

ITEM 4.5

CITY MANAGER'S REPORT JANUARY 11, 2021 CITY COUNCIL REGULAR MEETING

ITEM: CREATE CIP RC 21-01, AMENDMENT NO. 1 WITH CAROLLO ENGINEERS, INC., FOR AMERICA'S WATER INFRASTRUCTURE ACT COMPLIANCE SERVICES, AND APPROVE RELATED BUDGET AMENDMENT

RECOMMENDATION: Adopt Resolution Approving the Creation of Capital Improvement Project for Regulatory Compliance CIP RC 21-01, Amendment No. 1 with Carollo Engineers, Inc., for America's Water Infrastructure Act (AWIA) Compliance Services, and Approve Related Budget Amendment

SUMMARY:

On October 23, 2018, Congress signed into law the America's Water Infrastructure Act (AWIA), (S.3021, Law 115-270) which requires utilities to conduct a Risk and Resiliency Assessment (RRA) of their community water systems and develop a corresponding Emergency Response Plan (ERP). Staff issued a Request for Proposals for AWIA Compliance professional consulting services on August 24, 2020 and on September 16, 2020, received one response from Carollo Engineers, Inc., (Carollo). After reviewing their proposal, staff determined Carollo is highly qualified to provide the AWIA Compliance services, and negotiated a scope and fee and approved a Professional Services Agreement for the Phase 1 (data collection) services in the amount of \$4,054.

Staff requests creation of a new Capital Improvement Project (CIP) RC 21-01 and approve Amendment No. 1 to the professional services agreement with Carollo for the remaining AWIA Compliance Phase 2 Services. The cost of the Amendment No. 1 with Carollo is \$95,828 and is proposed to be paid using funds transferred from the Water Fund 5620 to the new CIP RC 21-01 AWIA Compliance with a budget amendment.

BACKGROUND:

On October 23, 2018, Congress signed into law the AWIA (S.3021, Law 115-270) which requires utilities to conduct a Risk and Resiliency Assessment (RRA) of their community water systems and develop a corresponding Emergency Response Plan (ERP). Upon completion of the RRA and ERP, the utility is to submit self-certifications to the U.S. Environmental Protection Agency (USEPA) indicating that the RRA and ERP, in compliance with AWIA, are complete. Based on the population served, the City will be required to submit self-certification to the USEPA for the RRA by June 1, 2021, and for the ERP by December 31, 2021.

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JANUARY 11, 2021, CITY COUNCIL REGULAR MEETING
CREATE CIP RC 21-01, AMENDMENT NO. 1 WITH CAROLLO ENGINEERS, INC.,
FOR AMERICA’S WATER INFRASTRUCTURE ACT (AWIA) COMPLIANCE
SERVICES AND APPROVE RELATED BUDGET AMENDMENT

Staff issued a Request for Proposals for AWIA Compliance professional consulting services on August 24, 2020 and on September 16, 2020, received one response from Carollo. After reviewing their proposals, Staff negotiated a scope and fee and approved a Professional Services Agreement for the Phase 1 (data collection) services under authorization of the City Manager. Staff recommends Council approve Amendment No. 1 to the professional services agreement with Carollo for the remaining AWIA Compliance Phase 2 Services.

REASON FOR RECOMMENDATION:

Creation of a new Capital Improvement Project (CIP) RC 21-01 and approval of a professional services agreement with Carollo is needed for AWIA Compliance and to protect the integrity of the City’s water infrastructure from natural and manmade threats and to improve public safety and emergency preparedness.

FISCAL IMPACT:

The cost of the agreement and amendment with Carollo for the Phase 1 services is \$4,054, and for Amendment No.1 for the Phase 2 services is \$95,828 for a total cost of \$99,882 and is to be paid using funds transferred from the Water Fund 5620 to CIP RC 21-01 is requested as follows:

<u>Increase Appropriation</u>		
5620-5050-420-0100	RC 21-01	\$99,882
(Water System Professional Services)		

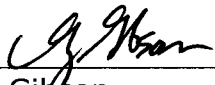
ATTACHMENTS:

- A. Adopt Resolution Approving the Creation of Capital Improvement Project for Regulatory Compliance CIP RC 21-01, Amendment No. 1 with Carollo Engineers, Inc., for America’s Water Infrastructure Act (AWIA) Compliance Services, and Approve Related Budget Amendment

- B. Amendment No. 1 to the Professional Services Agreement with Carollo Engineers, Inc., for America’s Water Infrastructure Act (AWIA) Compliance and Associated Budget Amendment

