6 – Hydraulic Modeling
- Task 7 – Preliminary Design for Dam Removal and Stream Restoration
- Task 8 - Preliminary Design for Culvert Replacement
- Task 9 – Grant Funding Support Allowance
- Task 10 – Environmental Permits
- Task 11 - Final Design for Dam Removal and Stream Restoration
- Task 12 - Final Design for Culvert Replacement
- Task 13 – Trail Improvements
- Task 14 - Project Management
- Task 15 – Management Reserve

Herrera will lead and coordinate the work of all tasks, with subconsultants serving in the following roles: Carlstad Consulting – public and stakeholder outreach and grant funding advisory support; HWA GeoSciences – geotechnical investigations and analysis; Alta Planning + Design (Alta) for trail design; Pacific Geomatic Services (PGS) – survey and base mapping; Jacobs – culvert structure, roadway improvements, and traffic control design; and Cultural Resource Consultants – cultural resources assessment to support project permitting. QA/QC review work by the team is incorporated in each task as applicable, and budgeted accordingly.

Task 1. Geotechnical Analysis

Task 1A. Supplemental Geotechnical Explorations and Analysis

HWA GeoSciences (HWA) will augment findings from prior site explorations by overseeing additional geotechnical borings on the slope south of NW Innis Arden Way to understand subsurface conditions along the entire length of the replacement culvert and adjacent areas that will need to be excavated. A

focus of the additional analysis will be on the observed depth to hard glaciolacustrine materials. Specific elements of this work include:

- Site reconnaissance and marking locates for borings
- Coordination for site explorations with the drilling subcontractor, Herrera, and City
- Conduct field explorations on roadway embankment along proposed culvert alignment
- Prepare summary logs and assign lab testing
- Update geologic profiles
- Review supplemental exploration data and evaluate suitability of shored and open excavations for construction of culvert under Innis Arden Way
- Provide recommendations for allowable slope angles and slope heights for maintaining stable slopes along the stream channel
- Provide estimated bearing capacities for materials encountered near the base of the new culvert
- Provide estimates of vertical load applied to buried culvert
- Provide estimates of lateral earth pressures for permanent walls

Deliverables:

- Draft geotechnical analysis memorandum – Adobe PDF electronic file format

Task 1B. Geotechnical Support Services for Preliminary Design

HWA will provide geotechnical support to the design team as needed during preliminary design development (see Tasks 2, 7 and 8 for details of that development work), including but not limited to:

- Provide recommendations for protection against erosion at the toe of slopes
- Provide input for locations and extents of walls needed for slope stability
- Provide input for support of utilities during construction
- Provide input to outline of Special Provisions that will be needed in the construction documents

Deliverables:

- Comments on draft design plans and special provisions outlines
- Attendance at up to two design team meetings

Task 1C. Geotechnical Support Services for Environmental Critical Areas Assessment

HWA will provide expert support for the geologic hazard assessment component of the critical areas report prepared in Task 10A.

Deliverables:

- Complete insert (text and graphics) for geologic hazard assessment component of the draft Critical Areas report
- Revisions to draft Critical Areas report if there are comments on the draft geologic hazard assessment content

Task 1D. Geotechnical Support Services for Final Design

HWA will provide geotechnical support to the design team as needed during final design development (see Tasks 11 and 12 for details of that development work), including but not limited to:

- Evaluate suitability of native materials for reuse
- Provide recommendations for utilities support/bracing and earthwork

- Update geotechnical analysis memorandum produced under a previous contract for the project to incorporate recommendations for final design of dam removal, stream restoration and culvert replacement
- Review and modify Special Provisions drafted by Herrera and/or Jacobs for up to two (2) sections in the contract bid documents
- Review design plans for incorporation of geotechnical recommendations

Deliverables:

- Final geotechnical analysis memorandum – Adobe PDF electronic file format
- Comments on design plans
- Attendance at one design team meeting
- Respond to City comments related to geotechnical issues affecting final design

Task 2. Analyze and Select Preferred Culvert Replacement Alternative

Before detailed design can proceed the City must select the type of culvert to be installed, allowing the City to justify that selection given the high replacement cost. Building upon the technical memorandum prepared by Herrera and HWA in the preceding phase of this project, Jacobs will analyze pros, cons, and costs of the structural components of the culvert alternatives to enable refining construction cost estimates and a complete assessment of constructability issues. Herrera will address implications for utilities beneath the road and needs for utility relocation and/or bracing/support during culvert excavation. Jacobs and Herrera will collaborate to produce a brief memorandum documenting the evaluation and meet with City staff to discuss the analysis results and support selection of a preferred culvert structure type. The recommended structure type will be included in a final version of the memo.

This task includes the following:

- Assemble and review the data needed to perform the structural analysis, including existing reports, base maps, utilities, and plans.
- Perform a site visit to identify potential conflicts with existing features, and evaluate construction staging constraints.
- Further evaluation of the two culvert options identified in the previous concept design phase, including construction staging concepts, to confirm the planning-level costs and pros/cons of each culvert replacement alternative.
- Prepare a structure layout that defines the structure type, size, location, and construction sequences to assist the City in selecting a preferred alternative.
- Developing refined planning-level costs for the culvert replacement alternatives.

Assumptions:

- One meeting with City staff will occur in this task, at City offices. Three consultant team representatives will attend the meeting to fully address structural, roadway, utility, stream restoration, geotechnical, and construction aspects of the alternatives.
- The draft memo will be up to 5 pages in length including graphics and tables, and will be subject to one round of review and comment collectively by Herrera team members and the City before it is finalized. The final memo will be similar in length and content.
- The costs developed as part of this culvert replacement alternatives analysis will be an order-of-magnitude characterization of costs for use in comparing culvert replacement alternatives, and

will consider the cost of the culvert itself as well as retaining walls, utilities, roadway, stream restoration, and construction implications specific to each culvert replacement alternative.

Deliverables:

- Culvert replacement alternatives evaluation memo - draft in Microsoft Word and Adobe PDF electronic file formats
- Culvert replacement alternatives evaluation memo – final in Microsoft Word and Adobe PDF electronic file formats

Task 3. Stakeholder Outreach and Coordination

It will be critical for the City to get construction support from landowners west of the lake and on both sides of Boeing Creek south of NW Innis Arden Way. It is important to talk with the landowners before advancing into detailed design because their support, or lack of, may affect the layout, in turn affecting design drawings and permit applications. There are three sets of issues to resolve with landowners:

1. Adjacent landowner preferences that can be accommodated in the project design
2. Potential for construction on lakeside residents' parcels
3. Easements needed on parcels bordering the road

Additionally, trail modifications in the park will be of interest to the Parks, Recreation and Cultural Services Board (PRCS) Board and a variety of park users. The tasks below break out these issues into subtasks, preceded by preparing an outreach plan.

Task 3A. Develop Outreach Plan

Carlstad will lead preparation of a concise outreach plan, with input from Herrera and City staff, outlining the feedback and input needed from landowners, park users, and other project stakeholders. Appropriate methods for obtaining feedback, and roles and responsibilities of City staff and the Herrera team in reaching out to these groups will be described. The plan will guide outreach activities and project messaging. A draft version of the outreach plan will be submitted to the City for review and comment.

Assumptions:

- One meeting with City staff will occur at the outset of the work on this task to discuss current impressions of landowners' perspectives, optional approaches for landowner outreach, and confirm the City's preferences for delegating outreach activities to the Herrera team.
- The draft outreach plan will be subject to one round of review and comment collectively by Herrera and the City before it is finalized.

Deliverables:

- Public and Stakeholder Outreach Plan – draft in Microsoft Word electronic file format
- Public and Stakeholder Outreach Plan – final in Microsoft Word electronic file format

Task 3B. Outreach to Lakeside Residents

Input from lakeside residents in 2015 included concerns for aesthetics, privacy, property value, and the types of fish and wildlife habitat created by the project. A key focus in design development work for the project will be engaging these residents to obtain their input on the design, seeking win-win solutions that address these concerns and gain their support for the project. Herrera will prepare landscape renderings of potential post-project conditions that demonstrate ecological and aesthetic benefits to support

discussions with lakeside residents; these will be submitted to the City for review and comment before being finalized for use in a meeting(s) with residents. Meetings with the lakeside residents are expected to be the best method to keep them informed about project activities, share working design concepts, and hear and address questions and concerns. In addition, monthly email updates, and an open offer for individual meetings with adjacent landowners and key stakeholders during strategic design stages will be helpful.

Assumptions:

- Up to four (4) meetings will be convened with lakeside residents for a period of one year from summer 2018 through summer 2019 as design is developed to the permitting stage of completion and feedback is obtained from regulatory agencies along the way. Meetings of up to 2 hours duration each will occur at one of the resident's home or an alternate location in close proximity to the project site.
- Additional communications - likely via telephone and email - will be needed with lakeside landowners to support positive momentum.
- City staff will assist in contacting residents to arrange meetings.

Deliverables:

- Landscape renderings of potential project elements – up to four renderings for different project configurations and/or specific project areas (draft and final) – Adobe Acrobat electronic file format for review, and 11" x 17" or 22" x 34" prints to bring to meetings with residents
- Notes from individual meetings

Task 3C. Support for Easements (Allowance)

The results of Task 2, and ensuing design work in Tasks 8 and 12, will tie into the easement negotiations between the City and three landowners alongside the Boeing Creek crossing at NW Innis Arden Way right-of-way (two on the south side, one on the north side of the road). Herrera and Jacobs will provide support for the City's easement negotiations, which are expected to focus on the properties south of the road. Lead design team members will assist the City as requested, potentially attending meetings, preparing handout materials, and other information to communicate needs and support completion of easement negotiations.

Assumptions:

- The City will lead discussions with individual property owners.
- The City will have complete responsibility for preparing easement documents and coordinating landowner agreements based on those documents.
- Herrera team members will support easement negotiation discussions by furnishing technical information regarding design, construction, and long-term maintenance access requirements.
- The portion of the Task 3 budget dedicated to this subtask is $3,250.

