

**HIGHLINE WATER DISTRICT
King County, Washington**

RESOLUTION 20-3-18A

RESOLUTION AUTHORIZING CONSULTING SERVICES AGREEMENT #20-60-04 WITH CAROLLO ENGINEERS, INC. TO COMPLETE PHASE 1 OF THE RISK AND RESILIENCE ASSESSMENT AND EMERGENCY RESPONSE PLAN UPDATE PER THE REQUIREMENTS OF AMERICA'S WATER INFRASTRUCTURE ACT OF 2018

WHEREAS, at the 11/20/19 Board meeting the Commissioners were informed of a federal mandate by the Environmental Protection Agency (EPA) which requires the District to complete by the end of 2020 a Vulnerability and Risk Assessment and update the Emergency Response Plan by June 2021; and

WHEREAS, the District requested a scope of work and budget from Carollo Engineers, Inc., the firm who prepared the District's 2016 Water System Plan, hydraulic model and evaluation of the District's assets, to further assist the District in performing a Risk and Resilience Assessment (RRA) and an update to their Emergency Response Plan (ERP) that meets the requirements of America's Water Infrastructure Act (AWIA) of 2018; and

WHEREAS, the tasks for the AWIA Phase 1 Risk and Resilience Assessment are as follows:

- Task 1 – Project Management and Progress Meetings
- Task 2 – Data Collection and Site Visits
- Task 3 – Risk and Resilience Assessment
- Task 4 – AWWA G430 Standard Analysis
- Task 5 – EPA Compliance Documentation

WHEREAS, the District's Engineering & Operations Manager and General Manager have reviewed the scope of work and budget submitted by Carollo Engineers, Inc. and recommend approval of this resolution.

NOW, THEREFORE, BE IT RESOLVED:

1. The General Manager or designee is authorized to enter into Contract #20-60-04 with Carollo Engineers, Inc. (Attachment 1, incorporated herein by this reference), for a not-to-exceed amount of \$149,993.00.
2. The General Manager and/or the District's legal counsel are authorized to make minor changes to the contract if required.

**HIGHLINE WATER DISTRICT
King County, Washington**

RESOLUTION 20-3-18A

ADOPTED BY THE BOARD OF COMMISSIONERS of Highline Water District, King County, Washington, at an open public meeting held this **18th** day of **March 2020**.

BOARD OF COMMISSIONERS



Vince Koester, President



Todd Fultz, Secretary



Polly Dalgie, Commissioner



Daniel Johnson, Commissioner



Kathleen Quong-Vermeire, Commissioner

HIGHLINE WATER DISTRICT

ATTACHMENT 1

AGREEMENT FOR CONSULTING SERVICES

THIS AGREEMENT is entered into between **HIGHLINE WATER DISTRICT**, King County, Washington, a municipal corporation and special purpose district organized and existing under the laws of the State of Washington (hereafter referred to as "the District"), and **Carollo Engineers, Inc.**, Lar (hereafter referred to as "the Consultant") in consideration of the mutual benefits, terms and conditions hereinafter specified.

1. Scope of Consulting Services. Consultant shall provide consulting services to the District under the terms of this Agreement for the following Project: **AWIA Phase I: Risk and Resilience Assessment** ("Project"). The scope of services is more fully described on **Exhibit A** attached hereto and incorporated herein by this reference.
2. Compensation and Payment. District shall pay Consultant for the time and materials devoted to the Project as consideration for the performance of the services set forth on **Exhibit A**, not to exceed the amount of One Hundred Forty Nine Thousand Nine Hundred Ninty Three and 00/100 Dollars (**\$149,993.00**). Such compensation shall be payable in the following manner:
 - a. Consultant shall submit a detailed monthly billing for all services provided describing in reasonable and understandable detail the services rendered, fees charged and expenses incurred by Consultant during the previous month in accordance with a schedule of rates and charges set forth on **Exhibit B**, including fees and expenses for additional services authorized by District as provided herein. District shall pay the invoice within sixty (60) days of receipt, except as to any disputed amounts.
 - b. Upon District's failure to pay within sixty (60) days of receipt the undisputed amount set forth in any monthly billing submitted to District by Consultant, such unpaid balance will bear interest at the rate of 1% per month until the amount of such unpaid balance, plus interest thereon shall be paid in full.
 - c. Consultant shall maintain accounts and records of fees billed and expenses incurred as described in this Section 2 in accordance with generally accepted accounting principles, and agrees to make such accounts, records and supporting documentation available to the District and its authorized representatives for inspection at mutually convenient times, both during the Project work and for three (3) years following the final payment for services rendered or termination of the Consultant's services under this Agreement.
3. Schedule of Work. Consultant shall commence the performance of its services under this Agreement upon receipt of notice to proceed from the District to do so and shall provide the services in accordance with the schedule on **Exhibit A**, subject to delays for causes beyond the reasonable control of Consultant or as otherwise agreed to by District.
4. Subcontractors. Consultant shall not subcontract or assign any portion of the work covered by this Agreement without the prior written approval of the District, such consent to be given in District's sole discretion. Subject to the provisions of the preceding sentence, this Agreement shall be binding upon and inure to the benefit of the respective successors and assigns of the parties hereto.