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JANUARY 11, 2021, CITY COUNCIL REGULAR MEETING
CREATE CIP RC 21-01, AMENDMENT NO. 1 WITH CAROLLO ENGINEERS, INC.,
FOR AMERICA'S WATER INFRASTRUCTURE ACT (AWIA) COMPLIANCE
SERVICES AND APPROVE RELATED BUDGET AMENDMENT

APPROVALS:



Greg Gibson
Senior Civil Engineer

01/06/2021
Date




Michael King
Director of Public Works

1-6-2021
Date



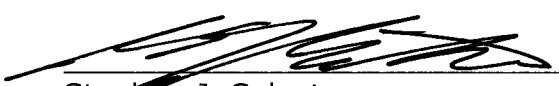
Cari James
Director of Finance &
Administrative Services

1/6/2021
Date



Salvador Navarrete
City Attorney

1/6/2021
Date



Stephen J. Salvatore
City Manager

1-6-21
Date

RESOLUTION NO. 21 -

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF LATHROP APPROVING THE CREATION OF CAPITAL IMPROVEMENT PROJECT FOR REGULATORY COMPLIANCE CIP RC 21-01, AMENDMENT NO. 1 WITH CAROLLO ENGINEERS, INC., FOR AMERICA'S WATER INFRASTRUCTURE ACT (AWIA) COMPLIANCE SERVICES, AND APPROVE RELATED BUDGET AMENDMENT

WHEREAS, on October 23, 2018, Congress signed into law the America's Water Infrastructure Act (AWIA) (S.3021, Law 115-270) which requires utilities to conduct a Risk and Resiliency Assessment (RRA) of their community water systems and develop a corresponding Emergency Response Plan (ERP); and

WHEREAS, staff issued a Request for Proposals for AWIA Compliance professional consulting services on August 24, 2020 and received one response from Carollo Engineers, Inc., (Carollo) on September 16, 2020; and

WHEREAS, after reviewing the proposal, Staff determined Carollo is highly qualified to provide the AWIA Compliance services, and negotiated a scope and fee and approved a Professional Services Agreement for the Phase 1 (data collection) services in the amount of \$4,054; and

WHEREAS, creation of a new Capital Improvement Project (CIP) RC 21-01 and approval of Amendment No. 1 to the professional services agreement with Carollo for the remaining AWIA Compliance Phase 2 Services is needed for AWIA Compliance and to protect the integrity of the City's water infrastructure from natural and manmade threats and improve public safety and emergency preparedness; and

WHEREAS, the cost of the agreement with Carollo for the Phase 1 services is \$4,054, and Amendment No.1 for the Phase 2 services is \$95,828 for a total cost of \$99,882 and is to be paid using funds transferred from the Water Fund 5620 to CIP RC 21-01 through a budget amendment.

NOW, THEREFORE, BE IT RESOLVED, the City Council of the City of Lathrop does hereby approve the creation of Capital Improvement Project (CIP) RC 21-01; and

BE IT FURTHER RESOLVED, the City Council of the City of Lathrop does hereby approve Amendment No. 1 with Carollo for the remaining America's Water Infrastructure Act Compliance Phase 2 services for a cost not to exceed \$95,828; and

BE IT FURTHER RESOLVED, the City Council of the City of Lathrop does hereby approve a budget amendment to transfer funds from the Water Fund 5620 to CIP RC 21-01 as follows:

<u>Increase Appropriation</u>		
5620-5050-420-0100	RC 21-01	\$99,882
(Water System Professional Services)		

The foregoing resolution was passed and adopted this 11th day of January 2021, by the following vote of the City Council, to wit:

AYES:

NOES:

ABSENT:

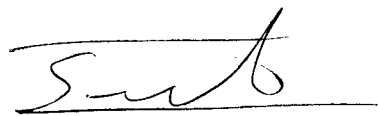
ABSTAIN:

Sonny Dhaliwal, Mayor

ATTEST:

APPROVED AS TO FORM:

Teresa Vargas, City Clerk



Salvador Navarrete, City Attorney

AMENDMENT NO. 1

**TO THE AGREEMENT BETWEEN THE CITY OF LATHROP AND
CAROLLO ENGINEERS, INC.**

**AMERICA'S WATER INFRASTRUCTURE ACT (AWIA) COMPLIANCE
RISK AND RESILIENCY ASSESSMENT AND EMERGENCY RESPONSE
PLAN (PHASE 2)**