Deliverables:

- Technical information in support of easement proposals and easement documents.

Task 3D. Support for Coordination with PRCS Board, Park Users, and City Council

In advance of Council, Board, and park user meeting(s) Herrera will prepare draft presentation material (such as posters, Powerpoint presentation slides, and handouts) for City staff review. Alta will assist with

respect to trail design issues in the park as described in Task 13. These presentation materials will be finalized several days in advance of the meeting(s), incorporating City comments. Herrera representatives will also support by attending meetings and crafting appropriate messages and narrative content for these meetings.

Assumptions:

- The City will be responsible for arranging meetings and associated logistics with the PRCS Board, park users, and the City Council.
- Herrera staff will attend up to 5 meetings in this task
- Herrera will create up to four 24" x 36" poster boards to support meetings

Deliverables:

- Presentation slides in Microsoft Powerpoint or other electronic format, compatible with the City's preferences
- Presentation board materials - draft and final, up to four 24- x 36-inch poster format

Task 4. Streamflow Gaging

Herrera will continue collecting recorded streamflow staff gage measurements, and occasional manual discharge measurements to enhance the accuracy of the stage-discharge rating curve unique to this location, until construction commences. This data will inform stream channel design and planning for flow diversion during construction, and feed into hydraulic modeling work in Task 5. Herrera will be responsible for staff gage maintenance, data downloading, quality control review of data collected, and conversion of measured stages to flow rates. At the completion of the gaging work, anticipated to be as design is being finalized, Herrera will prepare a technical memorandum documenting the methods and results of the entire period of record that the gage was operated in Boeing Creek.

Assumptions:

- The memo will be subject to one round of review and comment by the City before it is finalized.
- Herrera will remove the streamflow gage at some point during or following project construction.

Deliverables:

- Gage record data in Microsoft Excel spreadsheet format
- Streamflow gaging methods and results memo - draft in Microsoft Word and Adobe PDF electronic file formats
- Streamflow gaging methods and results memo – final in Microsoft Word and Adobe PDF electronic file formats

Task 5. Supplemental Survey Allowance

PGS will survey important areas and features as defined by the design team and as needed to supplement the base map for permitting and final design. If property owners north and west of the lake support extending construction onto their property PGS will obtain single-beam bathymetric and topographic survey near property shorelines. Definitive topographic information will not be needed for trail improvements because the project trail design plans can adapt to ground elevations encountered during construction. However, some survey information will be needed in this area: PGS will survey locations and dimensions of significant trees (flagged by Herrera, as defined by City code) and some ground surface

points in a swath of land where new trail sections will be built (as defined in Task 13). A topographic survey will be performed for a small area in the general location where a project viewing platform will be constructed at the end of a new trail spur. This task will also include locating flags that are placed to delineate wetlands, the Boeing Creek Ordinary High Water Mark (OHWM), and significant trees as described in Task 10.

Assumptions:

- PGS will review specific survey requests to make sure that they can be accommodated with the budget allocated to this task.
- PGS will have reasonable access to all areas requiring survey.
- The budget for this task is based on 60 hours of field mapping effort by PGS staff along with the associated office support for this effort.

Deliverables:

- Updated project base map in AutoCAD electronic file format
- An ASCII file containing the full project points list in PNEZD format.

Task 6. Hydraulic Modeling

The previous hydraulic modeling Herrera conducted for the project was sufficient for understanding the approximate dimensions of the new stream channel through the project area and to generally understand flow depths and velocities that will affect eventual design. The previous modeling did not attempt to yield information for design of wood structures, for final sizing of streambed substrate, or for analysis of potential scour at the base of retaining walls and new culvert sidewalls. Herrera will use the two-dimensional model developed previously, with updated topography from supplemental survey obtained in Task 5. The model will be run for two scenarios: 1) the proposed "lake reach" and "culvert reach" together (i.e., conditions following construction of both reaches), and 2) the proposed lake reach with the existing culverts in place (in case it takes a while to construct the culvert reach after the lake reach construction is completed). Herrera will develop topographic surfaces for use in the model runs for these two proposed conditions scenarios and make one iterative revision to each surface to refine the proposed channel and floodplain dimensions for design.

Key design flows to be modeled will be based on data collected in Task 4 and review of the basin-scale hydrologic modeling completed for the City by others. Basin runoff hydrology will not be re-modeled. Updated model results will be shared with the City in a draft memo focused on implications for tradeoffs in design approaches (and construction costs and long-term performance), to enable decisions to be made that will be reflected in the design plans prepared in subsequent tasks. Herrera will complete additional model runs if necessary to address City comments.

Assumptions:

- No in-person meetings with City staff will be needed in this task.
- The memo will be subject to one round of review and comment by the City before it is finalized.

Deliverables:

- Hydraulic modeling memo – draft in Microsoft Word and Adobe PDF electronic file formats
- Hydraulic modeling memo – final in Microsoft Word and Adobe PDF electronic file formats

Task 7. Preliminary Design for Dam Removal and Stream Restoration

Herrera will prepare 30% complete design plans and an updated construction cost estimate, focusing on design issues critical for City review and concurrence with overall project direction and issues of interest to landowners and park users (informed by work in Task 3). Herrera team design leads will meet with City staff to discuss 30% design review comments.

City comments on the 30% design submittal will be addressed in creating 60% complete design plans and an updated construction cost estimate. By the 60% stage of completion the design plans will encompass drawing sheets for the following: site access and construction staging areas, site preparation, traffic control as needed, temporary erosion and sediment control, streamflow bypass/diversion, dam removal, stream channel grading, stream channel substrate and bank stabilization features, wood structures/placement in the channel, vegetation restoration, and trail improvements including a viewing platform. This will include details, cross-sections and notes for elements important for environmental permitting. Herrera will prepare an outline list of special provisions supplementing the WSDOT/APWA standard specifications for construction to accompany the 60% submittal, but the text of those special provisions will be drafted in Task 11, with the exception of a limited amount of priority special provisions which the City may request to be included in the 60% submittal.

Assumptions:

- Design drawings will be prepared in AutoCAD 2016 software.
- A subset of the drawings listed in the assumptions for Task 11 will be produced by the 60% stage of design completion, focused on information important for permitting, easements, landowner coordination, and accurate cost estimating. In general this means that the details sheets will be mostly blank as of 60% completion.
- Three design team members will meet with City staff to discuss comments on the 30% design submittal
- The City will provide consolidated (including Parks, Public Works, etc.) comments on the 30% design submittal and reconcile any conflicting comments from City reviewers. Consolidated City comments will be provided to Herrera no more than 4 weeks following design submittal.
- 60% design City review comments and the consultant design team's discussion of and response to the City's 60% review comments will be addressed under Task 11.
- Task 7 design submittals will typically be scheduled several weeks in advance of respective Task 8 submittals.

Deliverables:

- 30% design plans
- Written responses to City comments on 30% design plans
- 60% design plans, cost estimate, and outline of construction special provisions.

Task 8. Preliminary Design for Culvert Replacement

Herrera (streambed and utility protection/relocation) and Jacobs (culvert structure, traffic controls, roadway restoration, and retaining walls) will prepare 30% complete plans and an updated construction cost estimate for culvert replacement and construction work in the road corridor, focusing on the design elements most critical for City concurrence with the project direction and interests of stakeholders, including affected landowners. Construction road closure and traffic detouring will be a key component. Rerouting and/or structurally supporting utilities exposed in the roadway excavation will be important to

resolve before 60% design, as utility issues may affect project permitting. Herrera team design leads will meet with City staff to discuss 30% design review comments.

City comments on the 30% design submittal will be addressed in creating 60% complete design plans, a specifications outline list, and a corresponding construction cost estimate. By the 60% stage of completion the design plans will encompass drawing sheets for the following: site access and construction equipment and materials staging, site preparation, temporary erosion and sediment control, traffic control and detouring, temporary (and potentially permanent) utility line support and/or rerouting, streamflow bypass through the work area, stream channel grading, stream channel substrate and bank stabilization features, retaining walls, and roadway restoration including roadway alignment, pavement, profile, roadside restoration, grading, property restoration, guardrail, channelization and signage. These sheets will include representative details, cross-sections and notes for important environmental permitting review elements. Herrera, Jacobs, and HWA will prepare an outline list of special provisions supplementing the WSDOT/APWA standard specifications for construction to accompany the 60% submittal, but the text of those special provisions will be drafted in Task 12, with the exception of a limited amount of priority special provisions which the City may request to be included in the 60% submittal.

Assumptions:

- Culvert design will be based on the outcome of Task 2 - Analyze and Select Preferred Culvert Replacement Alternative.
- Design drawings will be prepared in AutoCAD 2016 software.
- A subset of the drawings listed in the assumptions for Task 12 will be produced by the 60% stage of design completion, focused on information important for permitting, easements, landowner coordination, and accurate cost estimating. In general this means that the details sheets will be mostly blank as of 60% completion.
- The City will provide consolidated comments on the 30% design submittal and reconcile any conflicting comments from City reviewers. Consolidated City comments will be provided to Herrera no more than 4 weeks following design submittal.
- Four design team members will meet with City staff to discuss comments on the 30% design submittal.
- Consultant team design leads will meet as needed during the course of the work on this task to coordinate design elements in advance of communicating the results to the City.
- No deviations from the City's roadway design standards will be required.
- For the purpose of budgeting the design effort, it is assumed that the new culvert will be a prefabricated structure that is performance-specified and designed by the City's construction contractor. Structures design performed by Jacobs will be limited to the culvert headwalls and retaining walls.
- The level of effort for preliminary design is based on an assumed number of drawing sheets and may need to be adjusted depending on the selected culvert structure stemming from work completed in Task 2.
- Roadway clear zone analysis will be performed by Jacobs and documented in project notes shared with the City via email; no formal deliverable will be prepared.
- The City will lead coordination with utility providers.
- 60% design City review comments and the consultant design team's discussion of and response to the City's 60% review comments will be addressed under Task 12.
- Task 8 design submittals will typically be scheduled several weeks following respective Task 7 submittals.