5. Independent Contractor. Consultant is an independent contractor and not an employee of the District. Consultant shall be responsible in full for payment of its employees, including insurance and deductions, and for payment to any subcontractors. No personnel employed by Consultant shall acquire any rights or status regarding the District. All of the services required hereunder shall be performed by Consultant or under its direction, and all personnel engaged therein shall be fully qualified under applicable state, federal and local laws to undertake the work performed by them.
6. Changes in Scope of Services. The District may require changes or modifications in the scope of services to be performed under this Agreement. Any such changes or modifications shall be in writing and signed by the parties to this Agreement. The compensation for the changes or modifications, whether a decrease or increase, shall be on the same terms and conditions as set forth in Paragraph 2 above or in a manner otherwise mutually agreed to by the parties.
7. Insurance. Consultant shall maintain throughout the performance of this Agreement the following types and amounts of insurance.
 - a. Comprehensive vehicle liability insurance covering personal injury and property damage claims arising from the use of motor vehicles with combined single limits of Two Million Dollars (\$2,000,000).
 - b. Commercial General Liability Insurance written on an occurrence basis with limits no less than Two Million Dollars (\$2,000,000) combined single limit per occurrence and Two Million Dollars (\$2,000,000) aggregate for personal injury, bodily injury and property damage. Coverage shall include, but not be limited to: blanket contractual; products/completed operations; broad form property damage; explosion, collapse and underground (XCU) if applicable; and employer's liability; and
 - c. Professional liability insurance (Errors and Omissions insurance) with limits no less than Two Million Dollars (\$2,000,000).

For general liability and vehicle liability policies, the insurance policies shall: (1) state that coverage shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability; (2) be primary to any insurance maintained by the District, except as respects losses attributable to the sole negligence of the District; and (3) shall state that the District will be given 45 days prior written notice of any cancellation, suspension, non-renewal or reduction in coverage.

The District shall be named as an additional insured on the Commercial General Liability Insurance policy with regard to work and services performed by or on behalf of the Consultant and a copy of the endorsement naming the District as an additional insured shall be attached to the Certificate of Insurance.

Before commencing work and services, Consultant shall provide to the District a Certificate of Insurance and required endorsements evidencing the insurance described above. The District reserves the right to request and receive a certified copy of all required insurance policies.

The above insurance limits do not constitute a limit on Consultant's liability to the District. Any payment of deductible or self-insurance retention shall be the sole responsibility of Consultant.

Consultant shall be solely responsible for the safety of its employees and subcontractors at the Project work site, and shall comply with all applicable federal, state and local statutes, regulations and ordinances regarding safety.

8. Indemnification. Consultant shall defend, indemnify and hold harmless the District, its elected and appointed officers, employees and agents and volunteers from and against all claims, injuries, damages, liabilities, losses of suits, including attorneys' fees and costs, to the extent caused by Consultant's negligent performance under this Agreement, except to the extent any injuries or damages caused by the negligence of the District. For the purposes of this indemnification, Consultant specifically and expressly waives any immunity granted under the Washington Industrial Insurance Act, Title 51 RCW. This waiver has been mutually negotiated and agreed to by the parties. If a court of competent jurisdiction determines that this contract is subject to RCW 4.24.115, Consultant's obligation to defend, indemnify and hold harmless the District, its officers, employees, agents and volunteers shall be limited to the extent of Consultant's negligence. The provisions of this Section shall survive the expiration of termination of this Agreement.
9. Confidentiality. Given the sensitive nature of the services being provided by Consultant, all communications and documents, including drafts, preliminary drawings, plans, notes, or photographs that are provided to Consultant in connection with this Agreement or that result from the services provided by Consultant under this Agreement, shall be kept confidential by Consultant unless the District authorizes in writing the release of the information or documents. Consultant agrees to treat all confidential information in the same manner as it treats its own confidential information, but in no circumstances shall Consultant use less than reasonable care to protect the confidential information from disclosure. To the extent the District approves of Consultant's use of sub-consultants for this Project, Consultant shall include a similar confidentiality provision in its agreement with any sub-consultants retained to provide services on this Project. Sub-consultants' access to confidential or sensitive documents shall be strictly limited to a need to know basis.
10. Ownership of Documents. At the conclusion of the Project or upon termination of this Agreement, Consultant agrees to return to District all documents, reports, logs, drawings, photographs and other written or graphic material, however produced, received from District and/or used by Consultant in performance of its services hereunder (collectively referred to as "Project Materials"). Subject to the confidentiality provisions contained in the preceding paragraph, Consultant may retain a copy of the final report(s) prepared by the Consultant under this Agreement; provided that all electronic copies of the final report(s) are stored in a restricted access project folder. All electronic copies of Project Materials not stored in the noted restricted access project folder will be deleted, destroyed or permanently removed from Consultant's other computer systems, including any stand alone or laptop computers. Any hard copy of the final report(s) retained by Consultant shall be marked as "confidential" and stored in a location where such information is not generally accessible to Consultant's staff not directly involved in the Project.. All documents, logs, drawings, specifications, designs, mylars, surveys, survey data, reports and other work product (collectively referred to as "Work Product") produced by Consultant in connection with the services rendered under this Agreement shall be owned by District. District shall own all copyrights to such Work Product and Consultant agrees to assign all ownership rights to such Work Product to the District. Reuse of any such Work Product by the District for other than a specific project or modification in use by the District of any of the Work Product without the Consultant's prior written approval shall be at the District's sole risk. To the extent the District approves of Consultant's use of sub-consultants for this Project, Consultant shall include a similar ownership of documents

provision in its agreement with any sub-consultants retained to provide services on this Project.

11. Standard of Care. Consultant warrants that its services shall be performed with the level of care, skill and competence of the consulting profession in accordance with the standard for professional services at the time the services are rendered.
12. Right of Entry. District shall provide for the right of entry of Consultant and its subcontractors and all necessary equipment in order to complete the services under this Agreement.
13. Compliance with Codes and Standards. Consultant's Professional Services shall be consistent with the standard of care and shall incorporate those publicly known federal, state and local laws, regulations, codes and standards that are applicable at the time Consultant renders its services.
14. Discovery of Hazardous Materials. The Parties recognize that unanticipated hazardous materials or suspected hazardous materials may be discovered on District's property or on property included as part of the site of work but not owned by District. The discovery of unanticipated hazardous materials may delay the Consultant's provision of the services required herein. In that event, the parties may extend the Contract Completion Date by mutual agreement.
15. Termination. This Agreement may be terminated by either Party upon five (5) days written notice for any reason. In the event of termination, Consultant shall be entitled to compensation for all services performed and costs incurred through and including the date of termination, except as to any disputed amounts.
16. General Provisions.
 - a. Notices. Any notice or demand desired or required to be given under this Agreement shall be in writing and deemed given when personally delivered, sent by facsimile machine, or deposited in the United States Mail (or with an express courier), postage prepaid, sent certified or registered mail, and addressed to the parties as set forth below or to such other address as either Party shall have previously designated by such a notice:

