Council Meeting Date: January 28, 2019 **Agenda Item:** 7(e)

CITY COUNCIL AGENDA ITEM

CITY OF SHORELINE, WASHINGTON

AGENDA TITLE:	Authorizing the City Manager to Execute a Professional Services Contract with BHC Consultants in an Amount Not to Exceed $83,565 for Preliminary Design of the Stormwater Pump Stations and SCADA Improvement Projects
DEPARTMENT:	Public Works
PRESENTED BY:	Tricia Juhnke, City Engineer
ACTION:	____ Ordinance ____ Resolution _X__ Motion ___ Discussion ____ Public Hearing

PROBLEM/ISSUE STATEMENT:

In 2016, the City evaluated the condition and capacity of its stormwater pump stations. The Stormwater Pump Station Condition and Capacity Assessment (Assessment) showed a need to completely replace Pump Station Nos. 26 and 30, and to repair and upgrade the City's other six pump stations. The Assessment also cited the need to provide equipment for remote monitoring and control of the City's pump stations. Three capital projects were subsequently created to address these concerns. This professional services contract will develop preliminary designs for upgrading all City stormwater pump stations and develop a sequencing and prioritization plan for final design and construction.

To perform this preliminary design work, the City requested Statements of Qualifications (SOQs) in August 2018 and received four responses. Each firm's qualifications were evaluated and BHC Consultants was selected as the most qualified firm. The scope of work for BHC is attached to this staff report as Attachment A. Work performed under this scope will provide preliminary design of all improvements, estimate the construction costs, and develop an implementation plan for final design and construction. Upon completion of this work, a contract amendment may be approved to authorize BHC to proceed with final design.

RESOURCE/FINANCIAL IMPACT:

These projects are funded through the Surface Water Capital Fund. The breakdown of project expenses and revenues is below:

EXPENSES

Project Cost	
Staff and Other Direct Expenses	$100,000
BHC Preliminary Design Contract	***$83,565***
Final Design Contract(s)	$392,449
Construction estimate	$640,358

Total Project Cost	**$1,216,372**
REVENUE	
Stormwater Capital Fund	
Pump Station 26 Improvements	$285,965
Pump Station 30 Upgrades	$42,700
Pump Station Miscellaneous Improvements	$757,707
Total Revenue	**$1,086,372**

RECOMMENDATION

Staff recommends that Council authorize the City Manager to execute a professional services contract with BHC Consultants in an amount not to exceed $83,565 for the Stormwater Pump Stations and SCADA Improvements Projects.

Approved By: City Manager ***DT*** City Attorney *JA-T*

BACKGROUND

The City operates and maintains eight (8) stormwater pump stations. The condition and capacity of all eight (8) pump stations was evaluated in the 2016 Stormwater Pump Station Condition and Capacity Assessment (Assessment). The Assessment recommended complete replacement of Pump Station Nos. 26 and 30 and repairs and upgrades to the other six (6) pump stations. The Assessment also noted that, with one exception, the City does not have the ability to remotely monitor or control the pump stations. The Assessment recommended implementation of a Supervisory Control and Data Acquisition (SCADA) system. The 2019-2024 Capital Improvement Plan (2019-2024 CIP), adopted by Ordinance No. 841, includes three capital projects to improve these facilities:

- Pump Station 26 Improvements
- Pump Station 30 Upgrades
- Pump Station Miscellaneous Improvements

DISCUSSION

Though three separate capital projects are identified in the 2019-2024 CIP, staff determined that these projects would best be developed concurrently by a single engineering firm to ensure that key elements of the approach and details of the designs are standardized. The City requested Statements of Qualifications (SOQs) in August 2018 and received four responses. Each firm's qualifications were evaluated and BHC Consultants was selected as the most qualified firm.

The scope of work for BHC is attached to this staff report as Attachment A. Work performed under this scope will provide preliminary design of all improvements, estimate the construction costs, and develop an implementation plan for final design and construction. Upon completion of this work, a contract amendment may be approved to authorize BHC to proceed with final design.

COUNCIL GOALS ADDRESSED

This project supports Council Goal 2: "Improve Shoreline's infrastructure to continue the delivery of highly-valued public service."