Deliverables:

- 30% design plans (Adobe PDF electronic file format)
- Written responses to City comments on 30% design plans in the form of a comment log in Microsoft Excel electronic file format
- 60% design plans (Adobe PDF electronic file format)
- 60% design cost estimate (Microsoft Excel electronic file format)
- Outline of construction special provisions (Microsoft Word electronic file format)

Task 9. Grant Funding Support Allowance

The City anticipates submitting grant applications to two or more funding programs to obtain construction funding. Herrera, with support from Carlstad, will proactively assess grant programs that fund culvert replacements and/or other eligible project work elements and once a grant is determined to be a "go" by the City, Herrera will coordinate with City staff to prepare technical information for the application, and add and review/edit application text and graphics as requested.

Assumptions:

- The City will be the lead author for grant application(s), with Herrera providing edits and inserts.
- The City will lead coordination with grant program representatives.

Deliverables:

- Grant applicability matrix (updated quarterly)
- Grant application documents (draft input) and supporting details – format to be determined

Task 10. Environmental Permits

Herrera will prepare permit applications and supporting technical documentation; and coordinate with local, state, and federal regulatory agencies and tribes as described in the subtasks below. The "lake reach" and the "culvert reach" will be permitted together as one project for required state and federal environmental permits.

Task 10A. Critical Areas Report and Mitigation Plan

Critical Areas Surveys and Report

Herrera biologists will conduct a site visit to assess existing habitat conditions and ecological functions provided at the project site, delineate wetlands, and identify the ordinary high water mark (OHWM) of Boeing Creek. Biologists will delineate the boundaries of identified wetlands located within the project area. Wetland delineations will extend to within 225 feet of the project site limits (the study area) to determine if buffers associated with off-site wetlands will be affected by the project. Where property access is not provided, Herrera will estimate wetland conditions from the project site and other publically accessible areas. The wetland determination and delineation will be conducted using the routine determination method outlined in the U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual, and the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region*. Delineated wetlands will be classified according to US Fish and Wildlife Service (USFWS) and hydrogeomorphic classification systems, and typed in accordance with the City of Shoreline Municipal Code (SMC) and Washington State Department of Ecology (Ecology)

Washington State Wetland Rating System for Western Washington. The functions of wetlands will be assessed using the Ecology rating system. The SMC will be used to identify the regulated buffer widths of the wetlands. Biologists will flag the boundaries of the wetlands and all test plots. The OHWM will be determined using the definition set forth in WAC 173-22- 030(11) and the guidance outlined in *Determining the Ordinary High Water Mark for Shoreline Management Act Compliance in Washington State*. This involves using sequentially numbered flags to identify the OHWM as evidenced by abrupt changes in topography, dominance of perennial vegetation, sediment deposits, drift lines, and signs of scouring. Biologists will flag the boundaries of the OHWM. The SMC will be used to type Boeing Creek and determine the regulated buffer width. Herrera will identify significant trees within the project area by species and diameter at breast height (dbh).

Herrera will prepare a Critical Areas Report that summarizes the methods and results of the critical areas delineations and assessment. In accordance with SMC Chapter 20.80, the Critical Areas Report will present the classification of delineated critical areas and regulated buffer widths. The report will also present federal, state, and local regulatory implications that pertain to the project.

Mitigation Plan

As design development reaches 30% complete, Herrera will assess project impacts to critical areas and work with the design team to avoid and minimize impacts to critical areas and buffers. For unavoidable impacts, Herrera will work with the City to define mitigation needs for impacts to regulated critical areas and corresponding mitigation approaches to include in the Mitigation Plan. Herrera staff will meet with City staff to discuss mitigation options and the preferred mitigation approach. The mitigation approach will be vetted with USACE, Washington Department of Fish and Wildlife (WDFW), and local tribes representatives during a Pre-application Meeting (see subtask below). The mitigation approach will also be vetted with City of Shoreline Planning and Community Development (PCD) Department permitting representatives. The agreed upon mitigation approach will be included in the 60% design plans and the Mitigation Plan.

Assumptions:

- Off-site wetlands within 225 feet of the project site will be evaluated based on available access, to be provided by the City.
- Field work will be conducted by two biologists.
- Wetland, OHWM, and test plot flags will be surveyed by the professional land surveyor on the team. Herrera biologists will forward field maps of all flag locations to the surveyor.
- Unavoidable impacts to critical areas and buffers will be mitigated on site and no offsite mitigation or purchase of mitigation credits will be necessary.
- The permitting lead and mitigation lead from Herrera will meet with the City to discuss mitigation options.
- The Final Critical Areas Report and Mitigation Plan will be included in the JARPA application submitted to USACE and WDFW, and also included in City of Shoreline critical area permit application package.
- Herrera will respond to one set of consolidated comments from the City.

Deliverables:

- Draft Critical Areas Report and Mitigation Plan (Microsoft Word and Adobe PDF electronic file formats)
- Final Critical Areas Report and Mitigation Plan (Microsoft Word and Adobe PDF electronic file formats)

Task 10B. Environmental Checklist and No Effect Letter

Environmental Checklist

In support of State Environmental Policy Act (SEPA) compliance, Herrera will prepare an Environmental Checklist form. The checklist will include project information on background and environmental elements (earth, air, water, plants, animals, energy and natural resources, environmental health, land and shoreline use, housing, aesthetics, light and glare, recreation, historic and cultural preservation, transportation, public services, and utilities).

No Effect Letter

Herrera will prepare documentation in support of Endangered Species Act (ESA) and Magnuson-Stevens Fishery Conservation and Management Act (MFCMA) compliance. Based on a preliminary evaluation of the project site, the project will qualify for a No Effect Letter because listed threatened and endangered species (e.g., Chinook salmon); and critical habitat are located far enough away from the site that they would not be adversely affected. The no effect evaluation will be based on site reconnaissance conducted as part of critical areas delineation and habitat assessment field work, available published documentation, and contacts with resource agency staff and other knowledgeable individuals.

Assumptions:

- The project will not have any significant impacts on environmental elements requiring preparation of an Environmental Impact Statement (EIS); should an EIS become necessary, a scope and budget amendment will be needed.
- Completion of the Environmental Checklist will rely on information containing in existing survey data, plans, and reports prepared for the project.
- The City will sign the Environmental Checklist and route it to the planning division for review.
- This task does not include support for the appeals process should the SEPA decision by the City be appealed.
- If the project requires preparation of a Biological Evaluation (BE) instead of a No Effect Letter, a scope and budget amendment will be necessary.
- Based on the need for a federal permit, the USACE will be the lead agency responsible for ESA and MFCMA compliance.
- No federal funding of the project.
- The No Effect Letter will be included in the JARPA package for submittal to agencies.
- Concurrence from the federal Services with ESA jurisdiction (USFWS and NOAA Fisheries) is not required on a No Effect determination and therefore the No Effect letter will not be sent to the Services.
- Herrera will respond to one set of consolidated comments from the City on the draft SEPA Environmental Checklist and the No Effect Letter.

Deliverables:

- Draft Environmental Checklist (Microsoft Word and Adobe PDF electronic file formats)
- Final Environmental Checklist (Microsoft Word and Adobe PDF electronic file formats)
- Draft No Effect Letter (Microsoft Word and Adobe PDF electronic file formats)
- Final No Effect Letter (Microsoft Word and Adobe PDF electronic file formats)

Task 10C. Permit Applications and Support

Agency Coordination

Herrera will provide necessary permitting coordination in support of obtaining permits from the USACE and WDFW, including pre-application meetings/conferences, completion of supplemental permit application documentation (if needed in addition to the original JARPA), submittal of permit application packages, and follow-up coordination to respond to agency and tribe comments. Herrera will arrange and participate in a pre-application meeting at the project site with representatives of the USACE, WDFW, Ecology, tribes, the City, and the project team. Herrera will prepare an agenda, organize the meeting, prepare meeting minutes, and distribute electronic copies to the meeting participants. The design lead and permitting lead from Herrera will attend this meeting. Should the USACE not be able to attend the site meeting, this pre-application meeting will instead be held at the USACE Seattle District office during the designated meeting dates and all other team members and agency representatives will attend.

In support of obtaining local permits, Herrera will participate in the required pre-application meeting (separate from the other pre-application meeting with USACE, etc., described above) with the City of Shoreline PCD Department (and other departments as determined necessary) to discuss the project and application materials needed to obtain permits from the City. Herrera will support City permit applications to be led by City staff.

Herrera will assist the City in maintaining contact with permit reviewers after submitting permit applications to assure any questions or needs are promptly identified and addressed, discuss anticipated permit approval timeframes, and provide supplemental information if needed to obtain permits and approvals.

JARPA Form and Figures

Herrera will prepare a Joint Aquatic Resources Permit Application (JARPA) form and supporting figures in support of acquiring a Clean Water Act Section 404 permit from the USACE, a Clean Water Act Section 401 Water Quality Certification from Ecology, and a Hydraulic Project Approval (HPA) from WDFW. Herrera will prepare the JARPA form including information pertaining to the applicant, property owners, project location, project description, wetlands, streams, and necessary permits. Herrera will prepare JARPA figures according to USACE formatting guidelines including a vicinity map, property ownership information, plan views, and representative cross-sections. The JARPA figures will identify all work proposed in wetlands and waterward of the ordinary high water mark including quantities of excavation and fill. Herrera will mail the final JARPA form with supporting documentation (figures, Critical Areas Report and Mitigation Plan, and No Effect Letter) to USACE and Ecology.

Herrera will upload the JARPA and supporting documentation to the Aquatic Protection Permitting System (APPS) portal in support of obtaining an HPA from WDFW. A SEPA determination from the City is required before the application is considered complete and ready for review by a WDFW habitat biologist.

Cultural Resources Assessment Report Update

In 2015 a draft cultural resources assessment report was prepared for the project, concluding that the likelihood of encountering archaeological resources at the site is low and that there are no structures in the project area that warrant designation as historically significant. That report needs to be updated to reflect the current project description (which includes culvert replacement as part of the project), supported by additional site reconnaissance and refreshed analysis of available documents to reference. A draft of this updated report will be provided to the project design team and City for review, and any comments will be incorporated into a final version to be submitted to regulatory agencies along with the JARPA.