<u>To the District:</u> Highline Water District 23828 30th Ave. S. Kent, WA 98032 Attn: General Manager	<u>To the Consultant:</u> Carollo Engineers, Inc. 1218 Third Ave, Suite 1600 Seattle, WA 98101 Attn: Lara R. Kammereck, PE, PMP VP, Senior Project Manager
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- b. Entire Agreement. This Agreement and its exhibit attachments contain the entire understanding between the District and Consultant relating to the consulting services which are the subject of this Agreement. This Agreement merges all prior discussions, negotiations, letters of understanding or other promises whether oral or in writing. Subsequent modification or amendment of this Agreement shall be in writing and signed by the parties to this Agreement.

- c. Waiver. Waiver of any breach or default hereunder shall not constitute a continuing waiver or a waiver of any subsequent breach either of the same or of another provision of this Agreement.
- d. No Third Party Rights. This Agreement is made only for the benefit of the District and Consultant and successors in interest and no third party or person shall have any rights hereunder whether by agency, as a third party beneficiary, or otherwise.
- e. Jurisdiction/Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Washington. Any suit to enforce or relating to this Agreement shall be brought in King County Superior Court, King County, Washington.
- f. Severability. If any term, covenant or condition of this Agreement is held by a court of competent jurisdiction to be invalid, the remainder of this Agreement shall remain in effect.
- g. Effective Date. The effective date of this Agreement shall be the date that this Agreement has been signed by authorized representatives of both Parties hereto ("Effective Date").

Carollo Engineers, Inc.
("CONSULTANT")

By _____
Typed Name Lara R. Kammereck, PE, PMP
Its VP, Senior Project Manager
Dated _____

By _____
Typed Name Brian R. Matson, PE
Its Senior Vice President
Dated _____

HIGHLINE WATER DISTRICT
("DISTRICT")

By _____
Typed Name Matt Everett
Its General Manager
Dated _____

HIGHLINE WATER DISTRICT

**AMERICA'S WATER INFRASTRUCTURE ACT OF 2018 PHASE I:
RISK AND RESILIENCE ASSESSMENT**

SCOPE OF SERVICES

DRAFT: March 2, 2020

INTRODUCTION

The following Scope of Services defines Phase I of a project to help the Highline Water District (District) comply with the requirements of the America's Water Infrastructure Act (AWIA) of 2018. It consists of performing a risk and resilience assessment (RRA) that meets the requirements of AWIA. Phase II of this project will be scoped and delivered after Phase I is complete. Phase II consists of updating the District's emergency response plan (ERP) to reflect the results of the RRA and meet AWIA requirements.

The following tasks under this Scope of Services have been prepared based on Carollo Engineers' (Carollo) current understanding of the proposed project and discussions with District staff.

BACKGROUND

The District serves a population of approximately 75,000 within seven different cities as well as unincorporated King County. Its water supplies include four local wells and interties with Seattle Public Utilities' Cedar River Pipeline. Average day demands total approximately 6.5 mgd with maximum day demands of 11 mgd.

The District's water system has two main pressure zones that in turn supply ten smaller pressure zones through booster pumps and pressure reducing valves. Nine reservoirs provide storage and maintain the hydraulic grade line of the main pressure zones.

Under this project, Carollo and its subconsultant, Enterprise Protection Associates, (referred to as the Carollo Team) will complete an RRA and ERP update for the District. This effort is being undertaken to assist the District in complying with the requirements of the AWIA 2018. Only Phase I – RRA is scoped here. Phase II consists of updating the ERP and will be scoped when Phase I is complete.

The AWIA 2018 emphasizes a holistic approach to risk and emergency planning that evaluates all aspects of a water system to provide resilience for all-hazards, including malevolent acts and natural hazards. As such, this assessment shall consider the physical security, operational procedures, water system configuration, cybersecurity, and other relevant factors that contribute to the overall reliability and resilience of the District and its water system assets.

Conducting a comprehensive resilience assessment and integrating the results into an updated ERP is critical to ensuring a safe and reliable drinking water supply to the communities served by the District. Ultimately, the U.S. Environmental Protection Agency (EPA) will require a certification letter from the District stating that your comprehensive RRA and ERP are complete by December 2020 and June 2021, respectively. The work completed under this scope will provide the District with the documentation required to meet these deadlines.

The RRA will build upon the District's existing planning documents as well as information obtained from site visits and collaboration with utility management, operations, maintenance, information technology (IT), and emergency response personnel. The intent is to update and build upon previously identified vulnerabilities, conduct additional analyses to identify other vulnerabilities, and develop updated mitigation and resilience strategies.

TASKS

The effort encompasses several tasks, which are detailed in the following section:

- Task 1 – Project Management and Progress Meetings.
- Task 2 – Data Collection and Site Visits.
- Task 3 – Risk and Resilience Assessment.
- Task 4 - AWWA G430 Standard Analysis.
- Task 5 – Generate Documentation for EPA to Support Compliance.

MEETINGS AND WORKSHOPS

The Carollo Team recognizes the need to collaborate with the District's staff in the execution and development of the RRA. Our previous experience has proven that the process of creating and implementing a plan is often just as important and beneficial to the organization as the actual plan itself. The District's staff and other critical project stakeholders will need to be heavily involved throughout the project to give guidance, share expertise, provide historical perspectives, validate assumptions, and confirm that the direction of the assessment is consistent with the long-term direction of the utility.