RESOURCE/FINANCIAL IMPACT

These projects are funded through the Surface Water Capital Fund as part of the 2019-2024 CIP. An additional $130,000 of un-used 2018 revenue is expected to be carried over to 2019 to cover the projected budget shortfall. The breakdown of project expenses and revenues is below:

EXPENSES

Project Cost

Staff and Other Direct Expenses	$100,000
BHC Preliminary Design Contract	***$83,565***
Final Design Contracts	$392,449

Construction estimate	$640,358
Total Project Cost	**$1,216,372**

REVENUE

Stormwater Capital Fund	
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ATTACHMENTS

Attachment A: BHC Consultants Contract Scope of Services

EXHIBIT A

SCOPE OF SERVICES
CITY OF SHORELINE
STORMWATER PUMP STATION AND SCADA IMPROVEMENTS
PRELIMINARY DESIGN PHASE, BHC Consultants, LLC
November 06, 2018

Statement of Understanding

The City of Shoreline (Shoreline) owns and operates eight stormwater pump stations. In 2016, the City evaluated the condition, capacity, and overall functionality of these pump stations. The evaluation recommended replacement of two pump stations and miscellaneous improvements to the other six stations. The City has also identified the need for off-site monitoring and control of these facilities and plans to develop a utility wide supervisory control and data acquisition (SCADA) system. This work has been grouped into three projects within the City's Capital Improvements Plan (CIP) which together makeup this Project. The three CIP projects are as follows:

1. Pump Station 26 Replacement, including SCADA;
2. Pump Station 30 Replacement, including SCADA; and
3. Pump station improvements and SCADA for the remaining six pump stations (Linden, Palatine, Pan Terra, Pump Station 25, Ronald Bog, and Serpentine).

The fundamental objectives of the project are as follows:

- Improve safety and reliability of the existing pump stations;
- Improve or replace infrastructure to maintain compliance with current electrical codes;
- Replace infrastructure that is at the end of its useful life; and
- Implement a SCADA system for monitoring the stormwater utility infrastructure.

This Scope of Services is based on BHC Consultants, LLC's (BHC's) understanding of Shoreline's needs and objectives for improvements at the eight existing stormwater pump stations.

Project Approach and Scope

The Project will be split into three phases: Preliminary Design, Design and Construction. The following scope of services outlines the tasks associated with the preliminary design phase. A complete scope for the Design Phase Construction Phase will be developed near the completion of the Preliminary Design Phase. The Preliminary Design Phase tasks include the following:

1. Project Management
2. Existing Conditions Review and Data Needs
3. Pump Stations Project Definition
4. SCADA System Project Definition
5. Project Implementation Plan

The scope for each task is defined separately and each task description includes the following elements:

- Description: Summary description of task.
- Receivables: Elements that will be provided by Shoreline.
- Work Tasks: Work activities that will be completed by BHC.

- Deliverables: The finished products that will be delivered to Shoreline.
- Assumptions: Assumptions used to define each Task.
- Meetings: Meetings identified for each Task.

Project Management (Task 100)

Description: Track and monitor the progress of the project and coordinate with the design team, including Shoreline staff.

Receivables:

- Approved Contract

Work Tasks:

1. Project Kickoff and Objectives Workshop: Meet with Shoreline stakeholders to review the project scope, address project roles and responsibilities, and confirm or refine project objectives.
2. Internal Project Kickoff meeting: Project meeting with the design team prior to initiating work to review scope, schedule, budget, staff roles/responsibilities, and objectives for the project.
3. Coordinate with Shoreline: Coordinate with Shoreline Project Manager by phone at approximately two (2) week intervals with monthly meetings at City Hall.
4. Status Reports: Provide monthly invoices with brief status and progress summaries.
5. Project Team Coordination: Coordinate with the project team on a bi-weekly basis to review current and upcoming tasks, deliverables and coordination efforts.
6. Project Schedule: Prepare a baseline project schedule.
7. QA/QC program: Coordinate and facilitate QA/QC reviews of all deliverables to Shoreline.
8. Design and Construction Phase Scope Development: Coordinate with Shoreline to determine scope or work for engineering services related to the subsequent project phases.

Deliverables:

- Project Kickoff and Objectives Workshop notes (PDF).
- Project Schedule (PDF and MS Project)
- Monthly status reports with invoices (PDF).
- Draft and final Design Phase scope and budget (PDF).
- Draft and final Construction Phase scope and budget (PDF).

Assumptions:

- Preliminary Design Phase duration is estimated to be 4 months.
- Formal agendas and notes will not be required for biweekly coordination meetings.