Other Permit Support

In support of obtaining coverage under a Nationwide Permit from USACE, Herrera will complete the form for certification of consistency with the Washington State Coastal Zone Management Program (i.e., CZMA consistency form).

Herrera will prepare a NPDES construction stormwater general permit application and accompanying stormwater pollution prevention plan (SWPPP).

Assumptions:

- Design for dam removal, stream restoration, and culvert replacement project elements will be combined and permitted together as one project for required local, state, and federal environmental permits and approvals.
- Local, state, and federal environmental permits and approvals for the combined project elements are generally expected to remain valid for a period of 3-5 years, potentially allowing for extended flexibility in sequence and schedule for constructing all project elements within that timeframe. Permit extensions or reapplication is expected to be required for any project elements not constructed within the timeframe of the original issued permit.
- Herrera will solicit comments from the City and relevant project team members on the agenda and meeting notes before distributing to the agencies and tribes.
- The JARPA form and figures will be based upon 60% design details prepared in Tasks 7 and 8.
- Herrera will prepare up to ten JARPA figures.
- Herrera will be the authorized agent and will submit the JARPA to USACE, Ecology, and WDFW.
- The City will be responsible for all permit fees.
- The project will qualify for a Clean Water Act Section 404 Nationwide Permit and will not require an Individual Permit; should an Individual Permit become necessary, a scope and budget amendment will be needed.
- The timeframe for obtaining a Section 404 permit from the USACE is approximately 12 months.
- Cultural resources analysis work conducted to date indicates that no additional cultural resources documentation is needed before construction.
- The permitting effort associated with City of Shoreline permit applications assumes City staff will lead preparation of applications for the following City permits, with review and technical support provided by Herrera: Clearing and Grading, Critical Area Special Use Permit (CASUP), and Demolition (for the dam).

Deliverables:

- Pre-Application Meeting agendas (Microsoft Word and Adobe PDF electronic file formats)
- Pre-Application Meeting notes (Adobe PDF electronic file formats)
- Draft JARPA form and figures (Microsoft Word and Adobe PDF electronic file formats)
- Final JARPA form, figures, and supporting documentation mailed to USACE and Ecology (2 hard copies); and uploaded to WDFW's APPS portal (Adobe PDF electronic file format)
- Revised Final JARPA form to address USACE, WDFW, or tribe comments (Adobe PDF electronic file format)
- Revised Final Critical Areas Report and Mitigation Plan to address USACE, WDFW, or tribe comments (Adobe PDF electronic file format)
- Revised Final No Effect Letter to address USACE, WDFW, or tribe comments (Adobe PDF electronic file format)
- CZMA Consistency Form (Adobe PDF electronic file format)

- Draft cultural resources assessment report (Adobe PDF electronic file format)
- Final cultural resources assessment report (Adobe PDF electronic file format)
- Draft Stormwater Pollution Prevention Plan (SWPPP) (Microsoft Word and Adobe PDF electronic file formats)
- Final Stormwater Pollution Prevention Plan (SWPPP) (Microsoft Word and Adobe PDF electronic file formats)
- Draft NPDES Construction Stormwater Permit Application (Microsoft Word and Adobe PDF electronic file formats)
- Final NPDES Construction Stormwater Permit Application (Microsoft Word and Adobe PDF electronic file formats)
- City of Shoreline permit application documents (draft input) and supporting details – format to be determined.

Task 11. Final Design for Dam Removal and Stream Restoration

Herrera will incorporate City comments on the 60% design submittal and feedback from regulatory agencies to create 90% complete design plans, draft construction special provisions, and an updated construction cost estimate. City comments on the 90% submittal will be addressed in preparing the final construction (ad-ready) design plans, special provisions, bid form, and cost estimate. The construction bid package will reflect finalized construction easement conditions and permit requirements.

Assumptions:

- Up to 19 sheets are assumed for the final, ad-ready bid package for these project elements, including the following:
    1. Cover / sheet index
    2. Legend and general notes
    3. Existing site plan
    4. Proposed site plan (all project elements, incl. designated staging areas)
    5. Traffic management plan and details
    6. Removal plan
    7. Stream restoration plan and profile 1
    8. Stream restoration plan and profile 2
    9. Stream restoration sections and details 1
    10. Stream restoration sections and details 2
    11. Streamflow bypass plan
    12. Streamflow bypass details
    13. Temporary erosion and sediment control plan
    14. TESC details
    15. Riparian planting plan
    16. Riparian planting schedule and details 1
    17. Riparian planting schedule and details 2
- Additional drawing sheets for trail improvements are described in Task 13.
- Two design team members will meet with City staff to discuss comments on both the 60% and 90% design submittals.
- The City will provide consolidated comments on the 60%, 90%, and final design submittals and reconcile any conflicting comments from City reviewers. Consolidated City comments will be provided to the design team no more than 4 weeks following design submittal.

- The City will assemble the Project Manual and advertise the project.
- Task 11 design submittals will typically be scheduled several weeks in advance of respective Task 12 submittals.

Deliverables:

- 90% design plans in Adobe PDF format
- Draft special provisions for Divisions 2 through 9 in Microsoft Word electronic file format
- 90% construction cost estimate in Microsoft Excel electronic file format
- Written responses to City comments on 60% design plans in the form of a comment tracking log
- Written responses to City comments on 90% design plans in the form of a comment tracking log
- Final proof copy (100% review) design plans – Adobe PDF file format
- Final ad-ready design plans (signed and stamped by a registered professional engineer, 11"x17" size) – Adobe PDF file format
- Final special provisions for Divisions 2 through 9 in Microsoft Word electronic file format, and folding in Division 1 provisions written by the City into a single file
- Final construction cost estimate in Microsoft Excel electronic file format
- Written responses to City comments on the 90% design plans
- Final bid form in Microsoft Word electronic file format
- AutoCAD drawing files.

Task 12. Final Design for Culvert Replacement

Herrera and Jacobs will incorporate City comments on the 60% design submittal and feedback from regulatory agencies to create 90% design plans, draft construction special provisions, and an updated construction cost estimate. City comments on the 90% submittal will be addressed in preparing the final (ad-ready) design plans, special provisions, bid form, and cost estimate. The final design package will reflect finalized construction easement conditions and permit requirements.

Assumptions:

- Up to 25 drawing sheets are assumed for the final, ad-ready bid package, including the following content:
    1. Cover / sheet index
    2. Legend and general notes
    3. Existing site plan
    4. Proposed site plan (all project elements, incl. designated staging areas)
    5. Site preparation plan
    6. Traffic management plan and details
    7. Structural notes
    8. Culvert profile and typical section
    9. Culvert headwall details – 1
    10. Culvert headwall details - 2
    11. Retaining wall plan and elevations
    12. Retaining wall sections and details
    13. Utility protection/relocation site plan
    14. Utility protection/relocation details - 1
    15. Utility protection/relocation details - 2

16. Roadway restoration plan
17. Roadway restoration details
18. Streamflow bypass plan
19. Streamflow bypass details
20. Temporary erosion and sediment control plan
21. TESC details
22. Planting plan
23. Planting schedule and details

- The City will provide consolidated comments on the 60%, 90%, and final design submittals and reconcile any conflicting comments from City reviewers. Consolidated City comments will be provided to the design team no more than 4 weeks following design submittal.
- Up to four design team members will meet with City staff to discuss comments on the 60% design submittal.
- Up to four design team members will meet with City staff to discuss comments on the 90% design submittal.
- The City will assemble the Project Manual and advertise the project.
- Task 12 design submittals will typically be scheduled several weeks following respective Task 11 submittals.

Deliverables:

- 90% design plans in Adobe PDF format
- Draft special provisions for Divisions 2 through 9 in Microsoft Word electronic file format
- 90% construction cost estimate in Microsoft Excel electronic file format
- Written responses to City comments on 60% design plans in the form of a comment tracking log
- Written responses to City comments on 90% design plans in the form of a comment tracking log
- Final proof copy (100% review) design plans – Adobe PDF file format
- Final design plans (signed and stamped by a registered professional engineer, 11”x17” size) – Adobe PDF file format
- Final special provisions for Divisions 2 through 9 in Microsoft Word electronic file format, and folding in Division 1 provisions written by the City into a single file
- Final construction cost estimate in Microsoft Excel electronic file format
- Written responses to City comments on the 90% design plans
- Final bid form in Microsoft Word electronic file format
- Structures calculations, stamped and sealed
- AutoCAD drawing files.

Task 13. Trail Improvements

Task 13A. Stakeholder Outreach and Coordination for Trail Improvements

Trail modifications in the park will be of interest to the Parks, Recreation and Cultural Services Board (PRCS) Board and a variety of park users. In advance of Council, Board, and park user meeting(s) Alta will assist Herrera in preparing draft presentation material (such as posters, Powerpoint presentation slides, and handouts) for City staff review. These presentation materials will be finalized several days in advance of the meeting(s), incorporating City comments.

Assumptions:

- The City will be responsible for arranging meetings and associated logistics with the PRCS Board, park users, and the City Council.
- Alta staff will not need to attend any meetings with stakeholders.
- Alta will create up to four 24" x 36" poster boards to support meetings if/as requested specific to trail improvement design plans and options.

Deliverables:

- Presentation board materials - draft and final, up to four 24- x 36-inch poster format

Task 13B. Preliminary Design (30% and 60%) for Trail Improvements

Alta will prepare 30% complete design plans and provide input to Herrera for corresponding construction cost estimate items, focusing on design issues critical for City review and concurrence with overall project direction and issues of interest to landowners and park users. Alta will conduct a site assessment to evaluate the adjacent trail condition and assist Herrera in identifying an optimal location(s) for the proposed viewing platform. Alta's lead designer for trail elements will meet with City staff and other Herrera team representatives to discuss 30% design review comments.