Workshops will be held at the District office and key Carollo Team members will attend in-person. Meetings will be conducted via teleconference, Skype or Webex. The proposed meetings and workshops listed here are described in detail in the Scope of Services Section below.

- Monthly Progress Meetings.
- Site Visits.
- Stakeholder Meetings.
- Workshop 1 – Kickoff/Visioning/Facility Prioritization Workshop.
- Workshop 2 – Asset Characterization.
- Workshop 3 – Threat Characterization/Consequence Evaluation.

- Workshop 4 – Characterization of Dependency, Proximity, and Natural Hazards.
- Workshop 5 – Risk and Resilience Management Validation.
- Meeting 1 – AWWA G430 Assessment Review Meeting.
- District Staff Training.

DELIVERABLES

The deliverables for this effort include the following.

- Monthly progress reports (electronic).
- Meeting/workshop agendas, materials, and minutes.
- Data Request Log.
- Draft and Final RRA Report.
- RRA Comment Log.
- Staff Training agenda, materials, and minutes.
- Draft and Final AWWA G430 Assessment Technical Memorandum.
- AWWA G430 Assessment Comment Log.
- RRA Compliance Letter.

SCOPE OF SERVICES

TASK 1: PROJECT MANAGEMENT AND PROGRESS MEETINGS

Carollo will conduct project management activities, and coordinate project meetings and workshops, to support the successful delivery of the water system RRA for the District. A variety of meetings and workshops will be required as part of the project. Initial efforts will focus on site visits and meetings with key stakeholders (i.e. utility management, operations, IT, etc.). As the project progresses, the focus will transition to project workshops and draft document review. Carollo will coordinate meetings, prepare agendas, and conduct the meetings, as well as document the decisions and action items. Note that quantity, duration, and location of the proposed meetings are subject to change based on the project progress and other ancillary factors.

1.1. Project Administration and Management

This task includes project management activities, submittal of monthly progress reports, and overall coordination and assistance. In addition to production and implementation of the project plan and management of the project schedule and budget, this task also includes preparation and submittal of monthly progress reports showing current project status and identifying key issues or elements of the project that will need to be addressed in the proceeding weeks. The monthly progress reports will be submitted electronically via email with invoice.

1.2. Workshop 1 – Kickoff/Visioning/Facility Prioritization

Carollo will facilitate a Project Kickoff/Visioning Workshop (Workshop 1) with District staff. The workshop will be designed to accomplish several objectives:

- Ensure the entire team has a thorough understanding of the key project goals and performance expectations, as well as the AWIA requirements.
- Confirm the schedule milestones and any required coordination with other on-going and/or future planning, design or construction efforts.
- Review the District’s existing security, emergency response, and emergency/disaster planning approaches, and discuss desired enhancements related to the water system.
- Discuss each of the existing system assets to better understand the specific materials, processes, information, and equipment that are to be protected and the operational priorities of each.
- Present the methodology for the efforts to be completed for the remainder of the project.
- Identify key project stakeholders.

1.3. Progress Meetings

Carollo will conduct progress meetings on a periodic basis (e.g., approximately monthly, depending on other scheduled workshops/meetings) to discuss the project status including plan development, required decisions, upcoming activities, budget status, and overall project schedule. General progress meetings will typically be conducted via teleconference, Skype or Webex, unless the meeting can be coordinated with another on-site project related meeting to promote efficiency. Up to three (3) meetings are planned as part of this task.

Task 1 Deliverables

- Monthly progress reports (electronic).
- Workshop 1 and progress meeting agendas, materials, and minutes (electronic PDF).

TASK 2: DATA COLLECTION AND SITE VISITS

2.1. Data Collection

Carollo will submit an initial data request in advance of the project kickoff meeting. The request will include all available documentation related to security, emergency, and disaster response planning, including, but not limited to:

- Vulnerability Assessments.
- Threat Assessments.
- Hazard Identification and Risk Assessment (HIRA) Plans.
- Communications System Master Plan.

- Emergency Response Plans.
- Cyber Security Plans.
- Business Continuity Plans.
- Contracts.
- Security Policy.
- Documented Procedures.
- Utility and/or Departmental requirements.
- Existing operational documentation.
- Existing master planning or resilience-related documentation.

The initial data request will be discussed during the kickoff meeting, and will likely lead to follow-up discussions and additional data requests. This information will be critical to promoting efficiency and facilitating discussion with key project stakeholders.

2.2. Site Visits

Carollo will visit various facilities/assets that are part of the water system. The intent is to focus the efforts on critical assets, as identified through initial workshops, and conduct visits with utility personnel to better understand the assets being protected, their operational value, and any anecdotal information that may assist in the completion of the subsequent planning efforts. Carollo will document the results of each visit (including site photos) for use in the subsequent assessment effort. Carollo will work with the District to develop a site visit schedule as part of the kickoff workshop and goal setting activities outlined in Task 1.2. Carollo will attempt to schedule the site visits in conjunction with Workshop 1 to promote efficiency.

2.3. Stakeholder Meetings

As part of the kick-off meeting, the Carollo Team will work with the District to schedule up to two (2) subsequent meetings with other key project stakeholders that may have critical input into the recommendations developed as part of the planning effort. These groups may include operations, IT, local law enforcement/first responders, and U.S. Department of Homeland Security (DHS). In addition, the team may facilitate meetings with elements of the critical dependencies as required to characterize and quantify the associated risks. Carollo will distribute an agenda prior to each meeting and will provide meeting minutes to all participants within 48 hours of the meeting. Meeting minutes will not divulge sensitive information about the District. Carollo will attempt to schedule these meetings in conjunction with other project meetings or site visits or hold conference calls to promote efficiency.

Task 2 Deliverables

- Data request log (electronic PDF).
- Stakeholder meeting agendas, materials, and minutes (electronic PDF).