THIS AMENDMENT (hereinafter "AMENDMENT NO. 1") to the agreement between **Carollo Engineers, Inc.**, and the City of Lathrop dated December 11, 2020, (hereinafter "AGREEMENT") dated for convenience this **11th day of January 2021**, is by and between **Carollo Engineers, Inc.** ("CONSULTANT") and the **City of Lathrop**, a California municipal corporation ("CITY");

RECITALS:

WHEREAS, CONSULTANT is specially trained, experienced, and competent to perform Professional Engineering Consulting Services for the City of Lathrop, which are required by this agreement; and

WHEREAS, CITY selected the CONSULTANT pursuant to said qualifications; and

WHEREAS, on December 11, 2020, CONSULTANT and CITY entered into an AGREEMENT to perform the Engineering Consulting Services (Phase 1 Data collection), not to exceed \$4,054; and

WHEREAS, CONSULTANT provided scope of work attached hereto as Exhibit "A" for Amendment No. 1 for the Phase 2 Engineering Consulting Services in support of AWIA Compliance; and

NOW, THEREFORE, CONSULTANT and the CITY agree as follows:

AMENDMENT NO. 1 TO AGREEMENT

- (1) **Scope of Service. Section (1) of the AGREEMENT for Consulting is hereby amended to add the following:**

CONSULTANT agrees to perform Engineering Consulting Services in accordance with the scope of work and fee proposal provided by CONSULTANT, attached hereto as Exhibit "A" in addition to the scope of work in the original AGREEMENT dated December 11th, 2020.

CONSULTANT agrees to diligently perform these services in accordance with the upmost standards of its profession and to CITY'S satisfaction.

CITY OF LATHROP – CONSULTING SERVICES AGREEMENT AMENDMENT NO. 1
WITH CAROLLO FOR AWIA COMPLIANCE (PHASE 2)

(2) **Compensation.** Section (2) of the AGREEMENT for Consulting Services is hereby amended as follows:

City hereby agrees to pay CONSULTANT an additional sum of **\$95,828** for services set forth in Exhibit “A” of this Amendment No.1, with a total sum not to exceed of \$99,882 (\$4,054 for the original AGREEMENT, \$95,828 for AMENDMENT NO. 1). CONSULTANT shall be paid within thirty (30) days of receipt of billings containing all information contained in Paragraph 5 of the original AGREEMENT. Compensation for any task must be equal to or less than the percentage of task complete. In no event shall CONSULTANT be entitled to compensation for work not included in the original scope of work and this AMENDMENT unless a written change order or authorization describing the extra work and payment terms has been executed by CITY’S Authorized Representative prior to the commencement of the work.

(3) **Effective Date and Term**

The effective date of AMENDMENT NO. 1 is **January 11, 2021**, and it shall terminate no later than **June 30, 2022**. All other terms of the original AGREEMENT shall remain in full force and effect.

(4) **Applicability to Original Consultant AGREEMENT**

All terms and conditions set forth in the AGREEMENT dated December 11th, 2020 are still in effect and are incorporated by reference herein and said AGREEMENT is incorporated by reference herein.

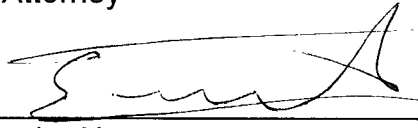
(5) **Signatures**

The individuals executing this AMENDMENT NO. 1 represent and warrant that they have the right, power, legal capacity, and authority to enter into and to execute this AMENDMENT NO. 1 on behalf of the respective legal entities of the CONSULTANT and the CITY. This agreement shall inure to the benefit of and be binding upon the parties hereto and their respective successors and assigns.

CITY OF LATHROP – CONSULTING SERVICES AGREEMENT AMENDMENT NO. 1
WITH CAROLLO FOR AWIA COMPLIANCE (PHASE 2)

Approved as to Form:

City of Lathrop
City Attorney



12-9-2020

Salvador Navarrete

Date

Recommended for Approval:

City of Lathrop
Public Works Director

Michael King

Date

Approved by:

City of Lathrop
390 Towne Centre Drive
Lathrop, CA 95330

Stephen J. Salvatore
City Manager

Date

Consultant:

Carollo Engineers, Inc.
2880 Gateway Oaks Drive, Suite 300
Sacramento, CA 95833

Federal ID # _____

Business License # _____

Signature

Date

Print Name and Title



December 17, 2020

Mr. Michael King
City of Lathrop
Director of Public Works

Subject: Scope for AWIA Risk and Resiliency Assessment and Emergency Response Plan

Dear Mr. King:

The America's Water Infrastructure Act (AWIA) of 2018 requires all utilities in the United States serving over 3,300 customers to complete a comprehensive evaluation of their water systems to better manage their risks and increase their resilience. The AWIA emphasizes a holistic approach to risk and emergency planning that evaluates each aspect of the water system to provide resiliency for all-hazards, including malevolent acts and natural hazards.