City comments on the 30% design submittal will be addressed in creating 60% complete design plans and an updated construction cost estimate for trail improvements. By the 60% stage of completion the design plans for trail improvements will include details, cross-sections and notes for elements important for environmental permitting. Alta will prepare an outline list of special provisions for trail improvements supplementing the WSDOT/APWA standard specifications for construction to accompany the 60% submittal, but the text of those special provisions will be drafted in Task 13C, with the exception of a limited amount of priority special provisions which the City may request to be included in the 60% submittal.

Assumptions:

- Design drawings will be prepared in AutoCAD 2016 software.
- A subset of the drawing contents listed in Task 13C will be produced by the 60% stage of design completion, focused on information important for permitting, easements, landowner coordination, and cost estimating.
- Herrera and Alta will have a collaborative design planning meeting prior to the preparation of the 30% design documents to provide coordinated integration of stream restoration and trail design.
- One Alta designer will attend a meeting with City staff and Herrera to discuss comments on the 30% design submittal.
- The City will provide consolidated (including Parks, Public Works, etc.) comments on the 30% design submittal and reconcile any conflicting comments from City reviewers. Consolidated City comments will be provided to the design team no more than 4 weeks following design submittal.
- 60% design City review comments and the Herrera design team's discussion of and response to the City's 60% review comments will be addressed in Final Design.

Deliverables:

- Trail alignment/layout site assessment summary (in the form of a brief letter or memo)
- 30% design plans for trail improvements
- Written responses to City comments on 30% design plans

- 60% design plans, cost estimate, and outline of construction special provisions for trail improvements.

Task 13C. Final Design (90% and 100%) for Trail Improvements

Alta will incorporate City comments on the 60% design submittal for trail improvements and feedback from regulatory agencies to create 90% complete design plans, draft construction special provisions, and an updated construction cost estimate. City comments on the 90% submittal will be addressed in preparing the final construction (ad-ready) design plans, special provisions, and cost estimate as part of the overall Hidden Lake Dam Removal project construction documentation. Alta will coordinate completion of the trail improvements content of the design submittal packages with Herrera, so that the City receives seamless products.

Assumptions:

- Trail improvements will include the following drawing sheets for the final, ad-ready bid package:
    18. Trail improvements site plan
    19. Trail improvement details 1
    20. Trail improvement details 2 (incl. any minor trailside planting)
- One Alta designer will attend a meeting with City staff and Herrera to discuss comments on both the 60% and 90% design submittals.
- The City will provide consolidated comments on the 60%, 90%, and final design submittals and reconcile any conflicting comments from City reviewers. Consolidated City comments will be provided to the design team no more than 4 weeks following design submittal.
- The City will assemble the Project Manual and advertise the project.

Deliverables:

- 90% design plans in Adobe PDF format
- Draft special provisions for trail improvement elements as applicable in Divisions 2 through 9 in Microsoft Word electronic file format
- 90% construction cost estimate input in Microsoft Excel electronic file format
- Written responses to City comments on 60% design plans for trail improvements in the form of a comment tracking log
- Written responses to City comments on 90% design plans for trail improvements in the form of a comment tracking log
- Final design plans for trail improvements (signed and stamped by a registered landscape architect, 11”x17” size) – Adobe PDF file format
- Final special provisions relevant to trail improvements for Divisions 2 through 9 in Microsoft Word electronic file format
- Final construction cost estimate input in Microsoft Excel electronic file format
- Written responses to City comments on the 90% design plans for trail improvements
- Input to final bid form in Microsoft Word electronic file format
- AutoCAD drawing files for trail improvements.

Task 14. Project Management

Herrera will prepare a concise Project Management Plan at the outset of the work described in preceding tasks outlining roles, responsibilities, and procedures for the following: quality assurance and quality control, communications, schedule management, and other sections of interest to the City.

Subconsultants will review and comment on the plan and thereafter implement the sections in it that apply to their work. Herrera will lead preparation of a detailed critical path schedule for all activities described in this scope of work within the first month of the team's work on this contract for review and comment by the City, and thereafter update it periodically as needed. Consultant team technical leads will contribute schedule input and drive their specific task work to align with the current schedule approved by the City. Herrera will track task budget usage on a weekly and monthly basis, and proactively address budget issues with the City's project manager. Monthly invoices and progress reports will be prepared concurrent with progress on active tasks.

Herrera's project manager will meet with the City's project manager biweekly (an average of twice per month) to discuss task work to focus attention on, upcoming needs for outreach, management briefings, and pending deliverables that will need City review. Herrera design and permitting task lead staff will participate in some of these progress meetings when active work on those tasks warrants their input for the City project manager's benefit. Project managers from each of the firms on the consultant team will coordinate as needed regarding active and pending task work, and to make adjustments to the scope of work as may be appropriate depending on how project circumstances evolve.

Assumptions:

- Project management meetings will occur via telephone or other conference calling format, and average 45 minutes per meeting.
- Project management coordination and meetings will occur for a period of 24 months from start-up of the work through completion of all deliverables described in this scope of work.
- The critical path schedule will be prepared in Microsoft Project software.

Deliverables:

- Project Management Plan - draft and final in Microsoft Word electronic file format, and periodic updates to it as may be warranted
- Notes from project management meetings to guide ongoing work and document key decisions
- Monthly invoices and progress reports
- Quality Assurance (QA) activities to make sure that the Quality Control (QC) processes outlined in the Project Management Plan are implemented for each task described above are followed.

Task 15. Management Reserve

This task provides a means for the City to supplement this scope of work without requiring a Council-approved contract modification. Herrera will promptly communicate all project requirements considered to be outside the approved scope of work for Tasks 1-13 to the City's Project Manager as the work of those tasks is carried out. Herrera must prepare a written scope of work and budget estimate and receive written approval from the City Project Manager prior to performing any additional work using Management Reserve funds. City approvals for use of the Management Reserve will be documented either via e-mail or other written correspondence.

Deliverables

- Scope(s) of work and budget tabulation(s) for specific work to be performed using the Management Reserve, in similar format as the scope and budget of the original consultant contract.

HERRERA ENVIRONMENTAL CONSULTANTS

Cost Estimate for Hidden Lake Dam Removal Project Design and Permitting

Hidden Lake Dam Removal Design and Permitting *Number of Tasks :* ***15***			**Task 1** *Geotechnical Analysis*		**Task 2** *Analyze and Select Preferred Culvert Replacement Alternative*		**Task 3** *Stakeholder Outreach and Coordination*		**Task 4** *Streamflow Gaging*		**Task 5** *Supplemental Survey Allowance*		**Task 6** *Hydraulic Modeling*		**Task 7** *Prelim Design for Dam Removal and Stream Restoration*		**Task 8** *Prelim Design for Culvert Replacement*		**Task 9** *Grant Funding Support Allowance*	
Schedule (start and end dates)			***June 2018 - Feb 2020***		***June - Aug 2018***		***June 2018 - Nov 2019***		***June 2018 - May 2020***		***July - Aug 2018***		***Aug - Oct 2018***		***August - Dec 2018***		***Sept 2018 - Jan 2019***		***Nov 2018 - March 2020***	
COST SUMMARY																				
Labor				$1,726		$8,226		$24,319		$9,462		$1,027		$19,880		$34,261		$44,615		$7,142
Escalation factor on labor for work beyond 2018 (by task)		3%		$0		$0		$365		$284		$0		$0		$0		$0		$107
Other direct costs (ODCs)				$0		$0		$0		$1,080		$0		$0		$0		$0		$0
Subconsultants				$50,477		$14,525		$18,533		$0		$20,623		$0		$2,696		$89,390		$5,391
GRAND TOTAL				**$52,203**		**$22,765**		**$43,366**		**$10,935**		**$21,650**		**$19,880**		**$36,970**		**$134,018**		**$12,641**
COST ITEMIZATION																				
Labor		(2018 rates)																		
Personnel		Rate/Hour	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost
Ewbank, Mark	Vice President	$240.57	1	$241	4	$962	43	$10,345	2	$481	0	$0	2	$481	6	$1,443	13	$3,127	12	$2,887
Wood, Theresa	Vice President	$226.12	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Ahearn, Dylan	Scientist V	$225.70	0	$0	0	$0	0	$0	4	$903	0	$0	0	$0	0	$0	0	$0	0	$0
Parsons, Jeff	Engineer V	$207.56	0	$0	0	$0	0	$0	0	$0	0	$0	12	$2,491	4	$830	2	$415	12	$2,491
Mostrenko, Ian	Engineer V	$206.57	4	$826	8	$1,653	12	$2,479	0	$0	0	$0	24	$4,958	36	$7,437	41	$8,469	0	$0
Ritchotte, George	Scientist IV	$178.91	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Houck, Heidi	Engineer IV	$167.54	0	$0	20	$3,351	8	$1,340	0	$0	0	$0	0	$0	0	$0	58	$9,717	0	$0
Gifford, Kristina	Planner IV	$155.74	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Petro, Shelby	Scientist IV	$138.14	0	$0	0	$0	0	$0	0	$0	3	$414	0	$0	0	$0	0	$0	0	$0
Forester, Kate	Landscape Architect III	$140.44	0	$0	0	$0	20	$2,809	0	$0	0	$0	0	$0	44	$6,179	12	$1,685	0	$0
Svendsen, Alex	Scientist III	$136.90	0	$0	0	$0	0	$0	48	$6,571	0	$0	0	$0	0	$0	0	$0	0	$0
Marshall, Eric	CAD Technician III	$130.88	0	$0	8	$1,047	0	$0	0	$0	3	$393	0	$0	85	$11,125	115	$15,051	0	$0
Munger, Julia	Scientist III	$127.51	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Wu, Valerie	Engineer II	$109.80	6	$659	8	$878	10	$1,098	8	$878	2	$220	0	$0	66	$7,247	56	$6,149	12	$1,318
Kayser, Gretchen	Engineer I	$116.89	0	$0	0	$0	0	$0	0	$0	0	$0	86	$10,053	0	$0	0	$0	0	$0
Geigel, Joseph	GIS Analyst I	$90.68	0	$0	0	$0	0	$0	2	$181	0	$0	16	$1,451	0	$0	0	$0	0	$0
Gleason, Rayna	Landscape Designer I	$86.07	0	$0	0	$0	70	$6,025	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Saavedra, Robin	Accounting Administrator III	$108.31	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Rudnick, Tracy	Accounting Administrator III	$107.15	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0
Jackowich, Pam	Administrative Coordinator IV	$111.79	0	$0	3	$335	2	$224	4	$447	0	$0	4	$447	0	$0	0	$0	4	$447
SUBTOTAL LABOR (Burdened Labor)			**11**	**$1,726**	**51**	**$8,226**	**165**	**$24,319**	**68**	**$9,462**	**8**	**$1,027**	**144**	**$19,880**	**241**	**$34,261**	**297**	**$44,615**	**40**	**$7,142**
TRAVEL AND PER DIEM COSTS	Unit	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost
Auto Use	Mile	$0.545	0	$0.00	25	$13.63	275	$149.88	200	$109.00	0	$0.00	0	$0.00	25	$13.63	25	$13.63	0	$0.00
SUBTOTAL TRAVEL AND PER DIEM				**$0**		**$14**		**$150**		**$109**		**$0**		**$0**		**$14**		**$14**		**$0**
OTHER DIRECT COSTS (ODCs)	Unit	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost
Photocopying, CAD Plots, and Printing																				
Photocopying (color)	Page	$0.75	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00
CAD Plots	Page	$1.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00
Printing/Graphics (vendor)	Cost			$0.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00
Delivery Services																				
Courier	Cost			$0.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00
Field Equipment and Supplies																				
Camera, digital	Day	$10	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00
Computer, laptop	Day	$50	0	$0.00	0	$0.00	0	$0.00	8	$400.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00
Current meter (Marsh McBirney)	Day	$75	0	$0.00	0	$0.00	0	$0.00	8	$600.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00
Hand soil auger	Day	$10	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00
Waders	Day	$20	0	$0.00	0	$0.00	0	$0.00	4	$80.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00
SUBTOTAL ODCs				**$0**		**$0**		**$0**		**$1,080**		**$0**		**$0**		**$0**		**$0**		**$0**
SUBCONSULTANT COSTS	Unit	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost
Cultural Resource Consultants				$0.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00
Alta Planning + Design				$0.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00
Carlstad Consulting				$0.00		$0.00		$ 17,820.00		$0.00		$0.00		$0.00		$ 2,592.00		$ 1,296.00		$ 5,184.00
HWA GeoSciences				$48,536.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00
Jacobs				$0.00		$13,966.09		$0.00		$0.00		$0.00		$0.00		$0.00		$84,655.82		$0.00
Pacific Geomatic Services				$0.00		$0.00		$0.00		$0.00		$19,830.00		$0.00		$0.00		$0.00		$0.00
Fee on Subconsultants @ 4%		4%		$1,941		$559		$713		$0		$793		$0		$104		$3,438		$207
SUBTOTAL SUBCONSULTANT				**$50,477**		**$14,525**		**$18,533**		**$0**		**$20,623**		**$0**		**$2,696**		**$89,390**		**$5,391**

