SCHEDULE 1.1
SCOPE OF WORK
PHASE 1 - PRELIMINARY ENGINEERING
March 9, 2022

PROJECT UNDERSTANDING

The Town of Lakeview, Oregon (Town) intends to complete improvements to its water system as generally outlined in the state-approved 2018 Water System Master Plan (WSMP). Improvements include a new water treatment facility to treat iron, manganese, and arsenic; rehabilitation of Wells No. 2, 7, and 8; upgrades to Well Pump Stations No. 2, 7, 8, 9, and the North Well Pump Station; various replacements to the distribution system piping; and improvements to the main spring area security fencing and spring line.

The Town has secured project funding through the American Rescue Plan Act (ARPA) program for completion of the proposed water system improvements. The ARPA grant funds were awarded by Governor Kate Brown's office. The ARPA funds are administered and managed by Business Oregon.

SCOPE OF WORK

Anderson Perry & Associates, Inc. (Engineer), working with Adkins Engineering & Surveying, LLP (Adkins), agrees to provide preliminary engineering services as outlined below. The scope of work (SOW) outlined herein is limited to the preliminary engineering services (Phase 1). Upon completion of the preliminary engineering tasks and upon authorization by the Town to proceed, an amendment to this SOW will be prepared to add the final design (Phase 2) and construction engineering services (Phase 3) SOWs to the Professional Services Agreement between the Town and Engineer.

Upon authorization by the Town to proceed, the Engineer shall complete the following preliminary engineering tasks under Phase 1 of the project:

PHASE 1 - PRELIMINARY ENGINEERING

Task 1A - Project Management

The Engineer's project manager and Adkins will collaborate with the Town to develop the best approach to delivering the preliminary design tasks. The framework for the Project Management Plan will be presented and developed at a kickoff meeting, including a project charter, communication plan, stakeholder register, risk register, issues log, decision log, and work breakdown structure.

The Engineer's project manager and Adkins will meet with the Town on a regular, recurring basis (minimum of once every two weeks). The project status meetings will be held in-person or virtually, as appropriate and as needed. These meetings will be held separate from other technically focused meetings that will be utilized to advance the design of the project. The project status meetings will be used to review and track the project scope, schedule, and budget, as well as to review the project risk register, issues log, and decision log. These documents will be used to quickly identify action items that will be critical to project

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success. Additionally, the stakeholder register and communication plan will be reviewed and updated as the project progresses to ensure proper communication is reaching the necessary stakeholders for continued project support and success. This information tracking is not intended to be labor intensive. Rather, the information will be a brief written summary to help ensure all parties are in agreement as the project advances.

If desired by the Town, the Engineer's project manager will manage all subconsultants and engage them on a regular basis to track the project scope, schedule, and budget. Action items for each subconsultant will be identified and coordinated across all technical disciplines to ensure a unified, effective, and efficient delivery of the work. Monthly invoices will be assembled in a timely manner and reviewed with subconsultants prior to submission to the Town.

The Engineer's project manager will attend Town Council meetings on a regular basis (at least every three months) to update the Council members on project progression and status.

Task 1B - Kickoff Meeting and Existing Water System Facilities Tour

A kickoff meeting with the Town, the Engineer, and Adkins will be held to discuss various technical aspects of the project and tour the water system facilities to help gain additional knowledge of the various components of the water system. All appropriate subconsultants shall attend the kickoff meeting and tour the existing water system facilities.

Task 1C - 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 water sources is thoroughly understood through adequate sampling, testing, and data analysis. To that end, the Engineer will analyze the existing available water quality data and assist the Town with developing an appropriate sampling and testing program to help gather additional data needed to ensure the design of the water treatment facilities is based on thoroughly understood water quality. Understanding the water quality will help ensure the most appropriate technology is identified and the most cost-effective treatment process is utilized. The Engineer will summarize the results of the water quality testing and data analysis in a Technical Memorandum and deliver it to the Town.

