775 Summer Street, NE, Suite 200
Salem, Oregon 97301-1280

PROJECT CONTRACT INFORMATION

Entity Name:	Town of Lakeview
Project Name:	Water System Improvements
Funding Amount	$15,000,000
Funding Source:	**ARPA**
Project Location (physical address):	Town of Lakeview, 525 North 1st Street, Lakeview, Oregon 97630
Project Type (choose one):	Design/Construction

Entity Information	
Federal Tax ID #:	93-6002198
***DUNS #:**	036626919
Organization Type & ORS #:	
Street Address:	525 North 1st Street, Lakeview, OR 97630
Mailing Address:	525 North 1st Street, Lakeview, OR 97630
County:	Lake
Contact Name:	Michele Parry
Title:	Town Manager
Phone Number:	541-947-2020
Email Address:	townmanager@townoflakeview.org
Contract Signatory Name (Highest Elected Official):	Ray Turner
Title:	Mayor

*In order to receive project funding, Organizations are required to complete the U.S. Federal government System for Award Management ("SAM") registration. Please visit **https://sam.gov/content/entity-registration** for information on how to register.

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Project Information
Background: (Please provide the project background including the community need the project will address.)
For decades, Lakeview officials and public works staff have struggled to provide high quality drinking water to the Town's residents. Due to the geothermal activity in the area, high levels of iron and manganese are naturally occurring minerals found in the Goose Lake Valley and, therefore, are present at elevated levels in the water withdrawn from the Town's groundwater wells. Additionally, the Town's North Well has elevated levels of arsenic above the maximum contaminant level allowed by the Environmental Protection Agency and the Oregon Health Authority-Drinking Water Services and it has been taken offline. The high levels of iron and manganese present in the well water causes the water to be brownish red in color and have taste and odor issues making it less than desirable for most of the Town's 3,100 residents. The poor water quality of the Town's water sources has been a limiting factor to the Town's ability to grow and further develop. While the Town's four water storage tanks provide adequate storage capacity for future growth, the Town's water distribution system is aging, and public works staff spend considerable time dealing with leaks. The Town's current water system lacks any significant automated control systems and is manually operated by public works staff. The Town of Lakeview completed a Water System Master Plan (WSMP) in 2019. The 2019 WSMP identified several deficiencies that Town needs to address in their water system. The highest priority identified is designing and constructing a water treatment facility to address the poor water quality that exists in the Town's well water sources. A new water treatment facility would be designed to treat the groundwater from the Town's well sources for the high levels of iron, manganese and arsenic and provide the community with safe, clean drinking water that will meet primary and secondary regulatory water quality standards. Additionally, the 2019 WSMP identified the need to rehabilitate several of the Town's groundwater wells, replace old distribution piping in key areas of Town, complete improvements to the electrical, controls, monitoring and supervisory control and data acquisition (SCADA) systems, and construct security fencing at the existing spring collection area.

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Detailed Project Description / Scope of Work:
Clearly describe the proposed project work to be accomplished. Identify each project element to be constructed/replaced/rehabilitated.

The proposed project work that will be completed for the project is outlined below. The Town will be completing the project in three phases; Phase 1 will be the preliminary engineering phase, Phase 2 will be the final design engineering phase, and Phase 3 will be the bidding and construction of the improvements.

PHASE 1 - Preliminary Engineering

Water Quality Sampling, Testing, and Data Analysis. To select the most appropriate treatment process and technologies for the Town's water treatment facilities, it is imperative that the water quality of the existing wells is thoroughly understood through adequate sampling, testing, and data analysis. For example, elevated levels of a certain constituent in the water may dictate that a particular treatment technology is not appropriate. The Town's Engineer will analyze the existing available water quality data and assist the Town with developing an appropriate sampling and testing program to gather the necessary data to ensure that the design of the water treatment facilities is based on thoroughly understood water quality. This will help ensure that the most appropriate technology is identified, and the most cost-effective process is utilized.