HERRERA ENVIRONMENTAL CONSULTANTS

Cost Estimate for Hidden Lake Dam Removal Project Design and Permitting

Hidden Lake Dam Removal Design and Permitting *Number of Tasks :* ***15***			**Task 10A** *Critical Areas Report and Mitigation Plan*		**Task 10B** *Environmental Checklist and No Effect Letter*		**Task 10C** *Permit Applications and Support*		**Task 11** *Final Design for Dam Removal and Stream Restoration*		**Task 12** *Final Design for Culvert Replacement*		**Task 13** *Trail Improvements*		**Task 14** *Project Management*		**Task 15** *Management Reserve*		**TOTAL**	
Schedule (start and end dates)			***June - Nov 2018***		***Oct - Dec 2018***		***Jan 2019 - March 2020***		***Jan 2019 - Feb 2020***		***Feb 2019 - March 2020***		***June 2018 - April 2020***		***May 2018 - April 2020***		***2019-2020***			
COST SUMMARY																				
Labor				$30,704		$14,221		$32,043		$42,477		$47,581		$0		$47,485		$24,227		$389,395
Escalation factor on labor for work beyond 2018 (by task)		3%		$0		$0		$961		$1,593		$1,784		$0		$1,282		$727		$7,103
Other direct costs (ODCs)				$40		$0		$0		$15		$15		$0		$0		$20		$1,170
Subconsultants				$0		$0		$1,155		$2,696		$51,593		$47,023		$20,128		$0		$324,230
GRAND TOTAL				**$30,771**		**$14,235**		**$34,186**		**$46,808**		**$101,001**		**$47,023**		**$68,895**		**$25,000**		**$722,347**
COST ITEMIZATION																				
Labor		(2018 rates)																		
Personnel		Rate/Hour	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost
Ewbank, Mark	Vice President	$240.57	2	$481	5	$1,203	10	$2,406	14	$3,368	16	$3,849	0	$0	156	$37,529	10	$2,406	296	$71,209
Wood, Theresa	Vice President	$226.12	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	4	$904	0	$0	4	$904
Ahearn, Dylan	Scientist V	$225.70	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	4	$903
Parsons, Jeff	Engineer V	$207.56	0	$0	0	$0	0	$0	2	$415	2	$415	0	$0	0	$0	0	$0	34	$7,057
Mostrenko, Ian	Engineer V	$206.57	0	$0	0	$0	0	$0	44	$9,089	38	$7,850	0	$0	4	$826	20	$4,131	231	$47,718
Ritchotte, George	Scientist IV	$178.91	0	$0	28	$5,009	10	$1,789	0	$0	0	$0	0	$0	0	$0	0	$0	38	$6,799
Houck, Heidi	Engineer IV	$167.54	0	$0	0	$0	0	$0	0	$0	70	$11,728	0	$0	0	$0	20	$3,351	176	$29,487
Gifford, Kristina	Planner IV	$155.74	4	$623	6	$934	4	$623	0	$0	0	$0	0	$0	0	$0	0	$0	14	$2,180
Petro, Shelby	Scientist IV	$138.14	38	$5,249	6	$829	94	$12,985	0	$0	0	$0	0	$0	4	$553	20	$2,763	165	$22,793
Forester, Kate	Landscape Architect III	$140.44	26	$3,651	0	$0	0	$0	60	$8,426	19	$2,668	0	$0	0	$0	20	$2,809	201	$28,228
Svendsen, Alex	Scientist III	$136.90	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	48	$6,571
Marshall, Eric	CAD Technician III	$130.88	6	$785	0	$0	66	$8,638	89	$11,648	98	$12,826	0	$0	0	$0	20	$2,618	490	$64,131
Munger, Julia	Scientist III	$127.51	131	$16,704	40	$5,100	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	171	$21,804
Wu, Valerie	Engineer II	$109.80	0	$0	0	$0	32	$3,514	77	$8,455	70	$7,686	0	$0	0	$0	20	$2,196	367	$40,297
Kayser, Gretchen	Engineer I	$116.89	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	20	$2,338	106	$12,390
Geigel, Joseph	GIS Analyst I	$90.68	28	$2,539	4	$363	7	$635	0	$0	0	$0	0	$0	0	$0	0	$0	57	$5,169
Gleason, Rayna	Landscape Designer I	$86.07	0	$0	0	$0	0	$0	6	$516	0	$0	0	$0	0	$0	15	$1,291	91	$7,832
Saavedra, Robin	Accounting Administrator III	$108.31	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	56	$6,065	3	$325	59	$6,390
Rudnick, Tracy	Accounting Administrator III	$107.15	0	$0	0	$0	0	$0	0	$0	0	$0	0	$0	15	$1,607	0	$0	15	$1,607
Jackowich, Pam	Administrative Coordinator IV	$111.79	6	$671	7	$783	13	$1,453	5	$559	5	$559	0	$0	0	$0	0	$0	53	$5,925
SUBTOTAL LABOR (Burdened Labor)			**241**	**$30,704**	**96**	**$14,221**	**236**	**$32,043**	**297**	**$42,477**	**318**	**$47,581**	**0**	**$0**	**239**	**$47,485**	**168**	**$24,227**	**2,620**	**$389,395**
TRAVEL AND PER DIEM COSTS	Unit	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost
Auto Use	Mile	$0.545	50	$27.25	25	$13.63	50	$27.25	50	$27.25	50	$27.25	0	$0.00	0	$0.00	48	$26.16	823	$449
SUBTOTAL TRAVEL AND PER DIEM				**$27**		**$14**		**$27**		**$27**		**$27**		**$0**		**$0**		**$26**		**$449**
OTHER DIRECT COSTS (ODCs)	Unit	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost
Photocopying, CAD Plots, and Printing																				
Photocopying (color)	Page	$0.75	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0
CAD Plots	Page	$1.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0
Printing/Graphics (vendor)	Cost			$0.00		$0.00		$0.00		$0.00		$0.00		$0.00		$0.00		$20.00		$20
Delivery Services																				
Courier	Cost			$0.00		$0.00		$0.00		$15.00		$15.00		$0.00		$0.00		$0.00		$30
Field Equipment and Supplies																				
Camera, digital	Day	$10	2	$20.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	2	$20
Computer, laptop	Day	$50	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	8	$400
Current meter (Marsh McBirney)	Day	$75	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	8	$600
Hand soil auger	Day	$10	2	$20.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	2	$20
Waders	Day	$20	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	0	$0.00	4	$80
SUBTOTAL ODCs				**$40**		**$0**		**$0**		**$15**		**$15**		**$0**		**$0**		**$20**		**$1,170**
SUBCONSULTANT COSTS	Unit	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost	Units	Cost
Cultural Resource Consultants				$0.00		$0.00		$1,110.48		$0.00		$0.00		$0.00	0	$483.02	0	$0.00		$1,594
Alta Planning + Design				$0.00		$0.00		$0.00		$0.00		$0.00		$45,214.00	0	$0.00	0	$0.00		$45,214
Carlstad Consulting				$0.00		$0.00		$0.00		$ 2,592.00		$ 1,296.00		$0.00	0	$0.00	0	$0.00		$30,780
HWA GeoSciences				$0.00		$0.00		$0.00		$0.00		$0.00		$0.00	0	$5,460.00	0	$0.00		$53,996
Jacobs				$0.00		$0.00		$0.00		$0.00		$48,312.91		$0.00	0	$13,411.17	0	$0.00		$160,346
Pacific Geomatic Services				$0.00		$0.00		$0.00		$0.00		$0.00		$0.00	0	$0.00	0	$0.00		$19,830
Fee on Subconsultants @ 4%		4%		$0		$0		$44		$104		$1,984		$1,809		$774		$0		$12,470
SUBTOTAL SUBCONSULTANT				**$0**		**$0**		**$1,155**		**$2,696**		**$51,593**		**$47,023**		**$20,128**		**$0**		**$324,230**