The City's customer base (per the US EPA SDWIS database) exceeds the AWIA minimum threshold and places you in the community group required to meet the "Tier 3" compliance dates of June 30, 2021 for submittal of a Risk and Resiliency Assessment (RRA) and December 30, 2021 for submittal of Emergency Response Plan (ERP) updates.

Carollo Engineers Inc. (Carollo) is pleased to provide this scope of services to support the City in achieving AWIA compliance and positioning your water utility for a strong, secure future.

SCOPE OF WORK

This scope of work outlines Carollo's proposed approach to completing the AWIA required RRA and ERP update for the City. The AWIA 2018 emphasizes a holistic approach to risk and emergency planning that evaluates all aspects of a water system to provide adequate resiliency for *all-hazards*, including malevolent acts and natural hazards. As such, this assessment will consider the physical and electronic security, operational procedures, water system configuration, cybersecurity, and other relevant factors that contribute to the overall reliability and resilience of the City and its water system assets.

Conducting a comprehensive RRA and integrating the results into an updated ERP is critical to ensuring a safe and reliable drinking water supply for your customers. Ultimately, the EPA requires confirmation from the City stating that your comprehensive RRA is completed by June 30, 2021 and your ERP updates are completed six months later. The work under this scope will provide the City with the due diligence process documentation required to meet these deadlines.

Delivery of the RRA and ERP scope of work will incorporate applicable guidelines from the following American Water Works Association (AWWA) guidance documents, among others:

- Risk and Resilience of Water and Wastewater Systems, AWWA J100-10
- Security Practices for Operation and Maintenance, AWWA G430-14
- Emergency Preparedness Practices, AWWA G440-17

- Source Water Protection, AWWA G300

The RRA will build upon the City's existing planning documents as well as information obtained from data requests, site visit, and collaboration with utility management, operations, maintenance, 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.

The scoped tasks below provide additional detail for each of the proposed tasks that collectively address the all-hazard requirements of the AWIA. Task 1 is already authorized and underway, with Tasks 2 through 7 beginning in late January 2021 to provide the process and information necessary for the City to develop the required RRA and ERP certifications as part of this Amendment No. 1.

Phase 1 (Previously authorized)

- Task 1 – Data Collection

Phase 2 (Work Proposed for this Amendment No. 1)

- Task 2 – Site Visit and Meetings
- Task 3 – Risk and Resilience Assessment
- Task 4 – AWWA G430/440 Standard Analysis
- Task 5 – Emergency Response Plan Updates
- Task 6 – EPA Compliance Support
- Task 7 – Project Management

Our team recognizes the need to collaborate with City staff in the execution and development of the RRA and ERP assessment and planning documents. Our previous experience has proven that often the process of creating and implementing a plan is as important and beneficial to the organization as the actual plan itself. City staff and other critical project stakeholders will need to be 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 City.

Scope Tasks

PHASE 1 (Previously authorized)

Task 1 – Data Collection

Task 1.1 – Data Collection

Under this initial task Carollo Engineers, Inc. will request and gather relevant project data for use in subsequent tasks to assist the City in achieving compliance with the America's Water Infrastructure Act (AWIA) of 2018. Our data and information collection efforts will include review of relevant studies, plans, other related information, as well as potential interviews with key stakeholders.

Our team will create an initial data and information request log and submit it to the City. The request will acknowledge information we have collected by searching our files for past and current work assignments, searching publicly available files, those provided by the City prior to the request, and those that may be on the City's website.

During this step we will obtain and review existing documentation which might include:

- ③ Existing Water System Master Plan.
- ③ Urban Water Management Plan.
- ③ Local Hazard Mitigation Plans.
- ③ Existing Vulnerability Assessment.
- ③ Threat Assessments.
- ③ Existing Emergency Response Plan.
- ③ Cyber Security Plans.
- ③ BCPs/COOPs.
- ③ Contracts.
- ③ Security Policy.
- ③ Documented Procedures.
- ③ Utility and/or departmental requirements.
- ③ Existing operational documentation.
- ③ Existing resilience related documentation.
- ③ HazMat and SPCC Plans.
- ③ Existing IT policies and procedures.
- ③ Policies and practices related to public information requests.
- ③ Existing security system specs and policies.
- ③ Information such as system drawings and previous analyses regarding risks and resilience.