Task 1D - Water Treatment Facility Process and Technology Alternatives Analysis

The Engineer and Adkins 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, and monitoring, controls, electrical, and instrumentation systems necessary to power and control the facilities. As part of the alternatives analysis process, the Engineer will complete an evaluation comparing the

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estimated capital and long-term operation and maintenance costs of designing and constructing one centralized water treatment facility to treat iron, manganese, and arsenic from the existing wells versus two separate water treatment facilities as recommended in the WSMP. The Engineer will develop decision matrices to be used by the Town's staff to score and rank the different factors to help select the preferred treatment process and technology to employ to remove the iron, manganese, and arsenic. A Technical Memorandum summarizing the results of the evaluation and identifying the Town's preferred treatment process and technology will be prepared and delivered to the Town.

Task 1E - Pilot Water Treatment Setup and Testing

Once the Town has selected the preferred water treatment process and technology, a pilot test will be designed, set up, and performed to help ensure the selected process and technology for water treatment will function as intended at full-scale design and operation. Prior to the setup and start of the pilot test, the Engineer will submit the proposed pilot test to the Oregon Health Authority - Drinking Water Services (DWS) for review and approval. The pilot test will need to run for a minimum of three months. This will allow enough time to gather adequate data for the 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, filter media regeneration rates, loading rates, etc. The Engineer will assist the Town's staff with procuring the services of a qualified pilot testing contractor 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 Engineer will prepare a water treatment pilot test report to document and summarize the results of the pilot testing. This report will be delivered to the Town. Pilot testing is necessary to confirm the proposed treatment process will properly work at full-scale operation.

Task 1F - Pre-Design Report

Once the pilot water treatment testing is completed and the selected process and technologies confirmed, the Engineer and Adkins 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 designed 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 replacements to the distribution system piping, rehabilitation of existing wells, well pump station improvements, and security fencing of the main spring area and spring line improvements. The PDR will document all decisions made by the Town and will direct the project into the 30 percent design phase. The PDR document will be prepared and delivered to the Town and the DWS.

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Task 1G - Assistance with Land Acquisition/Easements

The Engineer will assist the Town with determining the necessary land area required to site the selected new water treatment facility and will confirm that the site will be sufficient for these purposes. The Engineer will also assist the Town with acquisition of easements, if any, that may be needed to construct the new water treatment facility.

Task 1H - Design Surveying and Mapping

The Engineer will retain GeoTerra, Inc., 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 for GeoTerra, Inc., 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.

Task 1I - 30 Percent Design

Utilizing the PDR, site mapping, and established design criteria, the Engineer and Adkins will prepare 30 percent design Drawings. These Drawings will add detail to the information presented in the PDR and verify the assumptions made in the PDR. 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 on budget. The 30 percent design Drawings and cost estimate will be delivered to the Town and other appropriate stakeholders/agencies for review, comment, and approval.

Task 1J - Rehabilitation Evaluation of Existing Wells

To determine the most appropriate techniques/methodologies for rehabilitation of Wells No. 2, 7, and 8, the Engineer will assist the Town with completing a rehabilitation evaluation. The Engineer will assist the Town with procurement of a qualified well drilling company capable of removing the existing well pumps and performing the downhole closed-circuit television (TV) work necessary to observe the downhole condition of the well. The videos made during the TV work of each well will be used to determine the most appropriate techniques/methodologies for rehabilitating the wells. The Engineer will prepare and deliver to the Town a Technical Memorandum summarizing the results of the rehabilitation evaluation and making

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recommendations on the most appropriate technique/method to employ to rehabilitate each of the three wells. It may be prudent to consider completing well rehabilitation work as quickly as possible, since all pumping equipment will already be removed from the well. This option can be discussed once preferred rehabilitation alternatives are established for each well.

Task 1K - Public Involvement/Outreach Assistance

The Engineer will assist the Town in developing a public outreach and/or public relations program that will help gain public support and keep the project moving forward. The program will also provide opportunities for the public to see the efforts of the Town's staff firsthand and leadership that are being made to improve the quality of the water. The Engineer will work with the Town's staff and leadership to explore options for public relations efforts. The Engineer will assist the Town with producing graphics, figures, renderings for press releases, and display boards; attend and present at public meetings; and help create postings to be placed on the Town's website and social media platforms.