Hidden Lake Dam Removal Final Design and Permitting
Budget Summary

Firm			CH2M							
Role			Structural	Structural	Roadway	Traffic	QAQC	Sr. Technician (CAD)	Project Assistant	Accounting / Contracts
Individual			Mark Johnson	E3	Jason Boyett	Matt Palzkill	John McKenzie	Lisa Johnson	Natalie Nicholson	Stephanie Rosenbaum
Calculated billing rate based on OH, profit, and 2017 raw labor rate			$ 212.37	$ 133.45	$ 147.57	$ 110.50	$ 210.85	$ 114.21	$ 92.40	$ 100.30
	TOTAL TASK	**TOTAL**								
2 Culvert Structure Alternatives Analysis	**$ 13,524.52**	**80**	**$ 5,946**	**$ 2,135**	**$ 2,066**	**$ 442**	**$ 2,109**	**$ 457**	**$ 370**	**$ -**
2.1 Prep for meeting with, and meet with, City staff		12	8	0	2				2	
2.2 Prepare culvert replacement alts analysis memo		62	20	16	12	4	4	4	2	
2.3 QA/QC		6					6			
8 Preliiminary Design for Culvert Replacement	**$ 82,050.93**	**552**	**$ 12,742**	**$ 16,014**	**$ 21,250**	**$ 3,315**	**$ 13,916**	**$ 13,705**	**$ 1,109**	**$ -**
8.1 prepare 30% plans		192	20	32	44	10	22	60	4	
8.2 Meetings - receive comments on 30% plans, a		46	16	0	16	2	8	0	4	
8.3 Prepare 60% plans and outline of constructior		300	24	88	84	18	22	60	4	
8.4 QA/QC		14					14			
12 Final Design for Culvert Replacement	**$ 46,731.76**	**315**	**$8,495**	**$10,676**	**$10,625**	**$884**	**$6,747**	**$8,565**	**$739**	**$-**
12.1 Prepare 90% plans and special provisions, an		240	24	80	56	4	12	60	4	
12.2 Final plans and special provisions and writter		59	16		16	4	4	15	4	
12.3 QA/QC		16					16			
13 Project Management	**$ 13,020.56**	**116**	**$-**	**$-**	**$5,312**	**$-**	**$-**	**$-**	**$3,696**	**$4,012**
13.1 management of CH2M portion of consultant		116	0	0	36	0	0	0	40	40
13.2 QA		0	0	0	0	0	0	0	0	0
Labor (hours)	**1063**		128	216	266	42	108	199	64	40
Labor ($)	**$ 155,327.77**		**$ 27,184**	**$ 28,825**	**$ 39,253**	**$ 4,641**	**$ 22,772**	**$ 22,727**	**$ 5,914**	**$ 4,012**
Labor Escalation*	**$ 4,659.83**									
Reimbursables Expenses										
Mileage to/from 20 Meetings located in Shoreline	**$ 358.40**									
Not to Exceed	**$ 160,346.00**									

*Basis of price assumes a 3% Escalation for all labor hours to reflect CH2M labor rate increases effective April 1st, 2018. Assuming a 1 year project duration, and rates good through 3/31/19; CH2M will invoice actual raw rates with OH and profit applied consistent with OH and profit basis used here

Notes/Assumptions:
Task 2 - assuming costs developed for planning purposes only by CH2M; CH2M to provide order of magnitude characterization of costs to inform decision-making; cost characterization will be prepared by CH2M project team; no LOE included for a certified cost estimating professional
Tasks 8 + 12 - Assume CH2M prepares twelve (10) plan sheets: Traffic management plan and details, culvert removal and replacement plan, structural notes, culvert profile and typical section, culvert headwall details (2), culvert sections and details (2 sheets), roadway restoration plan (1 sheets), roadway restoration details
Task 13 - assume a 1 year project duration, and LOE based on an hours per month; will need to revise if duration exceeds 12 months
Tasks 8 + 12 - assume Herrera will prepare TESC plan and TESC details, and that these sheets include site prep; this LOE for CH2M does not assume any participation in developing these plans (there may be coordination, but it would be Herrera looking at CH2M sheets rather than the other way around)
Task 8 - assume there will be no initial/separate meeting with the City to discuss traffic control

Project Cost Estimate
Hidden Lake Dam Removal Final Design
Geotechnical Services
Shoreline, Washington

HWA GEOSCIENCES INC.

HWA Ref: 2017-096-21
Date: 19-Apr-18

Prepared By: JLG/BWT

Proposed Scope of work:

Please refer to the accompanying scope of work updated April 18, 2018

ESTIMATED HWA LABOR:

	PERSONNEL & 2018 HOURLY BILLING RATES								
WORK TASK DESCRIPTION	Principal $275.00	Engr VI $190.00	Engr. IV $145.00	Geol. V $130.00	Geol I $95.00	CAD $125.00	Admin. $75.00	TOTAL HOURS	TOTAL AMOUNT
Task 1 - Geotechnical Explorations and Analysis									
Task 1A - Supplemental Geotechnical Explorations							**Total Task 1A =**	**154**	**$21,850**
Site reconnaissance and mark locates for borings				4	4			8	$900
Coordination for site explorations				2	4			6	$640
Conduct field explorations on slope along proposed culvert alignment				4	14			18	$1,850
Prepare summary logs and assign lab testing				4	4			8	$900
Update geologic profiles		2		2	4	4		12	$1,520
Review exploration data and evaluate suitability of shored and open excavations	2	4	8					14	$2,470
Provide recommendations for maintaining stable slopes of stream channel	2	2	12	4				20	$3,190
Provide estimated bearing capacities for materials at base of culvert		2	8					10	$1,540
Provide estimates of vertical load applied to buried culvert		2	8					10	$1,540
Provide estimates of lateral earth pressures for permanent walls		2	16			2		20	$2,950
Prepare draft geotechnical analysis memorandum	2	6	12	4		2	2	28	$4,350
Task 1B - Geotechnical Support Services for Preliminary Design (Tasks 7 and 8)							**Total Task 1B =**	**32**	**$5,800**
Provide recommendations for protection against erosion at toe of slopes		2	6					8	$1,250
Provide locations/extents of walls needed for slope stability		2	4					6	$960
Provide input for support of utilities during construction	2	6						8	$1,690
Coordinate with design team to provide outline of Special Provisions		2						2	$380
Attend design meetings (up to two)		8						8	$1,520
Task 1C - Geotechnical Support Services for Permitting (Task 10)							**Total Task 1C =**	**12**	**$1,670**
Provide geologic hazard assessment letter for Critical Areas permitting		2		8		2		12	$1,670
Task 1D - Geotechnical Support Services for Final Design (Tasks 11 and 12)							**Total Task 1D =**	**60**	**$10,180**
Evaluate suitability of native materials for reuse		4						4	$760
Provide recommendations for utilities and earthwork		4	4					8	$1,340
Update geotechnical analysis memorandum for final design	2	6	12			2		22	$3,680
Finalize geotechnical analyses memorandum		2	4			2	2	10	$1,360
Review Special Provision sections provided by others (up to 2)		4						4	$760
Review Plans for incorporation of geotechnical recommendations		4						4	$760
Review and respond to comments from City (1 round of comments)		4						4	$760
Attend one design meeting		4						4	$760
Task 13 - Project Management							**l Task 13 =**	**36**	**$5,460**
Project correspondence		12						12	$2,280
Progress reports and invoicing		12					12	24	$3,180
TOTAL LABOR:	10	98	94	32	30	14	16	**294**	**$44,960**

LABORATORY TEST SUMMARY:

Test	Est. No. Tests	Unit Cost	Total Cost
Natural Moisture Content	30	$20	$600
Atterberg Limits	4	$185	$740
Moisture-Density Relationship (Proctor)	1	$220	$220
Grain Size Distribution	4	$100	$400
LABORATORY TOTAL:			**$1,960**

ESTIMATED DIRECT EXPENSES:

Miscellaneous expenses (field supplies, etc.)	$85
Private Utility Locator	$300
Laboratory Testing (see detail to left)	$1,960
TOTAL DIRECT EXPENSES:	**$2,345**

SUBCONTRACTORS:

Drilling Subcontractors	$6,372
Traffic Control	$0
Mark Up to Cover B&O Tax on Subcontractors (5%)	$319
TOTAL SUBCONTRACTORS:	$6,691

PROJECT TOTALS AND SUMMARY:

Total Labor	$44,960
Subcontractors	$6,691
Direct Expenses	$2,345
ESTIMATED PROJECT TOTAL:	**$53,996**

Assumptions:

1. All hours and items are estimated, and may be increased or decreased within the limits of the total budget at the discretion of HWA's project manager. The HWA project manager may also transfer funds allocated for direct costs to professional/technical hours, and vice-versa, as needed to meet the demands of the project.
2. Drill cuttings generated during our explorations will be spread on-site.
3. No traffic control will be required and applicable permits/approval of exploration plan for drilling the proposed borings will be provided by City of Shoreline at no cost to HWA.
4. The scope of work is related solely to geotechnical engineering evaluation of site soil and ground water, as they relate to geotechnical design for the culvert alternatives. Neither identification nor evaluation of contaminants that may be present in the soil or ground water is included in this scope of work.