This task also includes an initial meeting with the City to identify stakeholders who will be important to future phases of the overall effort.

Task 1 Deliverables

- ☞ Data request log (1 electronic PDF)

PHASE 2 (To be completed as part of this Amendment No. 1)

Task 2 –Site Visit and Meetings

Task 2.1 – Kickoff Meeting

Carollo will facilitate a virtual Project Kickoff Meeting with City staff. The meeting 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.
- Develop an understanding of the extensive methodologies and guidance documents to be followed for the RRA and ERP preparation.
- Confirm the schedule milestones and any required coordination with other on-going and/or future planning, design or construction efforts.
- Review the City's existing security, emergency response, and emergency/disaster planning approaches, and discuss desired enhancements as it relates 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.
- Confirm key project stakeholders.

Task 2.2 – Monthly Progress Meetings

Carollo will conduct virtual monthly progress meetings to discuss the project status including plan development, required decisions, upcoming activities, budget status, and overall project schedule. Monthly meetings will cover progress for both the risk and resiliency assessment and emergency response planning updates. Meetings will typically be conducted via teleconference, Microsoft Teams, Skype, or Webex. Up to six (6) meetings are planned as part of this task.

Task 2.3 – Site Visit

As part of the kick-off meeting and goal setting activities outlined in Task 2.1, Carollo will work with the City to develop a schedule to visit several of your critical or representative facilities/assets that are part of the system. While Carollo has an understanding of some of your assets, the intent is to visit key assets with City 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. Site visits are assumed to be accomplished during a single 8-hour day.

Task 2.4 – Stakeholder Meetings

As part of the kick-off meeting, the team will work with the City to schedule subsequent virtual 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 and maintenance staff, IT staff, local law enforcement/first responders, and the U.S. Department of Homeland Security (DHS). In addition, the team will facilitate meetings with elements of the critical dependencies identified in the RRA and ERP (i.e. power

providers, chemical suppliers, etc.). Carollo will distribute an agenda prior to each meeting and will provide meeting minutes to all participants.

Task 2 Deliverables

- Monthly progress reports (electronic)
- Meeting agendas, materials, and minutes (electronic PDFs)

Task 3 – Risk and Resiliency Assessment

As part of this task, Carollo will conduct an RRA of the City's water system. The efforts will include determination of potential threats and consequences which will serve as the baseline for update of the existing ERP. The assessment will cover critical water system assets, including: people, equipment, systems, materials, supplies, and records.

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 City's water related assets, including water production wells, interties, storage, pumping, PRVs, operations centers, distribution system piping, etc., will be included in the analysis.

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, desired level of security, and the potential gap to be addressed. The intent of the effort will be to provide the City with the information needed to comply with the AWWA J100 and G430/440 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.

Task 3.1 – Characterize Assets

The goal of this task is to confirm and characterize the City's water system assets. In addition to the system assets listed above, the team will work with your staff to identify any changes that may occur in the system over the short-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.

This task also includes identifying which facilities to include in the analysis process. As the required AWIA threat analysis focuses on your critical assets, only the assets identified as critical will be carried forward as part of the evaluation (although the ultimate recommendations will be applied to all City assets).

In general, a critical asset is defined as one whose absence or unavailability would significantly degrade the ability of a utility to carry out its mission or would have unacceptable financial, political, operational, or environmental consequences for the owner or community. As part of the evaluation, the team will consider each asset through three lenses:

- **Human:** Describes the severity of the human loss or injuries if that asset is attacked or contaminated.

- **Financial:** Describes the amount of money that the owner would have to spend to repair or replace that asset if it was attacked.
- **Regional:** Describes the effect on the surrounding community if they were unable to provide service due to an attack on that asset.

Each asset will be ranked based on each of these factors and compared against the other assets. At the end of this step, the intent 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 City or associated communities.

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

Significant input is expected from City personnel, including operators, management, IT and finance, in order to complete this task. Carollo will facilitate one (1) virtual workshop to obtain necessary input from stakeholders.

