

PROFESSIONAL SERVICES AGREEMENT

This Professional Services Agreement (this "Agreement") is made and entered into effective on June 14, 2022 (the "Effective Date") between City of John Day ("City"), an Oregon municipal corporation, whose address is 450 E Main Street, John Day, Oregon 97845, and CwM H2O, LLC ("Consultant"), an Oregon limited liability company, whose address is 1319 SE MLK Boulevard Suite 204, Portland, Oregon 97214.

RECITAL:

City desires to retain Consultant to perform certain on-call energy, water, and environmental consulting services and related services. Subject to the terms and conditions contained in this Agreement, Consultant will perform the Services (as defined below) for and on behalf of City.

AGREEMENT:

NOW, THEREFORE, in consideration of the parties' mutual obligations contained in this Agreement, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto hereby agree as follows:

1. Energy, Water and Environmental Consulting Services and Related Services.

1.1 Services; Standards. Subject to the terms and conditions contained in this Agreement, Consultant will perform the following energy, water, and environmental consulting services and related services for and on behalf of City (collectively, the "Services"): (a) those services and tasks identified in Consultant's "Water Resources, Water Rights, Groundwater Monitoring and Geotechnical Services Statement of Qualifications" dated June 28, 2021 attached hereto as Exhibit A (the "Proposal"); and (b) all other necessary or appropriate services customarily provided by Consultant in connection with its performance of those services identified in the Proposal. Consultant will (x) consult with and advise City on all matters concerning the Services reasonably requested by City, (y) communicate all matters and information concerning the Services to the city manager (or his or her designee) and report directly to the city manager (or his or her designee), and (z) devote such time and attention to performance of the Services as City deems necessary or appropriate.

1.2 On-Call Services. Notwithstanding anything contained in this Agreement to the contrary, City, in City's sole discretion, shall direct Consultant to perform the Services described in the Proposal through written Task Orders. Consultant will not provide the On-Call Services unless and until City provides Consultant written notice that the Services are requested (which notice will identify the specific Services requested, budget with not-to-exceed cost, and schedule for completing the Services). Consultant will timely provide any On-Call Services requested by City subject to and in accordance with this Agreement.

1.3 Coordination; Schedule of Services. Consultant will perform the Services as and when requested by City. Consultant will coordinate its performance of the Services with the city manager (or his or her designee). Consultant and City will routinely consult with each other to ensure effective and efficient provision of the Services.

1.4 Conditions Precedent. Notwithstanding anything contained in this Agreement to the contrary, City's performance of its obligations under this Agreement is conditioned on Consultant's performance of its obligations under this Agreement, including, without limitation, those Consultant obligations identified under Section 4.4.

2. Compensation.

2.1 Compensation. Subject to the terms and conditions contained in this Agreement, in consideration of Consultant's timely and faithful performance of its obligations under this Agreement, City will pay Consultant based on hourly rates defined in Consultant's Proposal. Consultant will submit monthly invoices to City concerning that portion

of the Services performed by Consultant during the immediately preceding month (each an "Invoice"). Each Invoice will contain the following information: (a) a summary of the Services (including any Additional Services, if applicable) performed by Consultant (and by whom); and (b) all other information and documentation City may reasonably request. City will pay the amount due under each Invoice within thirty (30) days after City has reviewed and approved the applicable Invoice. City's payment will be accepted by Consultant as full compensation for performing the Services to which the Invoice relates. No compensation will be paid by City for any portion of the Services not performed. Notwithstanding anything contained in this Agreement to the contrary, total compensation payable by City under this Agreement for performance of the Services will not exceed \$150,000.

2.2 No Benefits; Reimbursement. City will not provide any benefits to Consultant, and Consultant will be solely responsible for obtaining Consultant's own benefits, including, without limitation, insurance, medical reimbursement, and retirement plans. Consultant will provide, at Consultant's cost and expense, all materials, equipment, and supplies necessary or appropriate to perform the Services.

3. Relationship.

3.1 Independent Contractor. Consultant is an independent contractor of City. Consultant is not an employee of City. Consultant will be free from direction and control over the means and manner of performing the Services, subject only to the right of City to specify the desired results. This Agreement does not create an agency relationship between City and Consultant and does not establish a joint venture or partnership between City and Consultant. Consultant does not have the authority to bind City or represent to any person that Consultant is an agent of City. Consultant has the authority to hire other persons to assist Consultant in performing the Services (and has the authority to fire such persons).

3.2 Taxes; Licenses. City will not withhold any taxes from any payments made to Consultant, and Consultant will be solely responsible for paying all taxes arising out of or resulting from Consultant's performance of the Services, including, without limitation, income, social security, workers' compensation, and employment insurance taxes. Consultant will be solely responsible for obtaining all licenses, approvals, and certificates necessary or appropriate to perform the Services.

4. Representations; Warranties; Covenants.

In addition to any other Consultant representation, warranty, and/or covenant made in this Agreement, Consultant represents, warrants, and covenants to City as follows:

4.1 Authority; Binding Obligation; Conflicts. Consultant is duly organized, validly existing, and in good standing under applicable Oregon law. Consultant has full power and authority to sign and deliver this Agreement and to perform all Consultant's obligations under this Agreement. This Agreement is the legal, valid, and binding obligation of Consultant, enforceable against Consultant in accordance with its terms. The signing and delivery of this Agreement by Consultant and the performance by Consultant of all Consultant's obligations under this Agreement will not (a) breach any agreement to which Consultant is a party, or give any person the right to accelerate any obligation of Consultant, (b) violate any law, judgment, and/or order to which Consultant is subject, and/or (c) require the consent, authorization, and/or approval of any person, including, without limitation, any governmental body. By signing below, Consultant certifies that Consultant (and Consultant's principals) are not debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in and/or performing the Services under this Agreement.