Meetings:

- Project Kickoff and Objectives Workshop at Shoreline City Hall with up to four BHC staff.
- Monthly coordination meetings at Shoreline City Hall, with the BHC project manager only.
- Biweekly internal project team meetings/conference calls with up to five BHC staff.

Existing Conditions Review and Data Needs (Task 210)

Description: Review available data, visit existing facilities, identify additional data needs, and identify potential opportunities for standardization.

Receivables:

- Historical documents, maps and record drawings of the existing systems and facilities.

- Property ownership and easement documentation for each pump station and force main.
- Design information from recently constructed or upgraded Ronald wastewater submersible pump stations.
- Operating records for pumps stations including any reports of failures or resident complaints related to issues with the stations.
- Shoreline drainage system mapping.
- Current Shoreline stormwater comprehensive plan document.
- Available basin study documents and models for areas within Shoreline.
- Consolidated review comments on draft deliverables from Shoreline staff.

Work Tasks:

1. Visit, observe, and document eight existing stormwater pump stations.
2. Visit up to two Ronald wastewater submersible pump stations.
3. Collect and review data provided by Shoreline.
4. Identify additional data needs.
5. Identify potential opportunities for standardization of equipment between Shoreline stormwater and Ronald wastewater pump station facilities.
6. Prepare Existing Conditions Review Memo to summarize the current conditions at each pump station, including documentation from the 2016 Assessment and any updated Shoreline Operations staff feedback or BHC findings.

Deliverables:

- Draft and Final Existing Conditions Review Memo (PDF).

Assumptions:

- Site visits will be conducted over a period of two days (5 stations per day – including Ronald stations).
- Knowledgeable Shoreline and Ronald wastewater operations and maintenance staff, including contractors who have been responsible for maintenance of these systems work will attend site visits and be available for follow up questions.

Meetings:

- Two (2) full day site visits by up to four BHC staff.

Pump Stations Project Definition (Task 220)

Description: Develop and analyze alternatives and define the scope of replacement and improvement work for each of the eight pump stations. This shall include concept-level design documentation for each pump station.

Receivables:

- Drainage system mapping and available models applicable to the PS-26 and PS-30 drainage area and downstream infrastructure (GIS database).
- Available aerial photos or Lidar topographic data to provide site backgrounds for conceptual design figures at each site.
- Consolidated review comments on draft deliverables from Shoreline staff.

Work Tasks:

1. Identify and analyze alternatives for PS-26 replacement, including possible conversion to gravity drainage, or conversion of the adjacent wastewater pump station when that facility is replaced, and recommend scope of replacement work.
2. Identify and analyze alternatives for PS-30 replacement, including possible conversion to gravity drainage, and recommend scope of replacement work.

3. Prepare basic hydrologic models for PS-26 and PS-30 to asses pump capacity needs. Hydrologic modeling will use a simplified model, such as the Department of Ecology Western Washington Hydrology Model (WWHM) or a unit-hydrograph model, such as the Santa Barbara Unit Hydrograph (SBUH).
4. Prepare a preliminary design report to document alternatives, modeling, and preferred replacement and improvements approaches.
5. Prepare a conceptual design figure for each of the eight pump stations.
6. Prepare opinion of probable construction cost (OPCC) for each pump station.
7. Facilitate a pump station replacement and improvement alternatives review workshop with Shoreline staff.

Deliverables:
- Summary tables, figures, agendas and notes for workshop (PDF).
- Draft and Final Preliminary Design Report for Pump Stations (PDF).

Assumptions:
- Pump station evaluations will confirm and build upon the 2016 Condition and Capacity Assessment where conditions have changed or items were not previously identified.
- Existing Shoreline drainage system GIS mapping is adequate for preparing drainage system models for PS-26 and PS-30 areas. No additional GIS mapping is included in this scope.

Meetings:
- Pump Station replacement and improvement alternatives review workshop with up to four BHC staff.

SCADA System Project Definition (Task 230)

Description: Analyze alternatives and identify the preferred SCADA system for the Shoreline stormwater system.

Receivables:
- Information on the existing Ronald wastewater SCADA systems and related infrastructure.
- Shoreline policy regarding data communication and data warehousing security as applicable to the SCADA system.
- Consolidated review comments on draft deliverables from Shoreline staff.