TASK 3: RISK AND RESILIENCE ASSESSMENT

As part of this task, Carollo will conduct an RRA of the District's water system. The efforts will also include determination of potential threats and consequences which will serve as the baseline for the update of the existing ERP. The assessment will cover critical water system assets, including people, equipment, systems, materials, supplies, and records. AWWA has recently issued updated draft guidelines that provide some additional information and direction on the threat basis to be used in the evaluations. The RRA for the District will be based on this currently available information/direction. Per our conversations with EPA, any subsequent modifications to the guidelines would not require updates to previously completed RRAs.

A prioritization of threats, assets, and vulnerabilities of the system will also be included. The information gathered as part of Tasks 1 and 2 will serve as the baseline for the evaluation and any subsequent recommendations. The following infrastructure, as well as other assets determined by the District, will be considered as part of the evaluation.

- Four (4) groundwater wells and affiliated pumps.
- Three (3) water treatment plants.
- Seven (7) booster pumping stations.
- Nine (9) storage tanks/reservoirs.
- Water system piping (including interties and PRVs).

The general methodology for the effort is outlined in the following series of subtasks—each serving an important role in identifying the existing threat, existing level of security/resilience, desired level of security/resilience and the potential gap between the two. The intent of the effort will be to provide the District with the information needed to comply with the American Water Works Association (AWWA) J100, G300 and G430 requirements, as well as other applicable industry accepted standards provided by the American National Standards Institute (ANSI) and AWWA. Note that these documents are currently identified by AWWA as the best available standards for compliance with the AWIA requirements. If future updates to AWIA modify this requirement (not anticipated), additional scope or fee may be required.

3.1. Characterize Assets

The goal of this task is to confirm and characterize the District's water system assets. In addition to the system assets listed above, the team will work with the District to identify any changes that may occur in the system over the near term, which may impact the current operation or the ultimate recommendations of the plan. These changes may be associated with a new or modified asset, or may reflect changes in the operational approach which could impact the criticality of an asset.

AWIA focuses on a system's most critical assets. As such, a majority of the effort associated with this task is focused on an evaluation regarding which facilities are considered critical. These determinations

are based on the consequences that losing a facility or asset would have on the primary mission and functions of the organization. The intent of this effort is to determine which assets, if compromised by malevolent or natural hazards would result in:

- Lengthy or widespread inability to complete the organization’s mission.
- Injuries, fatalities, or detrimental economic impacts to the District or associated communities.

The pairwise comparison evaluation will be completed in conjunction with a collaborative workshop (Workshop 2) with District staff, where the Carollo Team will evaluate the potential human, financial and economic impacts associated with the loss of each asset. The ultimate rankings, along with input from District staff will result in a prioritized list of assets, which will identify which facilities will be characterized as critical infrastructure and included in subsequent evaluations.

Throughout the process, the team will leverage and verify existing information including any previous Vulnerability Assessments, Risk Evaluations, ERPs, and other security related information/documentation.

Significant input would be expected from District personnel, both operators, IT, finance and management, in order to complete this task. Carollo will facilitate one (1) workshop (Workshop 2) to obtain necessary input from stakeholders.

3.2. Characterize Threats

This task facilitates decision making regarding what threats and hazards to consider and specifies these threats/hazards in enough detail to drive the risk/resilience analysis. Evaluations will be based on an all-hazards approach, which includes internal and external threats, such as disgruntled employees or employees engaged in criminal activities, cyber and financial related threats, as well as potential threats associated with natural disasters. The AWWA J100 methodology will be employed to define threat-asset pairs, which are reference threats paired together with system assets. Coordination required to support this evaluation will be completed in conjunction with Workshop 3.

3.3. Identify and Analyze Consequences

The consequence analysis effort estimates the losses that result from each specific threat or hazard when exposed to each critical asset. The intent of this task is to estimate the human losses, economic losses, and service denials associated with each threat-asset pair identified for analysis in the previous task.

To accomplish this, the process involves making a worst reasonable case assumption—i.e., what is the worst number of fatalities or injuries that could occur from a reasonable threat, based on a particular threat-asset pair? What is the potential financial loss for that pair? What could the service denial be? The answers are provided via “Consequence Bins,” which are frequently estimates that must be

determined through discussion with local personnel. Coordination required to support this evaluation will be completed in conjunction with Workshop 3.

3.4. Vulnerability Analysis

This task provides an estimation of the likelihood that a threat or hazard, given it occurs, will cause the consequences estimated in the previous task. The vulnerability analysis will include both malevolent threats and natural hazards in the likelihood estimations. The analysis is conducted for each threat-asset pair, by asking the following questions:

- What existing security and resilience features are available?
- What gaps exist in the existing security or resilience profile that could be exploited?
- What weaknesses within the system would result in system failure because of a natural hazard?
- What is the expected probability or frequency of these consequences?

Since the methodology above considers only the most critical sites, a series of sub-steps are necessary for each high-priority site. This task will consider the following sub-steps:

- Review of existing security and resilience profile, per site.
- Analysis of the vulnerabilities.
- Documentation of the methodology and results.
- Recording of the vulnerability estimates as point estimates.

Coordination required to support this evaluation will be completed in conjunction with Workshop 4.

3.5. Analyze Threats

As part of this task, the Carollo Team will estimate the likelihood that a specific threat or hazard will occur for a given asset. This analysis will consider the historical frequency of both natural and man-made hazards. For natural hazards, the frequency can be estimated with readily available data from annexes to the AWWA J100 documentation. The malevolent hazard information is collected using several available measures, one of which represents a best estimate from a knowledgeable and qualified team (i.e., the Carollo Team working in concert with District staff). Coordination required to support this evaluation will be completed in conjunction with Workshop 4.