4.2 Licenses; Quality of Services. Prior to Consultant's execution of this Agreement, Consultant obtained all licenses, approvals, and/or certificates necessary or appropriate to perform the Services. Consultant will perform the Services diligently, in good faith and in a professional manner, consistent with the degree of care and skill ordinarily exercised by the same or similar professional consultants, and consistent with the terms and conditions contained in this Agreement. The Services will be performed subject to and in accordance with the

Laws (as defined below). Consultant will be solely responsible for the Services. Consultant will make all decisions called for promptly and without unreasonable delay. All materials and documents prepared by Consultant will be accurate, complete, unambiguous, prepared properly, and in compliance with the Laws.

4.3 Insurance. During the term of this Agreement, Consultant will obtain and maintain, in addition to any other insurance required under this Agreement, the following minimum levels of insurance: (a) general liability insurance for all losses or claims arising out of or related to Consultant's performance of its obligations under this Agreement (including, without limitation, damages as a result of death or injury to any person or destruction or damage to any property) with limits of no less than \$1,000,000.00 per occurrence, \$2,000,000.00 in the aggregate; (b) comprehensive automobile liability insurance for all owned, non-owned, and hired vehicles (if any) that are or may be used by Consultant in connection with Consultant's performance of the Services with limits of no less than \$1,000,000.00 per occurrence, \$2,000,000.00 in the aggregate; (c) errors and omissions insurance with limits of no less than \$1,000,000.00; and (d) workers' compensation insurance in form and amount sufficient to satisfy the requirements of applicable Oregon law. Each liability insurance policy (except errors and omissions insurance) required under this Agreement will be in form and content satisfactory to City, will list City and each City Representative (as defined below) as an additional insured, and will contain a severability of interest clause; the workers' compensation insurance will contain a waiver of subrogation in favor of City. The insurance Consultant is required to obtain under this Agreement may not be cancelled without ten (10) days' prior written notice to City. Consultant's insurance will be primary and any insurance carried by City will be excess and noncontributing. Consultant will furnish City with appropriate documentation evidencing the insurance coverage (and provisions) and endorsements Consultant is required to obtain under this Agreement upon Consultant's execution of this Agreement and at any other time requested by City. If Consultant fails to maintain insurance as required under this Agreement, City may terminate this Agreement due to Consultant's default and pursue all rights and remedies provided under this Agreement and/or applicable law.

4.4 Compliance with Laws. Consultant will comply and perform the Services in accordance with the Laws. Without otherwise limiting the generality of the immediately preceding sentence, Consultant will comply with each obligation applicable to Consultant and/or this Agreement under ORS 279B.220, 279B.225, 279B.230, and 279B.235, which statutes are incorporated herein by reference. Prior to the Effective Date, Consultant obtained all licenses, approvals, and/or certificates necessary or appropriate to perform the Services. For purposes of this Agreement, the term "Law(s)" means all applicable federal, state, and local laws, regulations, restrictions, orders, codes, rules, and/or ordinances related to or concerning, whether directly or indirectly, Consultant, this Agreement, and/or the Services, including, without limitation, Oregon's prevailing wage rate laws (ORS 279C.800 through 279C.870) if applicable, all applicable City ordinances, resolutions, policies, regulations, orders, restrictions, and guidelines, all as now in force and/or which may hereafter be amended, modified, enacted, or promulgated.

4.5 Indemnification. Consultant will indemnify and hold City and each present and future City employee, officer, and representative (individually and collectively, "City Representative(s)"), harmless for, from, and against all claims, actions, proceedings, damages, liabilities, injuries, losses, and expenses of every kind, whether known or unknown, including, without limitation, attorney fees and costs, resulting from or arising out of the following: (a) damage, injury, and/or death to person or property caused by Consultant's acts and/or omissions (and/or the acts and/or omissions of Consultant's members, managers, directors, officers, shareholders, employees, agents, representatives, consultants, and/or contractors (individually and collectively, "Consultant Representative(s)")); (b) Consultant's failure to pay any tax arising out of or resulting from the performance of the Services; and/or (c) Consultant's breach and/or failure to perform any Consultant representation, warranty, covenant, and/or obligation contained in this Agreement. Consultant's indemnification obligations provided in this Section 4.5 will survive the termination of this Agreement.

4.6 Assignment of Studies and Reports. Consultant will assign all studies, reports, data, documents, and/or materials of any kind produced under this Agreement (individually and collectively, the "Deliverable(s)") to City upon the earlier of City's request or termination of this Agreement. All Deliverables provided to City will become the property of City who may use them without Consultant's permission for any proper purpose relating

to the Services, including, without limitation, additions to or completion of the Services. City acknowledges that City's modification and/or reuse of the Deliverables without Consultant's prior approval will be at City's sole risk. Consultant will defend all suits or claims for infringement of patent, trademark, and/or copyright for which Consultant is responsible (including, without limitation, any claims which may be brought against City), and Consultant will be liable to City for all losses arising therefrom, including costs, expenses, and attorney fees.

4.7 Records. Consultant will maintain complete and accurate records concerning all Services performed, the number of hours each person spent to perform the Services, and all documents produced under this Agreement for a period of five years after the termination of this Agreement. Consultant's records concerning the Services will be maintained in accordance with sound accounting practices and in an acceptable cost account system. Consultant agrees to provide City access to any books, documents, papers, and/or records of Consultant which are directly pertinent to this Agreement and/or the Services, including, without limitation, Consultant's time and billing records, for the purpose of making audit, examination, excerpts and transcriptions. Consultant agrees to maintain all books, records, and/or reports required under this Agreement for a period of no less than five years after final payment is made and all pending matters are closed.