Work Tasks:
1. Evaluate alternatives for integration of SCADA system with emphasis on products available from Mission Communications.
2. Prepare a general implementation strategy based upon the City-selected SCADA approach.
3. Prepare a Preliminary Design Report for the SCADA system which presents a preferred SCADA system implementation approach.

Deliverables:
- Draft and Final Preliminary Design Report for SCADA System (PDF).

Assumptions:
- Both Shoreline Engineering and Operations and Maintenance staff will be involved in the review of the Preliminary Design Report for SCADA System.

Meetings:
- No meetings.

Project Implementation Plan (Task 240)

Description: Prepare a Project Implementation Plan which includes a schedule for preliminary and final designs, bidding, and construction of all pump station replacement, improvement and SCADA system projects.

Receivables:

- Shoreline CIP budget information to identify funding limitations for implementation of the various pump station replacement and improvement projects.
- Consolidated review comments on draft deliverables from Shoreline staff.

Work Tasks:

1. Develop preliminary schedules/durations for construction of the replacement or improvement work at each pump station and identify if there are any inherent benefits in packaging some of the projects together (i.e., following the division of projects included the CIP or an alternative approach).
2. Identify funding availability limitations and potentially beneficial timing for bidding projects.
3. Identify potential land-use or environmental permitting requirements related to the proposed projects. This will include a BHC team member conducting a limited site reconnaissance to identify environmental resources in the project areas and reviewing the proposed work to identify potential impacts to those resources and the associated permitting needs. A follow up meeting with the Shoreline Planning department may also be appropriate to confirm permit requirements or exclusions.
4. Prepare a combined implementation schedule to illustrate up to three alternative approaches to sequencing the permitting, final design, and bidding and construction of the individual projects. Implementation sequencing will consider phased deployment of SCADA equipment to allow for initial configuration and optimization which will guide subsequent procurement/installation efforts.
5. Prepare a Project Implementation Plan document which presents a preferred schedule for completing the projects and supports Shoreline scheduling and budget planning processes.
6. Facilitate a Project Implementation workshop with Shoreline staff.

Deliverables:

- Draft and Final Project Implementation Plan (PDF).

Assumptions:

- The projects will not need to be divided into more than three contract packages.

Meetings:

- Meeting with Shoreline Planning Department with two BHC staff.
- Draft Project Implementation Plan workshop with two BHC staff.

Preliminary Design (Task 310) – Design Phase

Description: This task will be included in the Design Phase scope of work.

Surveying (Task 320) – Design Phase

Description: This task will be included in the Design Phase scope of work.

Final Design (Task 330) – Design Phase

Description: This task will be included in the Design Phase scope of work.

Construction Support (Task 400) – Construction Phase

Description: This task (or series of tasks) will be included in the Construction Phase scope of work.

Project Contingency (Task 500)

Description: This task and budget is reserved as a contingency fund for minor changes in scope which may occur during the work and will be used to facilitate additional work without the need for a contract amendment. Based on discussions with the Shoreline, the contingency has been set at $10,000, which represents approximately 12% of the total budget for the Preliminary Design Phase.

Receivables:

- Written requests for any additional services.
- Written authorization to proceed with additional services from the Shoreline Project Manager.

Work Tasks:

1. Develop scope/budget proposals for additional design services as needed.
2. Prepare contract amendments as needed.
3. Complete additional engineering services as authorized by Shoreline

Deliverables:

- As defined in the additional design services scope/budget.

Assumptions:

- As defined in the additional design services scope/budget.
- Work under Task 500 must be authorized in writing by Shoreline prior to starting work.

Meetings:

- As defined in the additional design services scope/budget.

Budget

The Project budget is $83,500. This budget is based on, and in accordance with, BHC's 2019 billing rates which are calculated as the direct salary rate (including estimated 2019 rate adjustments) multiplied by BHC's 2017 calculated overhead rate (140.03% of direct salary rate) and profit (30% of direct salary rate). Subconsultant rates will be calculated in the same manner. Shoreline agrees to allow BHC and subconsultants to update direct salary rates and overhead rates as needed to reflect current rates (labor rates are typically updated in January of each year, while overhead rate changes may occur later in the year).

Schedule

A baseline schedule will be developed after notice to proceed and before the kickoff meeting. The Project budget is based on and assumes that the efforts associated with this scope of services will be completed within four (4) months from notice to proceed for the Preliminary Design Phase. This schedule shall be equitably adjusted as the project progresses, allowing for changes in scope or for delays beyond BHC's control.