Water Treatment Facility Process and Technology Alternatives Analysis. Once the water quality is thoroughly understood, the Town's Engineer will complete an evaluation of the available water treatment process and technology alternatives to best treat the Town's raw water. The alternatives evaluation will analyze each available option with respect to capital and long-term operations costs, operational complexity, necessary operator expertise and certification level, land requirements to site the facilities, residuals management needs, necessary treatment process component redundancy, building requirements, chemicals needed for the process, and monitoring, controls, electrical, and instrumentation systems necessary to power and control the facilities. Decision matrices will be developed to be used by the Town's leadership to score and rank the different factors to help with the selection of the preferred treatment processes and technologies to remove the iron, manganese, and arsenic.

Combined vs. Separate Treatment Facilities. The 2019 WSMP recommended that the Town construct two separate treatment plants; one to treat the iron and manganese and one to treat the arsenic at the North Well. As part of the alternatives analysis process, the Town's Engineer will evaluate the option of designing and constructing one centralized water treatment plant that would treat the iron and manganese from the existing wells and arsenic from the North Well. Although the North Well is approximately 3 miles from Town, it may be less expensive to construct a dedicated water line from the North Well south to town and one water treatment plant to treat the water from all wells rather than having two water treatment plants to operate and maintain. Furthermore, common treatment processes to treat arsenic utilize chemical addition using iron compounds (ferric chloride) as part of the

process. Since the Town's water already has elevated levels of iron, the Town may be able to take advantage of the naturally occurring iron in the treatment process and reduce the amount of chemicals needed for arsenic treatment.

Pilot Water Treatment Setup and Testing. Once the Town has selected the preferred water treatment process and technology, it is imperative that a pilot test be run to help ensure the selected processes and technologies for water treatment will function as intended at full-scale design and operation. The pilot test will be run for a minimum of three months. This will allow enough time to gather adequate data for full-scale design purposes. The pilot testing will include raw water and finished water quality sampling and testing, chemical addition rates, backwash volumes and rates, and filter media regeneration rates, loading rates, etc. The Town's Engineer will assist Lakeview staff with procuring the services of a qualified pilot testing firm that will design, set up, and help run the pilot testing equipment and assist with developing and performing a water quality testing and sampling program. The Town's Engineer will prepare water treatment pilot test report(s) to document and summarize the results of the pilot testing.

Pre-Design Report. Once the pilot water treatment testing is completed and the selected process and technologies confirmed to function as intended to treat iron, manganese, and arsenic, the Town's Engineer will prepare a Pre-Design Report (PDR). The objective of the PDR is to describe in more detail the key factors and requirements upon which the design improvements will be based. The PDR will include options with respect to the overall water treatment facilities components including treatment units and processes; process and yard piping, valving, and pumping; residuals management and disposal; building types; building mechanical, plumbing, and electrical components; and electrical systems and treatment system(s) monitoring, controls, and instrumentation.

Additionally, the PDR will evaluate in detail other components of the recommended improvements identified in the Town's WSMP such as distribution system, rehabilitation of existing wells, and security fencing of the spring water source. The PDR will document all decisions made by the Town and will direct the project into the 30 percent design phase.

Public Involvement/Outreach. Developing a public outreach or public relations program for this project will be developed to help to gain public support and help keep the project moving forward. It will also provide opportunities for the public to see firsthand the efforts of Lakeview's leadership and public works staff that are being made to improve the quality of the Town's water. The Town's Engineer will work with the Town's leadership and staff with the public relations efforts, producing graphics, figures, and renderings for press releases, public meetings, websites, and other social media platforms.