4.8 Confidential Information. During the term of this Agreement, and at all times thereafter, Consultant will maintain all Confidential Information (as defined below) in the strictest confidence and will not directly or indirectly use, communicate, or disclose any Confidential Information to any person, or remove or make reproductions of any Confidential Information, except that Consultant may (a) use Confidential Information to perform the Services to the extent necessary, and (b) communicate or disclose Confidential Information in accordance with a judicial or other governmental order or as required by applicable law, but only if Consultant promptly notifies the city manager of the order and complies with any applicable protective or similar order. Consultant will promptly notify the city manager of any unauthorized use, communication, or disclosure of any Confidential Information and will assist City in every way to retrieve any Confidential Information that was used, communicated, or disclosed by Consultant and will exert Consultant's best efforts to mitigate the harm caused by the unauthorized use, communication, or disclosure of any Confidential Information. Upon the earlier of City's request or termination of this Agreement, Consultant will immediately return to City all documents, instruments, or materials containing any Confidential Information accessed or received by Consultant, together with all copies and summaries of such Confidential Information. If requested by City, Consultant will execute a written certification satisfactory to City pursuant to which Consultant will represent and warrant that Consultant has returned all Confidential Information to City in accordance with the terms of this Agreement. Notwithstanding anything contained in this Agreement to the contrary, the terms of this Agreement do not operate to transfer any ownership or other rights in or to the Confidential Information to Consultant or any other person. For purposes of this Agreement, the term "Confidential Information" means all documentation, information, and/or materials identified by City as confidential and/or any documentation, information, and/or materials relating to or concerning City's future plans, business affairs, employment, legal, and litigation matters that need to be protected from improper disclosure, in whatever form (e.g., hard and electronic copies, etc.), that is received or assessed by Consultant; provided, however, the term "Confidential Information" does not include City's public records which are non-exempt public records under applicable federal, state, and/or local laws.

5. Term; Termination.

5.1 Term of Agreement; Termination. Subject to the terms and conditions contained in this Agreement, the term of this Agreement commenced on the Effective Date and will remain in full force and effect for a period of twelve (12) months thereafter, unless sooner terminated or extended as provided in this Agreement. Notwithstanding anything contained in this Agreement to the contrary, (a) this Agreement may be terminated at any time by the mutual written agreement of City and Consultant, and/or (b) City may terminate this Agreement for convenience and without cause by giving thirty (30) days' prior written notice of such termination to the other party. Upon receipt of the notice of termination, except as explicitly directed by City, Consultant must immediately discontinue performing all Services.

5.2 Immediate Termination. Notwithstanding anything contained in this Agreement to the contrary, City may terminate this Agreement immediately upon notice to Consultant upon the happening of any of the following events: (a) Consultant engages in any form of dishonesty or conduct involving moral turpitude related to Consultant's independent contractor relationship with City or that otherwise reflects adversely on the reputation or operations of City; (b) Consultant fails to comply with any applicable law related to Consultant's independent contractor relationship with City; (c) problems occur in connection with the performance of the Services; and/or (d) Consultant breaches and/or otherwise fails to perform any Consultant representation, warranty, covenant, and/or obligation contained in this Agreement. The determination as to whether any of the aforementioned events have occurred will be made by City in its sole discretion.

5.3 Consequences of Termination. Upon termination of this Agreement, City will not be obligated to reimburse or pay Consultant for any continuing contractual commitments to others or for penalties or damages arising from the cancellation of such contractual commitments, subject to City's obligations under Section 5.2. Notwithstanding anything contained in this Agreement to the contrary, termination of this Agreement by City will not constitute a waiver or termination of any rights, claims, and/or causes of action City may have against Consultant. Within a reasonable period of time after termination of this Agreement (but in no event later than five days after termination), Consultant will deliver to City all materials and documentation related to or concerning the Services.

5.4 Remedies. If a party breaches and/or otherwise fails to perform any of its representations, warranties, covenants, and/or obligations under this Agreement, the non-defaulting party may, in addition to any other remedy provided to the non-defaulting party under this Agreement, pursue all remedies available to the non-defaulting party at law or in equity. All available remedies are cumulative and may be exercised singularly or concurrently.

6. Miscellaneous.

6.1 Severability; Assignment; Binding Effect. Each provision contained in this Agreement will be treated as a separate and independent provision. The unenforceability of any one provision will in no way impair the enforceability of any other provision contained herein. Any reading of a provision causing unenforceability will yield to a construction permitting enforcement to the maximum extent permitted by applicable law. Consultant will not assign this Agreement to any person without City's prior written consent. Subject to the immediately preceding sentence, this Agreement will be binding on the parties and their respective heirs, personal representatives, successors, and permitted assigns, and will inure to their benefit. This Agreement may be amended only by a written agreement signed by each party.

6.2 Attorney Fees; Dispute Resolution. If any arbitration or litigation is instituted to interpret, enforce, and/or rescind this Agreement, including, without limitation, any proceeding brought under the United States Bankruptcy Code, the prevailing party on a claim will be entitled to recover with respect to the claim, in addition to any other relief awarded, the prevailing party's reasonable attorney fees and other fees, costs, and expenses of every kind, including, without limitation, costs and disbursements specified in ORCP 68 A(2), incurred in connection with the arbitration, the litigation, any appeal or petition for review, the collection of any award, or the enforcement of any order, as determined by the arbitrator or court. If any claim, dispute, or controversy arising out of or related to this Agreement occurs (a "Dispute"), City and Consultant will exert their best efforts to seek a fair and prompt negotiated resolution of the Dispute and will meet at least once to discuss and seek a resolution of the Dispute. If the Dispute is not resolved by negotiated resolution, either party may initiate a suit, action, arbitration, or other proceeding to interpret, enforce, and/or rescind this Agreement.