3.6. Risk and Resilience Analysis

This task includes a calculation of both risk and resilience for specific threat-asset pairs. The Carollo Team will use formulas taken from the AWWA J100 standard to establish a quantifiable level of risk and resilience for each asset pair. The outcome of this task is a numerical aggregation of risk and resilience

factors for each threat-asset pair, which assumes that all the threats and hazards have been included and are mutually exclusive (i.e., no two will happen in the same year).

Note that this task also includes the risk to, and resilience of:

- Current monitoring practices of the system.
- Operations and maintenance of the system.
- Overall financial infrastructure.
- Source water assets.
- Pipes, constructed conveyances, and other distribution system assets characterized as part of Task 3.1.

Coordination required to support this evaluation will be completed in conjunction with Workshop 4.

3.7. Risk and Resilience Management

The Carollo Team will use the information from previous tasks and work closely with the District to determine opportunities to reduce risks and enhance system resilience. This task will include a workshop (Workshop 5) and discussions with stakeholders to:

- Decide whether the estimated levels of risk and resilience are acceptable.
- Define countermeasures, consequence mitigation and resilience options.
- Evaluate options for net benefits and cost-benefit ratios.
- Select specific options (based on previous prioritization efforts) for planning and budgeting.

This task provides an overall management approach to the process that involves recalculating risk with a reduced number of vulnerability quantifiers based on the mitigation options selected. Coordination required to support this evaluation will be completed in conjunction with Workshop 5.

3.8. Staff Training

Before completing the RRA, the Carollo Team will provide training to support knowledge transfer to District staff on the specifics of the assessment and the role of the stakeholders in completing the project. This training is assumed to be completed in two sessions over one (1) day.

3.9. Risk and Resilience Assessment Report

Using the information generated during the previous tasks, the Carollo Team will develop a Risk and Resilience Report. The Risk and Resilience Report is anticipated to have the following chapters:

EXECUTIVE SUMMARY	Summarizes the key points of all RRA sections
INTRODUCTION	Outlines the District's RRA goals and the planning methodology used for the risk and resilience assessment.
CHARACTERIZE ASSETS	Includes initial screening and asset prioritization for each water system asset based on security and operational risks.
CHARACTERIZE THREATS	Summarizes the threat characteristics of an attack or event, including goals, objectives, attack vectors, tactics, etc. for each critical asset. The profile will take an all-hazards approach, assessing internal, external, and natural hazards.
IDENTIFY AND ANALYZE CONSEQUENCES	Estimates the human and economic losses and service denial associated with each threat-asset pair identified in the threat characterization chapter.
VULNERABILITY ANALYSIS	Presents an analysis of existing security and resilience features, any gaps that exist in the security profile, weaknesses in the system, and probability of expected consequences.
ANALYZE THREATS	Provides an estimate of the likelihood each specific threat or hazard will occur for a given asset. This is the last element of the risk and resilience piece that drives the methodology.
RISK AND RESILIENCE ANALYSIS	Provides steps for calculating both risk and resilience for specific threat-asset pairs.
RISK AND RESILIENCE MANAGEMENT	Provides an overview of the management approach to the assessment process, which involves recalculating risk with a reduced number of vulnerability quantifiers based on the mitigation options selected.

3.10. Meetings/Workshops

Facilitate, prepare an agenda, prepare presentation materials, and document discussions, including action items and decisions, in meeting minutes for the following Workshops:

- a) Workshop 2 – Asset Characterization: determine critical assets via prioritization using pairwise comparisons based on potential human, financial and economic impacts associated with the loss of each asset.
- b) Workshop 3 – Threat Characterization/Consequence Evaluation: Create threat/asset matrix, evaluate consequences, and discuss vulnerability approaches.
- c) Workshop 4 – Risk and Resilience Analysis: Present findings of risk and resilience analysis information and confirm results with District.
- d) Workshop 5 – Risk and Resilience Management Validation: Determine opportunities to reduce risks and enhance system resilience.

Task 3 Deliverables

- Workshops 2-5 agendas, materials, and minutes.

- Staff Training agenda, materials, and minutes.
- Draft RRA Report (1 electronic PDF).
- RRA Report comment log.
- Final RRA Report with Appendices (1 electronic PDF).

TASK 4: AWWA G430 STANDARD ANALYSIS

The AWWA G430 standard outlines the minimum requirements for a security program promoting protection of employees, public safety, health, and confidence. The intent of this task is to step through each of the fourteen components of the G430 standard and provide a compliance narrative based on the previous tasks as well as an evaluation of existing the District practices. A great deal of the information required for the G430 analysis is organizational material. Consequently, this evaluation will be highly collaborative, involving a variety of District staff. While this evaluation is required for compliance with AWIA, the information will be presented as part of a stand-alone technical memorandum, which will be included as an addendum to the AWIA RRA. This approach will allow the District to more easily distribute the less sensitive G430 memo to a wider audience, while maintaining limited access to the overall AWIA documents.

4.1. Evaluation of Existing District Practices

The Carollo Team will obtain a majority of the required information associated with existing practices from prior tasks, but will likely require additional information related to the District’s practices across the organization. The intent of this task is to fill in any gaps from the previous tasks and create a better picture of the District’s AWWA G340 compliance.

4.2. Compliance Narratives

The Carollo Team will evaluate each of the fourteen requirements under G340 and provide compliance narratives based on the previous RRA assessment task. The narratives will be compiled into a tech memo and will be submitted to the District for review.

4.3. Meetings/Workshops

- a) Meeting 1 – AWWA G430 Assessment Review Meeting: review the draft memo and receive comments. Comments will be incorporated into the final AWWA G430 Assessment Tech Memo.

Task 4 Deliverables

- AWWA G430 Assessment Review Meeting agenda, materials, and minutes, and comment log (1 electronic PDF for each).
- Draft AWWA G430 Assessment Tech Memo (1 electronic PDF).
- Final AWWA G430 Assessment Tech Memo (to be added as an appendix to the RRA Report).