Design Surveying and Mapping. The Town's Engineer will retain an aerial mapping firm, for providing design-grade aerial mapping services. Aerial topographic base mapping at 1-foot contours of the entire area within the Town's urban growth boundary will be provided for preliminary and final design purposes. In support of the aerial mapping services, the Engineer's survey crew will develop horizontal and vertical survey control as necessary to complete accurate flight lines and light detection and ranging data. The Engineer's survey crew will complete the necessary surveying at the five existing well pump stations, the new water treatment facility site, the route of the new North Well transmission line (if needed), routes of new transmission lines from existing wells to the new water treatment facility (if needed), and the site of the existing main spring area. The Engineer's survey crew will complete the necessary design survey of the various identified sites in the areas of potential impact to field locate all existing above- and belowground utilities, known culverts, existing building structures, etc. Based on the aerial topographic base mapping and the design field surveying, the Engineer will prepare base mapping in Autodesk Civil 3D version 2020, in Oregon State Plane Coordinate System - South Zone for preliminary and final design purposes, and for the creation of the construction Drawings.

30 Percent Design. Utilizing the PDR, aerial topographic mapping and field survey and established design criteria, the Town's Engineer will prepare 30 percent design drawings. These drawings will add detail to the selected alternatives and verify assumptions made at the preliminary design phase. The 30 percent drawings will contain all the elements described in the PDR and generally convey the type, size, and location of the major facilities and equipment. A 30 percent engineer's estimate of construction costs will be developed to help ensure the project is tracking on budget. The 30 percent design drawings and cost estimate will be presented to the Town and other stakeholders for review, comment, and approval.

Phase 2 - Final Design

60 Percent Design Package. Utilizing the PDR, 30 percent design drawings, decision log, Town comments, and other previously developed information, the Town's Engineer will refine the 30 percent design drawings and will add further details to prepare 60 percent design drawings and draft Technical Specifications. The construction cost estimate will be updated and submitted along with the 60 percent design drawings and draft Technical Specifications to the Town for review.

90 Percent Design Package. Following a similar process for the 60 percent design submittal, a 90 percent design package will be developed for Town review. Additionally, a construction schedule will be developed, and the construction cost estimate will be further refined. After receiving final comments from the Town, the Engineer will incorporate the Town's comments into the design document and assemble the final bid documents package.

100 Percent Bid Documents. The Town's Engineer will incorporate 90 percent review comments into 100 percent bid documents. Final DWS and funding agency approval will be based on review of the 100 percent submission as well as final Town review and approval. 100 percent bid documents will be prepared and made ready to bid the project.

PHASE 3 - Construction Engineering and Construction of Improvements

After 100 percent bid documents have been completed, approved, and made ready for bidding, the Engineer will assist the Town with advertising the project for bids, attend and conduct a pre-bid conference, issue addenda, and assist the Town with bid opening procedures. The Town's Engineer will evaluate bids received and complete the required bidder responsibility determination process. The Engineer will provide a recommendation to the Town Council for awarding the bid to the successful bidder and will assist with the construction contract execution process.

After the construction contract award and execution process is complete, the Town's Engineer will prepare a pre-construction meeting agenda and conduct the meeting in Lakeview. Agendas and minutes for each construction meeting will be prepared and distributed to the Town, contractor, and others, as applicable. Additionally, the Town's Engineer we will respond to requests for information, review submittals, prepare contractor applications for payment, and assist with negotiations, preparation, and processing of necessary change order proposals.

The Town's Engineer will provide full-time project observation services to help ensure that the project is being constructed in accordance with the Contract Documents. The Engineer will coordinate with the Town and contractor and assist with systems testing, startup, and operator training. The Engineer will assist the Town with completing the project closeout process including participating in a project walk-through with the Town and contractor at substantial completion to inspect the project and generate a punch list as well as a final completion inspection to verify the project was completed in accordance with the Contract Documents. The Town's Engineer will also prepare necessary project closeout paperwork, provide recommendation for final payment, and prepare Record Drawings.

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An operations and maintenance (O&M) manual will be prepared for use by the Town's public works staff. The O&M manual will be submitted to the DWS for review and approval. The O&M manual will be critical to document treatment plant O&M to assist the plant operator after the project is finished.