6.3 Governing Law; Venue. This Agreement is governed by the laws of the State of Oregon, without giving effect to any conflict-of-law principle that would result in the laws of any other jurisdiction governing this Agreement. Any action or proceeding arising out of this Agreement will be litigated in courts located in Grant County, Oregon. Each party consents and submits to the jurisdiction of any local, state, or federal court located in Grant County, Oregon.

6.4 Attachments; Further Assurances; Notices. Any exhibits, schedules, instruments, documents, and other attachments referenced in this Agreement are part of this Agreement; provided, however, if any exhibit, schedule, instrument, document, and/or other attachment conflicts with this Agreement, the terms contained in this Agreement will control. The parties will sign other documents and take other actions reasonably necessary to further effect and evidence this Agreement. Time is of the essence with respect to Consultant's performance of its obligations under this Agreement. All notices or other communications required or permitted by this Agreement must be in writing, must be delivered to the parties at the addresses set forth above, or any other address that a party may designate by notice to the other party, and are considered delivered upon actual receipt if delivered personally, by fax or email transmission (with electronic confirmation of delivery), or by a nationally recognized overnight delivery service, or at the end of the third business day after the date of deposit if deposited in the United States mail, postage pre-paid, certified, return receipt requested.

6.5 Waiver; Entire Agreement. No provision of this Agreement may be modified, waived, or discharged unless such waiver, modification, or discharge is agreed to in writing by City and Consultant. No waiver of either party at any time of the breach of, or lack of compliance with, any conditions or provisions of this Agreement will be deemed a waiver of other provisions or conditions hereof. This Agreement contains the entire agreement and understanding between the parties with respect to the subject matter of this Agreement and contains all the terms and conditions of the parties' agreement and supersedes any other oral or written negotiations, discussions, representations, or agreements. Consultant has not relied on any promises, statements, representations, or warranties except as set forth expressly in this Agreement.

6.6 Person; Interpretation; Execution. For purposes of this Agreement, the term "person" means any natural person, corporation, limited liability company, partnership, joint venture, firm, association, trust, unincorporated organization, government or governmental agency or political subdivision, or any other entity. All pronouns contained herein and any variations thereof will be deemed to refer to the masculine, feminine, or neutral, singular or plural, as the identity of the parties may require. The singular includes the plural and the plural includes the singular. The word "or" is not exclusive. The words "include," "includes," and "including" are not limiting. The titles, captions, or headings of the sections herein are inserted for convenience of reference only and are not intended to be a part of or to affect the meaning or interpretation of this Agreement. The parties may execute this Agreement in separate counterparts, each of which when executed and delivered will be an original, but all of which together will constitute one and the same instrument. Facsimile or email transmission of any signed original document will be the same as delivery of an original. At the request of either party, the parties will confirm facsimile or email transmitted signatures by signing and delivering an original document.

[end of agreement – signature page immediately follows]

IN WITNESS WHEREOF, the undersigned have caused this Agreement to be made effective for all purposes as of the Effective Date.

CITY:

City of John Day,
an Oregon municipal corporation

CONSULTANT:

CwM H2O, LLC.
an Oregon limited liability company

By: Ron Lundbom, Mayor

Federal Tax Id. No.: 93-6002192

By:

Federal Tax Id. No.: _____

Exhibit A

Energy, Water and Environmental Consulting Services and Related Services Proposal

[attached]



CwM-H2O, LLC

Statement of Qualifications

Water Resources - Water Rights - Groundwater Modeling - Geotechnical Support

Prepared For:

The City of John Day

450 East Main Street
John Day, Oregon 97845

June 28, 2021





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Overview

CwM-H2O, LLC

Firm Profile

CwM-H2O (CwM) provides expert services related to water supply planning and groundwater development. CwM was founded in 2013 to better serve smaller water districts and companies with water supply planning, development and compliance, groundwater supply options including Aquifer Storage and Recovery (ASR) feasibility studies, geotechnical investigations, and stormwater management. CwM maintains a staff of four professionals led by Senior Hydrogeologist Bob Long, R.G., CWRE. Our consultants specialize in assisting water providers with recognizing opportunities within their water system assets and water right portfolios. Our clients recognize us as very approachable professionals who support their vision of the future. CwM staff have decades of municipal water supply experience with expertise in groundwater supply feasibility studies, water management and conservation planning, geotechnical engineering services, GIS mapping services, hydrological modeling and environmental permitting.

Licensure

Oregon State Business License (Registration)- 914971-99 – CwM-H2O, LLC (S-Corp)

Oregon Certification Office for Business Inclusion and Diversity (COBID)-

Emerging Small Business Certification (ESB) – #9707

Registered Geologist G1735 – Robert E. Long Jr.

Certified Water Rights Examiner 71101CWRE – Robert E. Long Jr.