TASK 5: EPA COMPLIANCE DOCUMENTATION

5.1. Generate Documentation for EPA to Support Compliance

The intent of this task is to develop the documentation for the District to meet the requirements for compliance with the RRA component of AWIA 2018. The letter confirming RRA compliance shall be completed prior to the AWIA completion deadline. However, Carollo recommends that the District postpone submitting the RRA compliance letter until the December 31, 2020 deadline as the 5-year update clock starts upon submittal. The letter will be provided to the District for approval and comment prior to finalization.

Task 5 Deliverables

- RRA compliance letter for submittal to EPA (electronic PDF).

SCHEDULE

The scope of services described herein is anticipated to be completed within approximately 250 calendar days from receipt of a Purchase Order or notice to proceed. This is inclusive of 2-week District review periods for each project submittal outlined in the above scope of services, submittal of the Final RRA Report and EPA compliance letter by December 1, 2020.

GENERAL PROJECT ASSUMPTIONS

The scope and fee for this planning effort is based on the following assumptions:

- The Highline Water District and its staff are referred to as the “District” throughout this document.
- Carollo Engineers, Inc. and partner subconsultants are referred to as “Carollo” or the “Carollo Team” throughout this document.
- The District will provide electronic copies of all existing security, risk management, emergency response, and disaster planning information, as well as all other requested data to Carollo within 10 business days of the kickoff meeting.
- The District will provide site plans of all assets for use in creating figures to support the planning reports in native or PDF format.
- The District will assist Carollo in scheduling workshops and meetings with all relevant project stakeholders.
- All workshops will be held at District offices unless otherwise stated in specific scope task descriptions.
- District staff will escort Carollo staff on all site visits.
- District staff will provide comments on all draft documents within 10 business days of receipt. The District will consolidate comments from multiple reviewers into a single set and resolve any internal conflicting comments prior to providing to Carollo.

- Carollo will establish a secure file transfer system for document management for the project.
- A Continuity of Operations Plan (COOP) update is not included in this scope of services.
- The cyber security scope associated with this effort is intended to meet the requirements of AWIA only. A full cyber security evaluation will not be performed as part of this scope.
- Deliverables will be provided in electronic copy (.pdf and .docx) and transmitted via email or secure file transfer.
- Notwithstanding any contrary language in Section 9 of the Agreement, Carollo shall be entitled to keep one (1) copy of all written or graphic materials received from District and used by Carollo as well as any work project, in accordance with the standard of care delineated in Section 10 of the Agreement.
- The District will print and produce additional copies of all documents as necessary for its use.
- In providing opinions of probably construction cost (OPCC), financial analyses, economic feasibility projections, and schedules for potential projects, Carollo has no control over cost or price of labor and material; unknown or latent conditions of existing equipment or structures that may affect operation and maintenance costs; competitive bidding procedures and market conditions; time or quality of performance of third parties; quality, type, management, or direction of operating personnel; and other economic and operational factors that may materially affect the ultimate project cost or schedule. Therefore, Carollo makes no warranty that the District's actual project costs, financial aspects, economic feasibility, or schedules will not vary from Carollo's opinions, analyses, projections, or estimates.
- All OPCC shall be a Class 5 level, as defined by American Association of Cost Engineering (AACE).
- The District shall furnish Carollo available studies, reports and other data pertinent to Carollo's services; obtain or authorize Carollo to obtain or provide additional reports and data as required; furnish to Carollo services of others required for the performance of Carollo's services hereunder, and Carollo shall be entitled to use and rely upon all such information and services provided by the District or others in performing Carollo's services under this Agreement.
- Carollo shall perform the services required hereunder in accordance with the prevailing engineering standard of care by exercising the skill and ability ordinarily required of engineers performing the same or similar services, under the same or similar circumstances.

FEE

Compensation for services is summarized in Table 1. The total compensation for this task authorization will be on a time and materials basis with a not to exceed cost of \$149,964. Services will be invoiced on a monthly basis. This fee estimate was developed from quantities for labor and other direct costs.

Table 1 Compensation Terms AWIA Phase I: Risk and Resilience Assessment		
Description	Compensation Terms	Budget
AWIA COMPLIANCE TASKS		
Task 1 – Project Management and Progress Meetings	Time and Materials	\$16,173
Task 2 – Data Collection and Site Visits	Time and Materials	\$23,056
Task 3 – Risk and Resilience Assessment	Time and Materials	\$97,909
Task 4 – AWWA G430 Standard Analysis	Time and Materials	\$11,931
Task 5 – EPA Compliance Documentation	Time and Materials	\$924
TOTAL		\$149,993