ESTIMATED PHASE 1 PROJECT SCHEDULE

The Engineer will perform the services in accordance with the following estimated schedule:

Task	Task Description	Completion Time Frame
1A	Project Management	April 2023
1B	Kickoff Meeting and Existing Water System Facilities Tour	April 2022
1C	Water Quality Sampling, Testing, and Data Analysis	May 2022
1D	Water Treatment Facility Process and Technology Alternatives Analysis	August 2022
1E	Pilot Water Treatment Setup and Testing	November 2022
1F	Pre-Design Report	January 2023
1G	Assistance with Land Acquisition/Easements	January 2023
1H	Design Surveying and Mapping	November 2022
1I	30 Percent Design	May 2023
1J	Rehabilitation Evaluation of Existing Wells	November 2022
1K	Public Involvement/Outreach Assistance	April 2023

Completion of these tasks by the timeframe outlined herein is dependent on timely services rendered by the pilot testing and well drilling firms and timely reviews being completed by the Town and others. Delays in reviews and other items that are not controlled by the Engineer could result in schedule extensions being required.

COMPENSATION FOR ENGINEERING SERVICES

The Engineer's Hourly Fee Schedule is included as Schedule 2.0 to this SOW. Schedule 2.1 to this SOW provides a breakdown of the estimated hours and fees associated with completion of tasks associated with Phase 1 - Preliminary Engineering.

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The Town will compensate the Engineer for "Phase 1 - Preliminary Engineering" on a time and materials basis, plus direct reimbursable expenses, in accordance with the attached Hourly Fee Schedule. The total fee is estimated to be $537,280. This amount will not be exceeded without notification to and approval from the Town.

This estimated fee is approximately 4 percent of the $12 million estimated construction cost, which is a typical percentage range for a 30 percent design for a project of this complexity and nature.

PHASE 1 SCOPE OF WORK EXCLUSIONS

This SOW and estimated fees do not include the following:

- Environmental assessments, biological assessments, cultural resource evaluations, wetland delineations, mitigation plans, or other related environmental documents
- Preparation of permit applications
- Funding acquisition assistance
- Property boundary land surveying
- Design survey for water distribution system improvements
- Any design of water distribution system improvements
- Pilot testing costs (equipment mobilizing/demobilizing, setup, operating and maintaining, water sampling and testing, and associated equipment necessary to perform the pilot test)
- Well drilling company costs
- Water sampling and testing costs
- Geotechnical investigations/reports
- Water rights related tasks

Many of these excluded tasks will be included in the later phases of the project.

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SCHEDULE 2.0

engineering ▪ surveying ▪ natural resources

HOURLY FEE SCHEDULE

March 1, 2022

PROFESSIONAL TECHNICAL STAFF

TECHNICIANS

Technician I	$ 65.00
Technician II	$ 75.00
Technician III	$ 80.00
Technician IV	$ 90.00
Technician V	$ 95.00
Technician VI	$100.00
Technician VII	$105.00
Senior Technician I	$110.00
Senior Technician II	$120.00
Senior Technician III	$125.00
Senior Technician IV	$135.00
Senior Technician V	$145.00
Senior Technician VI	$155.00
Senior Technician VII	$165.00
Senior Technician VIII	$170.00
Senior Technician IX	$185.00

ENGINEERING

Engineering Technician I	$105.00
Engineering Technician II	$110.00
Engineering Technician III	$115.00
Staff Engineer I	$120.00
Staff Engineer II	$125.00
Project Engineer I	$130.00
Project Engineer II	$135.00
Project Engineer III	$145.00
Project Engineer IV	$150.00
Project Engineer V	$155.00
Project Engineer VI	$165.00
Project Engineer VII	$170.00
Senior Engineer I	$175.00
Senior Engineer II	$180.00
Senior Engineer III	$185.00
Senior Engineer IV	$190.00
Senior Engineer V	$200.00
Senior Engineer VI	$205.00
Senior Engineer VII	$210.00
Senior Engineer VIII	$225.00

ARCHAEOLOGY

Archaeological Technician I	$ 60.00
Archaeological Technician II	$ 70.00
Staff Archaeologist I	$ 75.00
Staff Archaeologist II	$ 80.00
Project Archaeologist I	$ 85.00
Senior Archaeologist I	$105.00
Senior Archaeologist II	$120.00

PROJECT REPRESENTATIVES

Project Representative I	$ 95.00
Project Representative II	$100.00
Project Representative III	$105.00
Project Representative IV	$110.00

OVERTIME

Overtime Surcharge	$ 35.00

SURVEYORS AND CREWS

Survey Technician I	$ 70.00
Survey Technician II	$ 85.00
Survey Technician III	$ 90.00
Survey Crew Chief I	$ 95.00
Survey Crew Chief II	$100.00
Survey Crew Chief III	$110.00