Professional Engineer - 57795PE - Heike Shipton

Services



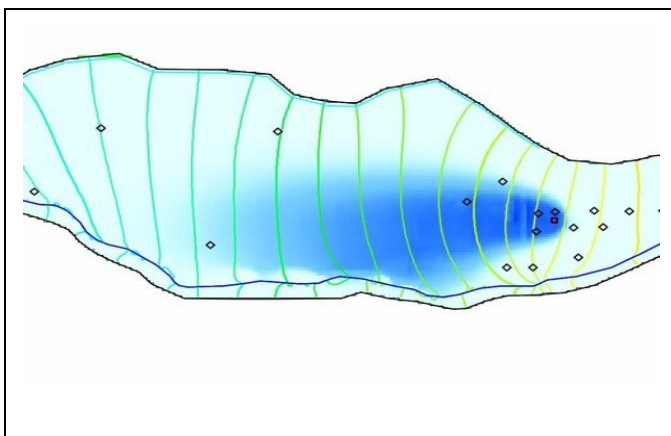
Surface Water

- Water Supply Planning
- Water Rights Permitting
- Water Management and Conservation Plans
- Hydrologic and Hydraulic Modeling
- Water Quality Monitoring and Analysis
- Stormwater Management
- Sediment Transport and Scouring Modeling
- Remote Telemetry Instrumentation



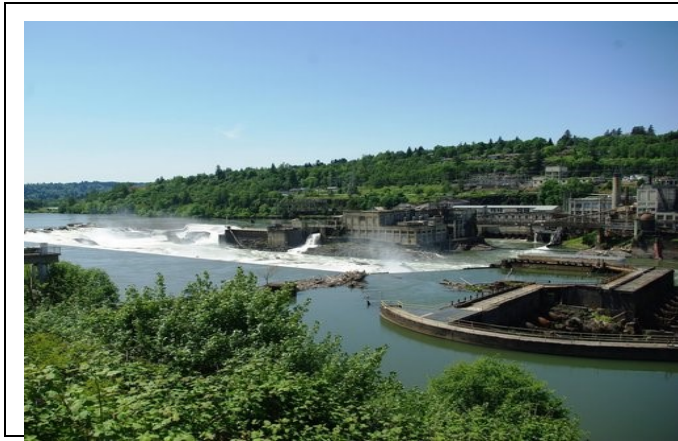
Groundwater

- Aquifer Storage and Recovery (ASR)
- Aquifer Characterization
- Groundwater Modeling
- Pump Testing
- Well Permitting and Installation
- Construction Dewatering
- Groundwater Production Exploration
- Litigation and Expert Witness Services



Wastewater

- NPDES Compliance and Permitting
- Mixing Zone Studies
- Downstream Use and Impact Studies
- Outfall Design Support
- Wastewater Treatment System Design and Planning
- WPCF Land Application Permitting



Brownfield Sites

- Environmental Site Assessments (Phase I / IIs)
- Remediation Feasibility Studies
- Remediation System Design, Installation, and Optimization
- Contaminant Fate and Transport Analysis
- Brownfield Redevelopment
- CERCLA and RCRA consulting



Mining

- Risk Analysis and Management
- Mine Dewatering
- Dam Release and Downstream Inundation Modeling
- Water Quality Monitoring and Analysis
- Mine Permitting
- Environmental Impact Studies



Selected Project Experience with References

Project Name: Water Supply Development and Water Management and Conservation Plan

Client Name: The City of Banks, Oregon

Location: Banks, Oregon (central Washington County)

Brief Description: The City of Banks is a small town of about 2,000 people with aging water infrastructure and a limited water system capacity. Three of the four years between 2014 and 2018, the City was forced to implement Stage 1 curtailment of water use due to demand exceeding capacity during peak summer months. CwM was brought on as a senior consultant to lead water supply planning and development for the City and proposed six project tasks which were targeted to access additional water supply, optimize production within the existing system, and identify areas for efficiency improvements. These tasks included: updating the City's Water Management and Conservation Plan (WMCP), certifying the City's groundwater permits, completing a hydrogeologic investigation and groundwater feasibility study to locate new well sites, planning a new water treatment plant, and negotiations with regional water providers and developers for access to additional supply. In completing the WMCP, CwM identified options for expanding capacity under the City's existing water rights and to reduce loss at their treatment plant. CwM successfully applied for a winter surface water permit, which could be used in conjunction with an aquifer storage and recovery (ASR) system proposed by CwM in 2018. Recently, CwM has had success in negotiations with an area developer to acquire summer supply and continues negotiations with a regional water provider. With continued management, these additional sources will allow for substantial growth for the City over the next two decades.

Project Duration: 1 year+ (*ongoing*)

Start and End Date: July 2020 – present

Contract Value: approx. \$128,000

Key Team Members and Roles:

- a. **Bob Long, RG:** Principal Consultant, Project Manager, Negotiations Lead – As the senior water consultant for the City, Bob handled all project proposals, project

management tasks, oversight of the hydrogeology review and groundwater feasibility study, and negotiations with landowners, developers, and regional water providers. As the project RG and CWRE, Bob also managed all water rights applications, well pump tests, and claims of beneficial use for the City's water rights portfolio.

- b. **Ian Godwin:** Project Hydrogeologist, Data Analyst, Field Technician – Ian worked on the hydrogeology review and groundwater feasibility study for the Banks area, including developing regional cross-sections, groundwater aquifer maps, and technical specifications for proposed supply wells. He also performed statistical analyses on water use data for the water system and supported in writing the Banks WMCP report.

- c. **Heike Shipton, PE:** Project Engineer, Data Analyst, Field Technician, Writer – Heike provided in-field expertise during well site selection in the groundwater feasibility study, assisted with pump testing of a potential new supply well, and provided analysis and writing support for the WMCP update.

- d. **Jenny Thom:** GIS Analyst, Writer, Project Coordination – Jenny prepared claim of beneficial use applications for the two City of Banks supply wells, an application for a new surface water permit and diversion, completed GIS mapping related to these water rights documents, and coordinated with the CwM office and Banks staff on budget and technical issues.