Task 3.2 – Characterize Threats

This task involves determining what threats and hazards are applicable to the City and specifying those 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 and proximity and dependency hazards. The J100 methodology will be employed to define threat-asset pairs, which are reference threats paired together with system assets. Carollo will complete the threat characterization efforts as part of the workshop referenced in Task 3.1.

Task 3.3 – Identify and Analyze Consequences

Consequence analysis estimates the losses that result from each specific threat or hazard when applied 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 in the analysis, i.e. what is the highest 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 estimates of impact that must be determined through discussion with local personnel. Carollo will complete the consequence analysis efforts as part of the workshop referenced in Task 3.1.

Task 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 these questions:

- What existing security and resilience features are available?
- What gaps exist in the 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 probability or frequency expected 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, including:

- 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.

Task 3.5 – Analyze Threats

As part of this task, Carollo 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 malevolent hazards. For natural hazards, the frequency can be estimated with readily available data from annexes to the AWWA J100 documentation. The malevolent threat information is collected using one of 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 City staff).

Task 3.6 – Risk and Resilience Analysis

This task includes a calculation of both risk and resilience for specific threat-asset pairs. Carollo will use formulas 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 at the same time). This PARRE tool will be used to complete the evaluation.

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

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

Carollo will facilitate one (1) virtual workshop to obtain necessary input from stakeholders.

Task 3.7 – Risk and Resilience Assessment Report

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

EXECUTIVE SUMMARY	Summarizes the key points of all RRA sections.
INTRODUCTION	Outlines the City'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 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 resiliency 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.

The draft report will be submitted to the City for review. One virtual workshop is planned to review the draft report and receive comments from the City. Comments will be incorporated into the final RRA Report.

Task 3 Deliverables

- RRA Review Meeting agenda, materials, and minutes, and comment log (1 electronic PDF for each)
- Draft RRA Report (1 electronic PDF and 10 hardcopies)
- Final RRA Report with Appendices (1 electronic PDF and 10 hardcopies)

Task 4 – AWWA G430/440 Standard Analysis

The AWWA G430 standard outlines the minimum requirements for a security program promoting protection of employees, public safety, health, and confidence. Similarly, the AWWA G440 standard outlines the minimum requirements for an emergency response program to promote protection of employees, public safety and health. The intent of this task is to evaluate each of the components of the G430 and G440 standards and provide a compliance narrative based on the previous tasks and an evaluation of existing City practices. A great deal of the information required for the G430/G440 analysis is organizational material. Consequently, this evaluation will be highly collaborative, involving a variety of City staff. Note that, while this evaluation is required for compliance with AWIA, it is included as part of an Appendix to the baseline report to allow the City to distribute this more general guidance document to a larger audience, while protecting the other, more confidential sections of the report.

Task 4.1 – Evaluation of Existing City Practices

Carollo will obtain a majority of the required information associated with existing practices from prior tasks, but will likely require additional information related to the City'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 City's AWWA G430/440 compliance.

Task 4.2 – Compliance Narratives

Carollo will evaluate each of the requirements outlined in the G430 and G440 guidance documents 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 City for review. One (1) virtual workshop is planned to review the draft memo and receive comments. Comments will be incorporated into the final AWWA G430/440 Assessment Tech Memo.

Task 4 Deliverables

- AWWA G430/440 Assessment Review Meeting agenda, materials, and minutes, and comment log (1 electronic PDF for each)
- Draft AWWA G430/440 Assessment Tech Memo (1 electronic PDF and 10 hardcopies)
- Final AWWA G430/440 Assessment Tech Memo (to be added as an appendix to the RRA Report)

Task 5 – Emergency Response Plan Updates

Task 5.1 – ERP Updates/Risk Mitigation

Carollo will use the information generated as part of previous tasks and work closely with the City to determine opportunities to reduce risks and enhance system resilience. This task will include 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) in 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. One (1) virtual workshop is planned as part of this task.

Following completion of the risk mitigation exercises, the team will initiate update of the ERP. The City's existing ERP will be utilized as a baseline for the ERP related requirements outlined by AWIA. The updates will be based on the information gathered, and risk and resilience gaps identified as part of the RRA development. This task will include identifying recommended modifications to the existing ERP. The team will utilize information from the existing ERP and Hazard Identification and Risk Assessment (HIRA) plan (if applicable) and complete interviews with selected City staff and emergency responders to gather

information regarding their current capability to react to disaster situations. Following the initial data collection and interviews, the team will visit selected sites/assets throughout the service area to aid in identifying current emergency management gaps (note that these site visits will be completed in conjunction with the site visits identified in Task 2.3 to maximize efficiency). The team will also review the assessment of the threats from malevolent threats and natural hazards developed as part of the RRA to understand and develop critical system dependencies. The results of the analysis will be used to provide updates to the existing ERP document specific to the water system assets.