Professional Land Surveyor I	$130.00
Professional Land Surveyor II	$140.00
Professional Land Surveyor III	$155.00
Professional Land Surveyor IV	$175.00
Professional Land Surveyor V	$185.00
GPS Total Station	$ 40.00
Robotic Survey Station	$ 30.00

Total Station	$ 25.00
ATV (4-hour minimum)	$ 32.00
Resource Grade GPS	$ 22.00
Electrofisher	$ 25.00
Unmanned Aircraft System (UAS/Drone)	$ 45.00
GIS RTK GPS/GNSS Unit	$ 32.00

OUT OF TOWN WORK

Mileage will be charged at the applicable IRS rate for vehicles, which is $0.585 per mile for standard highway vehicles as of January 1, 2022. Mileage will be charged at $0.75 per mile for vans and pickup trucks. Subsistence will be charged either per diem or actual cost, per contract. Lodging will be billed at actual cost.

OTHER

Other miscellaneous, direct, and outside expenses, including special Consultants, will be charged at actual cost plus 10%.

Expert Witness will be charged at two times the standard hourly rate.

All accounts unpaid 30 days after date of invoice may be charged a service fee of 1.0% per month.

This Hourly Fee Schedule is revised annually on or around March 1.

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SCHEDULE 2.1
FEE ESTIMATE

Client: Town of Lakeview, Oregon
Project: Water System Improvements
Task Phase 1 - Preliminary Engineering
Job No.: 214-01
Prepared by: Troy Baker, P.E.
Date: March 9, 2022

		Hours														
Task	Task Description	Senior Engineer TB	Project Engineer LS	Staff Engineer BW	Engineering Technician ZM	Quality Control BB	Drafting	Surveyor II JM	Surveyor III RS	Survey Crew Chief I CB	Survey Technician I NE	Expenses	Adkins Engineering (Subconsultant)	Fluent Engineering (Subconsultant)	Geo Terra, Inc. (Subconsultant)	Totals
1A	Project Management	180										$ 1,000				$ 38,800.00
1B	Kickoff Meeting/Facilities Tour	12	16	12	12							$ 750				$ 8,710.00
1C	Water Quality Sampling, Testing, and Data Analysis	6		24	16											$ 6,500.00
1D	WTF Process and Technology Alternatives Analysis	8	24	40		3										$ 11,280.00
	WTF Process/Technology Alternatives Analysis Review Meeting	12														$ 2,520.00
1E	Pilot Water Treatment Setup and Testing	8	16	40	16											$ 11,400.00
	Pilot Testing Report Review Meeting	12														$ 2,520.00
1F	Pre-Design Report	2	2				60									$ 9,710.00
	Pre-Design Report Review Meeting	12	16		16	5										$ 8,040.00
1G	Assistance with Land Acquisition/Easements	4	8	8				24	4							$ 7,520.00
1H	Design Surveying and Mapping							24	16	115	80	$ 6,950			$ 32,000	$ 62,450.00
1I	30 Percent Design	40	225	200	150	24	450									$ 160,035.00
	30 Percent Design Review Meeting	12										$ 200				$ 2,720.00
1J	Rehabilitation Evaluation of Existing Wells	8	16	40	16											$ 11,400.00
1K	Public Involvement/Outreach Assistance	16	12				30									$ 9,600.00
	Total Hours	**332**	**335**	**364**	**226**	**32**	**540**	**48**	**20**	**115**	**80**					
	Hourly Billing Rate	**$ 210.00**	**$ 145.00**	**$ 135.00**	**$ 125.00**	**$ 240.00**	**$ 150.00**	**$ 160.00**	**$ 150.00**	**$ 100.00**	**$ 72.00**					
	Total Fee	**$ 69,720.00**	**$ 48,575.00**	**$ 49,140.00**	**$ 28,250.00**	**$ 7,680.00**	**$ 81,000.00**	**$ 7,680.00**	**$ 3,000.00**	**$ 11,500.00**	**$ 5,760.00**	**$ 8,900.00**	**$ 87,275.00**	**$ 96,800.00**	**$ 32,000.00**	**$ 537,280.00**

WTF = water treatment facility