Reference: Jolynn Becker, Banks City Manager
City of Banks
13680 NW Main Street
Banks, OR 97106
Phone: 503-324-5112
Fax: 503-324-6674
Email: jbacker@cityofbanks.org



Project Name: Salmon Valley Water Management and Conservation Plan

Client Name: Salmon Valley Water Company (NW Natural Water)

Location: Welches, Oregon

Brief Description: Salmon Valley Water Company (SVWC) is a small, groundwater-based water provider that services about 1,500 people on the west slopes of Mt. Hood. SVWC underwent a change of ownership in early 2018 and was experiencing challenges with groundwater quality, well production rates, water right compliance conditions, and staffing. The company had prepared its own WMCP in 2017, but it was not accepted by the OWRD due to significant missing information. CwM was brought on to rewrite Salmon Valley's WMCP report to meet OWRD standards. In the process of preparing the WMCP, CwM performed analyses of water production, water consumption, and population trends in order to project future demands on the SVWC system. CwM also worked with SVWC to define benchmarks for water conservation, public education, and metering. The updated WMCP was approved by the OWRD in July 2019. CwM continued working with SVWC to complete a groundwater feasibility study, which successfully planned and constructed a new supply well to optimize production.

Project Duration: ~14 months

Start and End Date: May 2018 – July 2019

Contract Value: approx. \$35,000

Key Team Members and Roles:

- a. **Bob Long:** Principal Consultant, Project Manager, Negotiations Lead – As the senior consultant for SVWC, Bob handled all project proposals, project management tasks, supervision of field work, and oversight of assembly of the WMCP report. As the project RG and CWRE, Bob also managed all water rights applications, well pump tests, and compliance actions related to SVWC's water right portfolio.
- b. **Heike Shipton:** Project Engineer, Data Analyst, Writer – Heike assisted in data compilation, analysis, and writing for the WMCP report. She was also a primary field representative during the later groundwater feasibility study and oversaw aquifer pump testing activities.

- c. **Jenny Thom:** GIS Analyst, Writer – Jenny prepared map figures for the WMCP report and related water right applications. She was also involved in water planning and water quality sampling in the field.

 - d. **Ian Godwin:** Project Hydrogeologist, Data Analyst, Field Technician – Ian provided support in the water use and production analysis and water right compliance work. He also performed pump test data analysis and field sampling support related to the follow-on SVWC groundwater feasibility study.
- b. **Reference:** Michael Bowman, General Manager
Salmon Valley Water Company
24252 E. Welches Road
Welches, OR 97067
Phone:
Email: michael@salmonvalleywater.com



Robert E. Long, Senior Consultant

Education: B.A., Geology, State University of New York at Buffalo, 1986
SUNY School of Environmental Science and Forestry 1987
Syracuse University, LC Smith School of Engineering, Hydrogeology 1988-92

Registrations: Registered Professional Geologist, Oregon G1735
Registered Professional Geologist and Hydrogeologist, Washington #1999
Certified Water Rights Examiner, Oregon 71101CWRE

Project Role: Water Resources Senior Planner, Water Rights Consultant and Hydrogeologist

Project Responsibilities: Project management, water system demand estimates and projection of water demand into the future, water right options for surface and groundwater, assess integration options with partner water districts and Port of Tillamook.

Mr. Robert (Bob) Long, RG, CWRE is a Senior Consultant and Hydrogeologist with over 25-years of experience in the water resources consulting, planning, and research. Bob specializes in conjunctive-use of water (optimization of surface, groundwater, and stormwater resources), water resource master planning, water source evaluation, development of groundwater and surface water sources, aquifer storage and recovery (ASR), and water rights. He has assisted federal, municipal, industrial, and agricultural clients to assess their water resource options and to explore cooperative solutions to meet competing needs for water resources. The following section presents a selection of projects that represent Mr. Long's water planning, water right and expert testimony.

WATER PROJECTS

Water Management and Conservation Plan, Salmon Valley Water Company, Clackamas County, Oregon.

CwM completed a required Water Management and Conservation Plan (WMCP) for Salmon Valley Water Company (SVWC), a private water company that serves over 1,500 customers near Welches, Oregon. SVWC maintains four production wells and six water rights. The plan included developing an assessment of current water demands, system capacity, and water demand projections for 10- and 20 years in the future. The results of the plan required a request for greenlight water from Oregon Water Resources Department and development of one or more new groundwater sources.

Water Management and Conservation Plan, City of Banks, Oregon

As the City's hydrogeologist of record, Mr. Long led the City's Water Management and Conservation Plan in 2010 and 2020. This small city relies on groundwater wells and headland springs for water supply. The WMCP evaluates the water supply, historic water demand and the water demand to 2050. The plan provides options for conservation education and infrastructure improvements to meet the projected future demand. Groundwater, surface water, and potential new water rights are considered in a strategy for managing water sources to meet a future water demands within the City's service area.

Groundwater Feasibility Study Resort Development, Confidential Client, Agate Beach, Oregon

This groundwater feasibility study assessed the hydrogeology of the marine terrace deposits of the Northern Oregon Coast. The client/landowner desired a groundwater option to support the development of a community water supply in addition to a surface water source. A groundwater source was developed to support summertime use of the water system when the use of the surface water source was limited.



Robert E. Long, Senior Consultant

Groundwater-Spring Interaction and Water Quality Study

Neahkahnie Water District, Neahkahnie, Oregon

This study was commissioned by Neahkahnie Water District to assess the potential impact of residential development within the watershed that contributes to their groundwater springs. The interaction between the groundwater system and spring system was assessed to determine the impact of development. The source of the waters contributing to the pristine nature of the springs was found to be Neahkahnie mountain basalts with potential for some interaction with near surface contamination.

Water Resource Planning and Water Rights, Dunes City, Oregon

This project included developing a plan to support the City's unique water rights on Woahink Lake, Oregon. The project includes future water source planning, developing a stream gaging stations for monitoring compliance and a water right extension and amendment.