Proposed Project Elements

The following are the project elements proposed to be constructed/rehabilitated:

1. New water treatment facility to treat the groundwater to remove iron, manganese, and arsenic. The new water treatment facility would include a building to house treatment equipment, pumps, process piping, chemical feed systems, controls, electrical equipment, etc. It would include the necessary site work, process and yard piping, sludge management system, painting, security fencing, and electrical, controls, instrumentation, and SCADA systems.
2. Rehabilitation of existing wells and upgrades to existing well pump stations.
3. Transmission water lines to tie all well pump stations into the new proposed water treatment facility (if adequate funding is available).
4. New system controls, monitoring, and SCADA systems to provide automated system operations, and enhanced monitoring.
5. Distribution piping replacements to address old leaking pipes in key areas of town (if adequate funding is available).
6. Security fencing at the existing spring collection area (if adequate funding is available).

Does the entity either own, or have a permanent easement or right of way, for all properties on which the improvements will take place? ☒ Yes ☐No

If no, explain:

The Town has purchased the property where the water treatment facility site will be.

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Has a licensed engineer aided you in project development and the completion of this form? ☒Yes ☐No

For engineering services for the project, the Town has contracted with:

Anderson Perry & Associates, Inc.
2659 SW 4th Street #200
Redmond, Oregon 97756
541-362-8682

Project Budget Line Items and Estimated Cost			
Project Budget Line Items	**Leg Amt (ARPA)**	**Other Funds**	**Total**
Engineering (Preliminary, Final Design & Construction)	$2,172,000		$2,172,000
Construction	$10,790,000		$10,790,000
Construction Contingency	$1,619,000		$1,619,000
Administration	$30,000		$30,000
Legal	$25,000		$25,000
Water Testing	$20,000		$20,000
Water Treatment Facility Site Property Acquisition	$135,000		$135,000
Pilot Water Treatment Setup and Testing	$60,000		$60,000
Well Drilling Company to Complete Well Rehabilitation Evaluation	$125,000		$125,000
Permit Application(s) and Fees	$15,000		$15,000
Regulatory Review(s) and Fees	$9,000		$9,000
See attached preliminary cost estimate for a more detailed project budget breakdown			
TOTAL	**$15,000,000**		**$15,000,000**

Project budget prepared by:
Name: Troy Baker, P.E.
Title: Senior Engineer
Organization: Anderson Perry & Associates, Inc.
Date: March 15, 2022

Source of Other Funds and Status (Committed / Budgeted)		
Organization	**Status**	**Amount**
TOTAL		

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Proposed Work Plan List project activity milestones with estimated start and completion dates.		
Activity	**Estimated Date**	
	Start	**Completion**
Engineering Service Contract Development	January 2022	March 2022
Hold Project Kick Off Meeting	April 2022	April 2022
Water Quality Sampling, Testing, and Data Analysis	April 2022	May 2022
Pilot Water Treatment Setup and Testing (3 months)	September 2022	November 2022
Pre-Design Report Completion	November 2022	January 2023
Land Acquisition/Easements	February 2022	March 2022
Rehabilitation Evaluation of Existing Wells	May 2023	November 2023
30 Percent Design	January 2023	May 2023
60 Percent Design	June 2023	October 2023
90 Percent Design	November 2023	February 2024
100 Percent Design	February 2024	March 2024
Bidding	April 2024	May 2024
Construction (1.5 years)	June 2024	December 2025
System Testing, Startup and Operator Training	November 2025	November 2025
Post Construction/Warranty	December 2025	December 2026

Permits List the permits and regulatory authorizations needed for the Project to be ready to proceed with construction:					
Permit Type	Review Agency	Description	Status	Actual or Expected	Approval Date
NPDES Stormwater Construction Permit	DEQ	1200-C	Pending	March 2024	

Attachment(s)

Please attach any available documents to help determine project readiness including but not limited to the following:

- Site maps,
- Cost estimates, and
- Planning or preliminary studies.
- Additional comments