Project Name: Hidden Lake Dam Removal Project Final Design and Permitting

Contract # tbd **Date:** 4/23/2018

Task/Subtask Name	Cynthia Carlstad	Hours	Labor Cost	Other Direct Costs	**Total $**
Labor Rates	$ 162.00				
Task 3 Outreach and Coordination with Landowners and Other Stakeholders					
3A. Develop Outreach Plan	28	28	$ 4,536.00	$ -	**$ 4,536.00**
3B. Outreach to Lakeside Residents	82	82	$ 13,284.00	$ -	**$ 13,284.00**
Subtotal Hours	**110**	**110**			
Subtotal $	**$ 17,820**		**$ 17,820**	**$ -**	**$ 17,820.00**
Task 7 Preliminary Design for Dam Removal, Stream Restoration, and Trail Improvements					
Review and advisement to engineering team	16	16	$ 2,592.00	$ -	**$ 2,592.00**
				$ -	**$ -**
Subtotal Hours	**16**	**16**			
Subtotal $	**$ 2,592**		**$ 2,592**	**$ -**	**$ 2,592.00**
Task 8 Preliminary Design for Culvert Replacement, Roadway, and Utility Modifications					
Review and advisement to engineering team	8	8	$ 1,296.00	$ -	**$ 1,296.00**
				$ -	**$ -**
Subtotal Hours	**8**	**8**			
Subtotal $	**$ 1,296**		**$ 1,296**	**$ -**	**$ 1,296.00**
Task 9 Grant Funding Support					
Support City in grant funding acquistion	32	32	$ 5,184.00	$ -	**$ 5,184.00**
Subtotal Hours	**32**	**32**			
Subtotal $	**$ 5,184**		**$ 5,184**	**$ -**	**$ 5,184.00**
Task 11 Final Design for Dam Removal, Stream Restoration, and Trail Improvements					
Review and advisement to engineering team	16	16	$ 2,592.00	$ -	**$ 2,592.00**
				$ -	**$ -**
Subtotal Hours	**16**	**16**			
Subtotal $	**$ 2,592**		**$ 2,592**	**$ -**	**$ 2,592.00**
Task 12 Final Design for Culvert Replacement, Roadway, and Utility Modifications					
Review and advisement to engineering team	8	8	$ 1,296.00	$ -	**$ 1,296.00**
				$ -	**$ -**
Subtotal Hours	**8**	**8**			
Subtotal $	**$ 1,296**		**$ 1,296**	**$ -**	**$ 1,296.00**
TOTALS			**$ 30,780.00**	**$ -**	**$ 30,780.00**

Herrera
Hidden Lake Dam
20-Mar-18
Pacific Geomatic Services, Inc. - Surveying and Mapping Services
Survey Support

Direct Salary Cost: Classification	Estimated Hours	Average Rate	Amount	
Principal	12	$140	$1,680	
Professional Land Surveyor I	0	$132	$0	
Professional Land Surveyor II	0	$125	$0	
Sr Comps Technician	30	$105	$3,150	
Scanner Technician	0	$102	$0	
CADD Technician	40	$100	$4,000	
Robotic Survey Crew (one-person)	0	$115	$0	
Survey Party Chief	60	$99	$5,940	
Survey Instrument Operator	60	$77	$4,620	
Survey Technician	0	$67	$0	
Administrative Manager	0	$80	$0	
Administrative Staff	0	$60	$0	
Sub-Total Direct Salary Cost:			$19,390	
Total Direct Salary Cost:			>>>>>>>>>>>	$19,390

Direct Non-Salary Costs:	Units	Unit Price		
Mareine Vessel	1	$380.00	>>>>>>>>>>>>>	$380
GPS Equipment Rental / Per Day	0	$250.00	>>>>>>>>>>>>>	$0
Laser Scanner/Per Hour	0	$135.00	>>>>>>>>>>>>>	$0
Mileage / Per Mile	110	$0.545	>>>>>>>>>>>>>	$59.95
Per Diem / Per Day - Per Person	0	$130.00	>>>>>>>>>>>>>	$0
Reproduction			>>>>>>>>>>>>>	$0
Mail, courier			>>>>>>>>>>>>>	$0
Misc. Expenses			>>>>>>>>>>>>>	$0
Field Survey Materials			>>>>>>>>>>>>>	$0
Sub-total Direct Non-salary Costs:			>>>>>>>>>>>>>	$440
Subconsultants:			>>>>>>>>>>>>>	
Estimated Total Costs			>>>>>>>>>>>>>	**$19,830**

Comments / Assumptions

HERRERA ENVIRONMENTAL CONSULTANTS, INC.

Hidden Lake Dam Removal Project Update Cultural Resources Assessment Report CRC Project No. 1804N			**Task 13** Project Management/ Administration / QC		**Task 10C.1** Background Research		**Task 10C.2** Field Investigations		**Task 10C.3** Updated Cultural Resources Technical Report		**Grand Totals**	
		Labor:	5.0	441.02	3.0	250.99	3.0	250.99	6.0	501.98	**17.0**	**1,444.99**
		Fixed Fee:		42.00		23.90		23.90		47.81		**137.62**
		Other Direct Costs:		0.00		0.00		10.90		0.00		**10.90**
		TOTAL:		483.02		274.90		285.80		549.79		**1,593.51**
CULTURAL RESOURCE CONSULTANTS, INC.												
Labor		***Approved***										
Staff Name	***Classification***	***Rate***	***Hours***	***Cost***	***Hours***	***Cost***	***Hours***	***Cost***	***Hours***	***Cost***	***Hours***	***Cost***
Margaret Berger	Principal Investigator	$ 51.10	2.0	102.20							2.0	102.20
Sonja Kassa	Projects Manager	$ 34.45	1.0	34.45							1.0	34.45
Margaret Berger	Project Archaeologist I	$ 39.84			3.0	119.52	3.0	119.52	6.0	239.04	12.0	478.08
Teresa Peterson	Office Manager	$ 36.68	2.0	73.36							2.0	73.36
												0.00
	Direct Labor Subtotal:		5.0	210.01	3.0	119.52	3.0	119.52	6.0	239.04	17.0	688.09
	Overhead:	**110.00%**		231.01		131.47		131.47		262.94		756.90
	Labor Total:			**441.02**		**250.99**		**250.99**		**501.98**		**1,444.99**
	Fixed Fee (on Direct Labor):	**20.00%**		**42.00**		**23.90**		**23.90**		**47.81**		**137.62**
Other Direct Costs			***Units***	***Cost***	***Units***	***Cost***	***Units***	***Cost***	***Units***	***Cost***	***Units***	***Cost***
	Mileage (effective Jan. 2(	$0.545					20.0	10.90		0.00		10.90
	Photo and Graphic Supp	$0.15										0.00
	other - write in here what they are											0.00
	Other Direct Costs Total:			**0.00**		**0.00**		**10.90**		**0.00**		**10.90**

Hidden Lake Dam Removal Project Final Design and Permitting

5/3/2018

TASK	Alta Planning + Design				Task Hours	Total Task Fee
	Principal-in-Charge Steve Durrant	*Sr Associate* Mary Stewart	*Designer* Raylee McKinley	*Administrative Assistant* Holly Koenig		
*2018 Hourly Rate**	$205	$137	$88	$74		
13a - Stakeholder Outreach and Coordination for Trail Improvements	**12**	**0**	**35**	**3**	**50**	**$5,762**
Presentation Materials (one round of review and revisions)	6		32	3	41	$4,268
Coordination with project team	6		3		9	$1,494
13b - Preliminary Design for Trail Improvements	**24**	**18**	**142**	**4**	**188**	**$20,178**
Project Meetings (3 internal coordination, 1 city meeting)	8		4		12	$1,992
Site Assessment	2		8		10	$1,114
30% Plans, details, cost estimate, outline special provisions	6	12	60	2	80	$8,302
60% Plans, details, cost estimate, special provisions	8	6	70	2	86	$8,770
13c - Final Design for Trail Improvements	**24**	**14**	**134**	**6**	**178**	**$19,074**
Project Meetings and Coordination (3 internal coordination, 1 city meeting)	8		4		12	$1,992
90% Plans, details, cost estimate, special provisions	8	8	80	4	100	$10,072
Final Plans, details, cost estimate, special provisions	8	6	50	2	66	$7,010
Staff Hours	60	32	311	13	416	$45,014
Reimbursable Expenses & Travel						$200
Project Total	$12,300	$4,384	$27,368	$962		**$45,214**

GENERAL NOTES:

* Hours and staff assignments can be adjusted by the consultant as needed to implement the tasks described during the course of the project.

* Hourly rates are for calendar year 2018, and will be adjusted if work is continued into subsequent year(s).

Hidden Lake Dam Removal Project Design and Permitting Phase Schedule Outline, April 2018

	2018							2019												2020			
Task/activity	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr
1. Geotechnical Analysis																							
A. Supplemental Geotechnical Explorations and Analysis																							
B. Geotechnical Support Services for Preliminary Design																							
C. Geotechnical Support Services for Environmental Critical Areas Assessment																							
D. Geotechnical Support Services for Final Design																							
2. Analyze and Select Preferred Culvert Replacement Alternative																							
3. Stakeholder Outreach and Coordination																							
A. Develop Outreach Plan																							
B. Outreach to Lakeside Residents																							
C. Support for Easements (Allowance)																							
D. Support for Coordination with PRCS Board, Park Users, and City Council																							
4. Streamflow Gaging																							
5. Supplemental Survey Allowance																							
6. Hydraulic Modeling																							
7. Preliminary Design for Dam Removal and Stream Restoration																							
8. Preliminary Design for Culvert Replacement																							
9. Grant Funding Support Allowance																							
10. Environmental Permits																							
A. Critical Areas Report and Mitigation Plan																							
B. Environmental Checklist and No Effect Letter																							
C. Permit Applications and Support																							
11. Final Design for Dam Removal and Stream Restoration																							
12. Final Design for Culvert Replacement																							
13. Project Management																							