Aquifer Storage and Recovery (ASR) Feasibility Assessment, City of Banks, Oregon

This study assessed the feasibility of using ASR technology to store treated surface water in two basalt aquifers in Washington County Oregon. The feasibility study included an assessment of the City's water demand, available source water, water quality, and capacity to store 41 million gallons of water annually in the basalts beneath the City.

Water Supply Development Phase I – Groundwater Feasibility Study

City of Banks, Banks, Oregon

This water resources planning study is a six-task program that included a Groundwater Supply Feasibility Study to assess the local hydrogeology and select up to four production well locations, assess options for a new surface water right and water treatment plant, and provide technical support and negotiation expertise regarding the development of a regional water supply agreement a regional water supplier.

Groundwater Feasibility Study, Salmon Valley Water Company

Completed a hydrogeologic analysis of the alpine valley that contains the SVWD. Identified the location and depth of an aquifer that could be developed under an existing water right. Completed Oregon Health Authority Site Plan to install Production Well FG-7, completed 30 hour pumping test and water right amendment.

Groundwater Feasibility Study, Broken Spur Ranch, Pilot Rock, Oregon

This groundwater feasibility study evaluated the basalt stratigraphy and structures in the Columbia River Basalts in an area south of Pilot Rock, Oregon. The study supported the development of groundwater resources on the margin of the Umatilla Basin.

Groundwater Feasibility Study, Troutdale Aquifer, Wilsonville, Oregon.

This well field feasibility project included assessment of the technical hydrogeologic, institutional land use and water rights issues associated with siting and constructing a well field. Completed a hydrogeologic evaluation of the Troutdale aquifer for the development of high-capacity groundwater production wells in the Northern Willamette Valley.

Regional Well Field Development and Permitting, Cities of Dayton and Lafayette, Oregon.

This well field siting and development project for the cities of Dayton and Lafayette included a detailed groundwater study to identify possible well field locations for development of a new municipal drinking water supply. The well field development plan consists of 10 production wells, 4 miles of pipelines, and a 1.5-million-gallon reservoir.



Heike Shipton, P.E., Project Engineer

Education: M.S., Civil Engineering, Oregon State University, 1998
Vordiplom (equivalent to B.S.), Civil Engineering, Germany, 1994

Registrations: Oregon Professional Engineer, 57795PE

Heike Shipton is a Civil Engineer with over 20 years of experience in managing the geotechnical engineering portion of transportation, environmental, water and wastewater projects. Her technical skills include performing and supervising field explorations programs, analysis, design, and report preparation, preparing plans and specifications for a variety of construction projects and construction observation. Heike has recently switched her focus to water supply planning and conservation, system evaluation and water rights. She assists municipal, industrial, and agricultural clients to assess their water resource options.

WATER PLANNING AND DEVELOPMENT PROJECTS

Water Supply Development - Phase 1, City of Banks, Oregon

The results of the ASR Feasibility Assessment confirmed that while the aquifer capacity for storage was sufficient, the capacity of the City's existing surface water sources could not provide for recharge to an ASR program. This initiated Phase 1 of the City's Water Supply Development program. CwM assisted the City in identifying and applying to funding programs to assess new sources of winter-time surface water, water right transfers from irrigation to municipal use, the potential for new groundwater supply in the Columbia River Basalt Aquifers, and options to join in a regional pipeline solution. This project includes identification of future infrastructure locations for surface water intakes, water treatment, groundwater wells and a potential seven to nine-mile water supply pipeline to a regional provider.

Water Supply Planning, Dunes City, Oregon

CwM is assisting the City with compliance and development of a surface water storage water right, a municipal water right, and a system wide domestic use water right. This project includes compliance with fish passage, construction conditions, and monthly stream water monitoring.

New Groundwater Well and Water Right Transfer, Salmon Valley Water Co., Welches, Oregon

This project includes the design and development of a new water supply well for Salmon Valley. CwM developed a conceptual well design, bid documents, and an Oregon Health Authority Site Plan and conditional waiver of the 100-ft. set back. This project is currently in development with a pending water right transfer to cover the selected drilling location. In the months ahead CwM will complete the construction observation for the owner.

Water Rights Support and Claim of Beneficial Use, Beaverlake Nursery, Beaverlake, Oregon

Data and monitoring program for flows and water storage at Beaverlake Nursery. CwM is in the process of completing a Claim of Beneficial Use Survey and report for this 20-acre nursery.



Ian A Godwin, Project Hydrogeologist

- Education:** M.S., Environmental Sciences, Arkansas State University, 2020
Thesis: *"Feasibility of Infiltration Galleries for Managed Aquifer Recharge in the Mississippi River Valley Alluvial Aquifer of Northeast Arkansas"*
- B.S., Geoscience, Virginia Polytechnic Institute and State University, 2016
Geology Field Program, Idaho State University, 2015
- Registrations:** ASBOG Geologist-in-Training, Oregon (2020)
ASBOG Geologist-in-Training, Arkansas (2019)
- Trainings:** Small Water System Operation & Maintenance Training Certificate, Sacramento State, 2020
Groundwater Modeling using MODFLOW 6 and ModelMuse, Hatari Labs, 2020
First Aid and CPR Certified, Oregon Nursery Association, 2020
Drilling Safety Field Training, National Drillers Association, 2016
- Project Role:** Support Hydrogeologist, Data Analyst, GIS Analyst, Field Technician
- Responsibilities:** Mr. Godwin will support in water use data analysis, groundwater supply planning, hydrogeologic investigations, resource mapping, and related field work. He will also contribute to writing technical memoranda or other reports as needed.