To meet the current requirements of AWIA, this task will include the development of the following:

- Strategies and resources to improve the resilience of the system, including the physical security and cybersecurity of the system;
- Plans and procedures that can be implemented, and identification of equipment that can be utilized, in the event of a malevolent act or natural hazard that threatens the ability of the community water system to deliver safe drinking water;
- Actions, procedures, and equipment which can significantly lessen the impact of a malevolent act or natural hazard on the public health, safety and supply of drinking water provided to communities;
- Strategies that can be used to aid in the detection of malevolent acts or natural hazards that threaten the security or resilience of the system.

The final result will be updates to the existing ERP which meet the requirements for compliance with AWIA 2018. The Draft ERP Updates will be submitted to the City for review. One (1) additional virtual workshop is planned to review the draft document and receive comments. Comments will be incorporated into the final ERP Report.

The City may have other documents/plans, including a Pandemic Plan, Continuity of Operations Plan (COOP), Risk Management Plans (RMPs), Business Continuity Plan (BCP), etc. that are related to emergency response during events. While Carollo may review these documents as part of our RRA or ERP update efforts, update of these ancillary documents is not included in this scope.

Task 5 Deliverables

- Updated ERP Recommendations Review Meeting agenda, materials, and minutes, and comment log (1 electronic PDF for each)
- Draft Updated ERP Report (1 electronic PDF and 10 hardcopies)
- Final Updated ERP Report

Task 6 – EPA Compliance Support

The intent of this task is to develop the documentation for the City to meet the requirements for compliance with AWIA 2018. Note that EPA recommends that utilities utilize an electronic submittal of certification process for both the RRA and ERP. This process provides immediate confirmation and a record of compliance for the utility. While the City will need to complete the on-line process, the Carollo team will assist as required and will provide letters confirming RRA and ERP compliance for reference, prior to the AWIA completion deadline. Carollo recommends that the City postpone submitting the associated letters

until the June 30, 2021 (RRA) and December 30, 2021 (ERP) deadlines as the 5-year update clock starts upon submittal. Letters will be provided to the City for approval and comment prior to finalization.

Task 6 Deliverables

- RRA compliance letters for City records.
- ERP compliance letter for City records.

Task 7 – Project Management

This task includes project management activities, submittal of monthly progress reports, and overall coordination and assistance. Efforts associated with this task include 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 each invoice.

PROJECT SCHEDULE

The estimated total project durations for delivery of the AWIA compliance letters to the City are:

- Draft RRA compliance letter to the City: *June 23rd, 2021 delivery* based on a notice to proceed date for Phase 1 of November 25, 2020 and Phase 2 of January 15, 2021.
- Draft ERP compliance letter to the City: *December 16th, 2021 delivery* based on a notice to proceed date for Phase 1 of November 25, 2020 and Phase 2 of January 15, 2021.

This delivery dates are inclusive of a 10-day City review period for each project submittal outlined in the above Scope of Work, and submittal of the Final Reports and letters as indicated above.

BASIS FOR SCOPE OF SERVICES AND COMPENSATION

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

1. City will provide electronic copies of all existing security, emergency response, and disaster planning information, as well as all other requested data to Carollo within 10 business days of the request for information as noted on the associated data collection form.
2. City will provide site plans of all assets for use in creating figures to support the planning reports in native or .PDF format.
3. City will assist Carollo in scheduling virtual meetings with all relevant project stakeholders.
4. City staff will escort Carollo staff on all site visits.
5. City staff will provide comments on all draft documents within 10 business days of receipt.
6. Carollo will establish a secure file transfer system for document management associated with the project.
7. A Continuity of Operations Plan (COOP) update is not included in the base scope of services.

8. The proposed cyber security assessment will be designed to meet the requirements of AWIA. A full cyber security evaluation will not be performed as part of the base scope.
9. Project invoices will be submitted monthly. Work progress will be provided, and payment will be made based on percent complete of each task (lump sum by task). Work activity for each task will be described in a progress report that will accompany each monthly invoice. Payment terms are net 30 days.