EXHIBIT B

**HIGHLINE WATER DISTRICT
AWIA 2018 PHASE I: RISK AND RESILIENCE ASSESSMENT
LEVEL OF EFFORT**

DRAFT: March 2, 2020

TASK / DESCRIPTION	CAROLLO LABOR HOURS AND COSTS										SUBCONSULTANT COSTS					DIRECT EXPENSE			TOTAL COST
	Principal In Charge	Project Manager	Quality Manager	Resiliency Evaluations	Security Engineer	CAD: Graphics	Technical Editor	Total Hours	Labor Cost	Enterprise Protection, Associates	Total Sub Markup 5%	Total Subs	Carollo Other Direct Charges	PECE @ \$/hr	Total Direct Charges				
	Lara Kammerock \$262	Alana Thurman \$180	Dave Sobek \$262	Professional Sarah Destealers \$180	Professional George Whitten \$148	CAD Tech	Document Processing									Professional			
Task 1 - Project Management and Meetings																			
1.1 Project Administration and Management	4	28	8	0	8	0	10	60	\$ 10,876	\$ 2,740	\$ 137	\$ 2,877	\$ 1,700	\$ 720	\$ 2,420	\$ 16,173			
1.2 WS 1 - Kickoff Workshop	2	8	8	0	8	0	2	28	\$ 4,428	\$ 1,960	\$ 98	\$ 2,058	\$ 1,700	\$ 338	\$ 2,086	\$ 9,522			
1.3 Progress Meetings	0	4	0	0	0	0	0	4	\$ 720	\$ 720	\$ 39	\$ 819	\$ -	\$ 48	\$ 48	\$ 1,587			
Task 2 - Data Collection and Site Visits																			
2.1 Data Collection	0	22	6	8	24	2	2	64	\$ 10,894	\$ 6,280	\$ 314	\$ 6,594	\$ 4,800	\$ 768	\$ 6,568	\$ 23,056			
2.2 Site Visits	0	2	2	4	4	2	2	16	\$ 2,908	\$ 1,360	\$ 69	\$ 1,449	\$ -	\$ 192	\$ 192	\$ 4,247			
2.3 Stakeholder Meetings	0	16	0	0	16	0	0	32	\$ 5,216	\$ 3,520	\$ 176	\$ 3,696	\$ 2,400	\$ 394	\$ 2,784	\$ 11,696			
Task 3 - Risk and Resilience Assessment																			
3.1 Characterize Assets	2	64	52	52	78	7	14	267	\$ 48,287	\$ 37,160	\$ 1,858	\$ 39,018	\$ 7,400	\$ 3,204	\$ 10,604	\$ 97,909			
3.2 Characterize Threats	0	4	2	0	4	0	0	10	\$ 1,828	\$ 1,860	\$ 93	\$ 1,953	\$ -	\$ 120	\$ 120	\$ 3,901			
3.3 Identify and Analyze Consequences	0	2	2	4	4	0	0	12	\$ 2,188	\$ 2,450	\$ 123	\$ 2,563	\$ -	\$ 144	\$ 144	\$ 4,815			
3.4 Vulnerability Analysis	0	4	2	6	4	0	0	16	\$ 2,808	\$ 3,240	\$ 162	\$ 3,402	\$ -	\$ 192	\$ 192	\$ 6,502			
3.5 Analyze Threats	0	4	2	6	4	0	0	16	\$ 2,908	\$ 2,460	\$ 123	\$ 2,583	\$ -	\$ 192	\$ 192	\$ 5,683			
3.6 Risk and Resilience Analysis	0	4	2	6	4	0	0	16	\$ 2,908	\$ 5,390	\$ 279	\$ 5,859	\$ -	\$ 192	\$ 192	\$ 8,969			
3.7 Risk and Resilience Management	0	4	2	6	4	0	0	16	\$ 2,908	\$ 5,890	\$ 275	\$ 5,859	\$ -	\$ 192	\$ 192	\$ 8,959			
3.8 Staff Training	0	4	0	4	4	0	0	12	\$ 2,024	\$ 1,180	\$ 59	\$ 1,289	\$ 300	\$ 144	\$ 444	\$ 3,707			
3.9 Risk and Resilience Assessment Report	2	2	6	6	12	6	12	46	\$ 7,142	\$ 3,720	\$ 186	\$ 3,906	\$ -	\$ 552	\$ 552	\$ 11,600			
3.10 Meetings/Workshops	0	32	32	8	32	1	2	107	\$ 20,555	\$ 7,840	\$ 392	\$ 8,232	\$ 7,100	\$ 1,284	\$ 6,384	\$ 37,181			
Task 4 - AWWA G450 Standard Analysis																			
4.1 Evaluation of Existing District Practices	0	10	8	0	12	4	12	46	\$ 7,284	\$ 3,900	\$ 195	\$ 4,095	\$ -	\$ 552	\$ 552	\$ 11,831			
4.2 Compliance Narratives	0	4	2	0	4	0	4	22	\$ 3,064	\$ 1,360	\$ 78	\$ 1,638	\$ -	\$ 264	\$ 264	\$ 4,988			
4.3 Meetings/Workshops	0	4	4	0	4	0	4	12	\$ 1,888	\$ 1,680	\$ 78	\$ 1,838	\$ -	\$ 144	\$ 144	\$ 3,650			
Task 5 - EPA Compliance Documentation																			
5.1 Generate Documentation	0	2	0	0	2	0	2	8	\$ 852	\$ -	\$ -	\$ -	\$ -	\$ 72	\$ 72	\$ 924			
TOTAL	8	124	74	69	120	13	38	437	\$ 77,341	\$ 50,030	\$ 2,504	\$ 82,874	\$ 13,900	\$ 5,244	\$ 13,144	\$ 149,983			

Agenda Item No.: 5.1
Agenda Date: 03/18/20
Reviewed By: [Signature]

Re: Resolution authorizing Consulting Services Agreement #20-60-04 with Carollo Engineers, Inc. to complete the AWIA Phase 1: Risk and Resilience Assessment

CATEGORY	
<i>Executive</i>	<input type="checkbox"/>
<i>Administrative</i>	<input type="checkbox"/>
<i>Engineering/Operations</i>	<input checked="" type="checkbox"/>

FINANCIAL						
<i>Expenditures?</i>	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>	N/A	<input type="checkbox"/>
<i>Budgeted?</i>	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		
				<i>Amount: \$ 149,993.00</i>		
				<i>(Excludes Sales Tax)</i>		

ATTACHMENTS:

1. Resolution 20-3-18A
2. Attachment 1 – Consultant Agreement #20-60-04

COMMENTS:

The District requested a scope of work and budget from Carollo Engineers, Inc., the firm who prepared the District's 2016 Water System Plan, hydraulic model and evaluation of the District's assets, to further assist the District in performing a Risk and Resilience Assessment (RRA) and an update to their Emergency Response Plan (ERP) that meets the requirements of America's Water Infrastructure Act (AWIA) of 2018.

The District's Engineering & Operations Manager and General Manager have reviewed the scope of work and budget for Phase 1 Risk and Resilience Assessment submitted by Carollo Engineers, Inc, and recommend approval of this resolution.