Mr. Godwin has more than three years of experience working in the water resource conservation and hydrology fields. After completing his undergraduate program in geology at Virginia Tech in 2016, Ian worked with a geotechnical engineering firm in Washington, DC as a field geologist on major construction and environmental projects. In 2018, Ian began a graduate program in environmental science while working with the USDA Delta Water Management Research Unit on various efforts to improve water supply and water quality in the Mississippi River Delta region. The focus of Ian's thesis work was conjunctive-use of on-farm storage reservoirs with managed aquifer recharge (MAR) systems for groundwater management. Since joining CwM-H2O, Ian has assisted in hydrogeologic analyses, groundwater feasibility studies, aquifer modeling, water-loss studies for municipal water supply systems, water rights applications, transfers, and claims of beneficial use for private and municipal clients.

Banks Water Management and Conservation Plan, City of Banks, Oregon

Ian worked as a data analyst and writer during the preparation of the City's 2020 Water Management and Conservation Plan. This small city relies on groundwater wells and springs for water supply but does not currently have the capacity to meet peak summer demands. In working on this WMCP, CwM evaluated demand trends and the available water rights to develop a strategy for managing these resources and improving conservation. This work identified options for optimizing groundwater production under existing water rights, expanding available surface water sources, and reducing losses at the City's treatment facility.

Water Supply Development Program - Phase 1, City of Banks, Oregon

The results of CwM's 2018 ASR Feasibility Assessment confirmed that the capacity of the City's existing surface water sources could not support sufficient recharge to an ASR program. CwM assisted the City in identifying and applying to funding programs to assess new sources of winter-time surface water, water right transfers from irrigation to municipal use, and the potential for new groundwater supply in the Columbia River Basalt Aquifers. Ian provided mapping analyses of various hydrogeologic data to aid in the



Ian A Godwin, Project Hydrogeologist

site selection process for new groundwater supply wells and ASR testing facilities, as well as field support for geophysical surveys and aquifer pump testing of a potential supply well.

Salmon Valley Groundwater Feasibility Study and Water Supply Planning

Salmon Valley Water Company, Welches, Oregon

CwM completed groundwater feasibility study to select a location and assess the sustainable capacity of a potential new point of appropriation for the Salmon Valley Water Company. Ian processed and analyzed groundwater depth data collected during the aquifer pump tests to establish maximum and recommended pumping rates for various use scenarios for the well. He also supported water quality sampling in the field, water rights application work, and preparations of the OHA site plan related to the new well.

Water Rights Portfolio Management and Supply Planning

Perrydale Domestic Water Association, Amity, Oregon

Perrydale DWA serves over 900 customers across more than 130 mi². The District holds multiple complex groundwater rights divided among more than a dozen wells. CwM is working with the District to develop a compliance plan, prepare extensions for some groundwater permits, and complete claims of beneficial use on others. Ian assisted in completing a standard 4-hour pump test on a basalt well, preparing applications and related map figures for a permit extension and a claim of beneficial use.

Water Supply Planning, City of Dunes City

City of Dunes City, Oregon

CwM is assisting the City with compliance and development of a surface water storage water right, a municipal water right, and a system wide domestic use water right. This project includes compliance with fish passage, construction conditions, metering of over 200 points and diversion, and stream flow monitoring. Ian supported in data analysis and preparations of an extension and permit amendment application.



Jennifer Stevens Thom, Project and GIS Specialist

Education: M.S., Marine, Estuarine, Environmental Science 1997
University of Maryland – College Park, Maryland
Thesis: *“Estimating Coastal Marsh Loss with Landsat Thematic Mapper Data: A Verification Study in Delaware”*

B.S., Environmental Studies (Cum Laude) 1990
SUNY College of Environmental Science and Forestry

Certifications: Federal Acquisition Institute - Project Management (FAC-PM, Level I)
Federal Acquisition Institute-Contracting Officer’s Technical Representative (FAC- COTR, Level II)

WATER PROJECTS

City of Banks Water Supply Planning Project, City of Banks, Oregon

Ms. Thom played a primary role in the preparation of two Oregon Water Resources Department (OWRD) Claim of Beneficial Use Applications for the City of Banks’ primary production wells. In addition to preparing the content and maps required for those applications, she also prepared a detailed poster sized map used for planning and identifying new potential sites for a water treatment plant and additional ground water well sites. She is currently responsible for tracking and updating the project budget.

Swan Lake North Pumped Storage Project, Klamath Falls, Oregon

Ms. Thom coordinated closely with legal counsel and senior staff to produce detailed site maps supporting the application for a complex groundwater rights transfer and water use forbearance agreement. She created a historical imagery timeline to show water use at the site over the last 10 years. OWRD approved this project’s Transfer Application (T-13280) in January 2021.

Salmon Valley Water Company Water Rights Transfer, Salmon Valley, Welches, Oregon

Ms. Thom created detailed site maps for an OWRD Water Rights Transfer Application and assisted with water quality sampling at the site of the new Salmon Valley production well (FG7). She is currently responsible for coordinating with the client on invoicing and budget matters.

Water Rights Permit Applications, Umatilla, Inc. Oregon City, Oregon.

Ms. Thom assisted staff with identifying and recommending the best appropriation of water resources to meet the landowner’s agricultural and irrigation needs. She prepared and submitted Surface water and Supplemental Groundwater Permit applications, complete with detailed site maps to OWRD on the client’s behalf. Those applications are in the review process and on target for approval.

Stream Habitat Surveys, Oregon Department of Fish and Wildlife, Corvallis, OR

As a field biologist for ODFW, Ms. Thom conducted miles of river and stream habitat surveys throughout the State of Oregon (Tillamook, Willamette Valley, Steens Mountains). She collected geomorphology data on stream channels, banks and adjacent floodplains. The data provided a powerful baseline of existing resources and a starting point for potential habitat restoration projects.