Phase 1 Budget: \$4,054

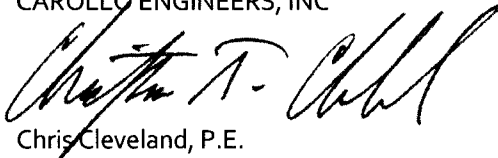
Amendment No. 1 Budget (Phase 2): \$95,828

Total Proposed Amended Project Budget: \$99,882

We look forward to discussing the proposal with you at your earliest convenience.

Sincerely,

CAROLLO ENGINEERS, INC



Chris Cleveland, P.E.
Senior Vice President

Enclosures: Budget Table

Risk and Resilience Assessment and Emergency Response Plan per the Requirements of America's Water Infrastructure Act (AWIA) of 2018
Budget Table



Task #	Task Description	LABOR HOURS													TOTAL LABOR & EXPENSES	
		Firm														
		Principal in Charge Professional	Project Manager Professional	Quality Manager Senior Professional	Project Engineer Lead Professional	Cybersecurity Assessment Senior Professional	Resiliency Evaluations Project Professional	Security Engineer Professional	CAD/ Graphics CAD Tech	Technical Editor Document Processing	LABOR TOTAL					
Carollo	Carollo	Carollo	Carollo	Carollo	Carollo	Carollo	Carollo	Carollo	Carollo	Carollo	Hours	Enterprise Protection Associates	Expenses			
TASK 1 - DATA COLLECTION (PREVIOUSLY CONTRACTED)																
1.1	Data Collection	0	2	0	4	0	4	0	4	0	4	0	0	14	\$ 780	\$ 4,054
TASK 2 - SITE VISIT AND MEETINGS																
2.1	Kickoff Meeting	6	8	0	12	0	2	4	4	0	4	0	0	32	\$ 3,335	\$ 12,549
2.2	Progress Meetings	4	4	0	2	0	2	0	2	0	2	0	0	8	\$ 195	\$ 2,123
2.3	Site Visit	0	0	0	8	0	0	0	0	0	0	0	0	8	\$ 565	\$ 3,749
2.4	Stakeholder Meetings (Operations, IT, local first responders, DHS, etc.)	0	2	0	2	0	2	0	0	0	0	0	0	4	\$ 565	\$ 4,978
TASK 3 - WATER SYSTEM RISK AND RESILIENCE ASSESSMENT																
3.1	Characterize Assets	0	4	0	4	0	4	0	0	0	0	0	0	12	\$ 565	\$ 3,541
3.2	Characterize Threats (100 methodology to define threat-asset pairs)	0	4	0	0	0	0	0	4	4	0	0	0	12	\$ 565	\$ 3,317
3.3	Identify and Analyze Consequences	0	4	0	0	0	0	0	4	4	0	0	0	12	\$ 1,970	\$ 5,902
3.4	Vulnerability Analysis	0	2	0	2	0	2	0	4	4	0	0	0	10	\$ 1,950	\$ 4,308
3.5	Analyze Threats	0	2	0	2	0	2	0	4	4	0	0	0	12	\$ 2,340	\$ 5,062
3.6	Risk and Resilience Analysis	0	2	0	4	0	4	0	4	4	0	0	0	14	\$ 3,900	\$ 7,174
3.7	Risk and Resilience Assessment Report	0	4	4	4	2	8	16	0	8	0	0	0	60	\$ 3,900	\$ 15,586
TASK 4 - AWWA G430 STANDARD ANALYSIS																
4.1	Evaluation of Existing Practices	0	0	0	0	0	0	0	0	0	0	0	0	20	\$ 2,340	\$ 6,524
4.2	Compliance Narratives	0	2	2	4	0	4	0	4	4	0	0	0	4	\$ 760	\$ 1,508
TASK 5 - EMERGENCY RESPONSE PLAN UPDATES																
5.1	ERP Updates/Risk Mitigation	0	8	4	12	2	16	24	4	16	4	16	86	\$ 9,380	\$ 27,232	
TASK 6 - GENERATE DOCUMENTATION FOR EPA TO SUPPORT COMPLIANCE																
6.1	Generate Documentation for EPA to Support Compliance	0	1	0	1	0	0	0	0	0	0	0	2	\$ 0	\$ 567	
TASK 7 - PROJECT MANAGEMENT																
7.0	Project Management	0	12	0	4	0	0	0	0	0	0	0	16	\$ 0	\$ 4,476	
AMENDMENT NO. 1 TOTAL (TASKS 2-6)																
		6	53	10	49	4	46	74	10	36	288	\$ 30,285	\$ 95,828			

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