STATEMENT OF QUALIFICATIONS
PROFESSIONAL ENGINEERING SERVICES
FOR
NORTH BEACH WATER DISTRICT
(BIRCH PLACE BOOSTER STATION)

JULY 14, 2015

Prepared for:

NORTH BEACH WATER DISTRICT
C/O WILLIAM NEAL
PO BOX 618
OCEAN PARK, WA 98640

Prepared by:

NORTHWEST WATER SYSTEMS, INC.
P.O. BOX 123
PORT ORCHARD, WA 98366
(360) 876-0958

ATTACHMENT "A" - PROPOSAL SUMMARY FORM

RFQ Birch Place Booster Station

General Information:

Legal Name of Applicant Firm: NORTHWEST WATER SYSTEMS INC.

Street Address: 7245 BETHEL - BURLEY RD. SE

City: PORT ORCHARD State: WA Zip: 98366

Contact Person Title: ENGINEER

Phone: 360-876-0958 Fax: 360-876-4196

E-mail address: JESSICA @nwwatersystems.com

Tax Identification Number: 91-1145650

Did outside individuals or agencies assist with preparation of this proposal?

Yes: ____ No: ✓ If yes, describe.

I certify that to the best of my knowledge the information contained in this proposal is accurate and complete and that I have the legal authority to commit this firm to a contractual agreement. I realize the final funding for any service is based upon available funding levels, and the approval of the Clark Regional Wastewater District Board of Commissioners.

Signature

07/14/15
Date

Planning • Management • Engineering
P.O. Box 123 • Port Orchard, WA 98366 • 888-881-0958 • 360-876-0958

July 14, 2015

North Beach Water District
Attn: William Neal, General Manager
PO BOX 618
Ocean Park, WA 98640

Re: Professional Engineering Services for Birch Place Booster Station

Dear Mr. Neal:

Thank you for the opportunity to present our qualifications for engineering and consulting/professional services to the North Beach Water District, specifically with respect to the Birch Place Booster Station project. We have enclosed our Statement of Qualifications for your review. Northwest Water Systems specializes in the management and engineering of all aspects of public water systems. We offer a strong engineering and design team who strive to provide our clients with engineering solutions tailored to their specific needs.

We expect that with your background in construction and in operations as the General Manager of the North Beach Water District you will have given you a number of design criteria that you will want met with respect to this project. We are a well suited company to these needs, as we are aware that cookie-cutter designs simply do not work well for smaller water systems. We are committed to working closely with the General Manager to develop a design that is dependable, effective, understandable, and serviceable. It is our objective to meet the system's needs, goals, and desires. We do not believe this can be done in isolation; instead, we welcome your input.

Northwest Water Systems is known for developing cost-effective solutions. Time and again, our clients have told us that our designs were less expensive to install and the projects were easier to manage than anticipated because we take a very hands on, practical approach; and because we listen carefully to our clients. In fact, our greatest source of significant change orders have been initiated by our clients who have wanted to add extra features, or complete additional projects when the bids came in less than expected, and construction progressed so smoothly.

For additional information, please refer to our website: www.nwwatersystems.com. The website provides additional information regarding our engineering and design process as well as information regarding our philosophy and approach to the design and management of water systems. We believe that acting in your best interest is the right thing to do. If you have any questions please give me a call or send an e-mail to: jester@nwwatersystems.com.

Sincerely,
NORTHWEST WATER SYSTEMS, INC.

Jester Purtteman, P.E.
Lead Engineer

Table of Contents

Project Understanding and Approach

North Beach Water District (District) has requested a proposal for professional engineering services for the Birch Place Booster Station project. Northwest water systems is excited to work on the project, and anticipates preparation of a booster station design, hydraulic analyses, review, prepare cost estimates, provide project management and construction inspections, and preparation of permit applications.

We have experience preparing project reports both for Department of Health and other regulatory agencies when appropriate (USDA, SRF etc), preliminary schematics and calculations, design drawings, bid and contract documents, engineering cost estimates, and reviewing bid documents. The services proposed in this document are intended to support the District throughout this process and incorporate the following goals:

- Comply with applicable codes, laws and regulations
- Provide strategies to maintain or improve water system effectively
- Be technically sound, easy to administer, and readily understandable
- Provide recommendations to improve current water system

Scope of Work and Project Approach

We understand that North Beach is committed to a conceptual model of using a pitless booster station to improve pressure in the Birch Place pressure zone. We fully support this approach and believe that it has many valuable features including: cost saving compared a more traditional booster station, reduced footprint, low-profile, and ease of maintenance.

As stated in the Cover Letter, we have worked with the District's General Manager in the past and have seen that he has a wealth of experience and knowledge in the design and construction of public water systems, as well as project management and operations of water systems. We appreciate his experience and insights and hope to coordinate closely with him in order to see the project through to a very successful completion.

The technical aspects of this project are relatively simple. It is important to conduct the hydraulic analysis correctly, size the pumps and inlet/outlet piping, ensure the system will not be prone to cavitation or fail to provide adequate performance. It is equally important to specify the appropriate equipment and appurtenances and provide construction drawings and specifications that will allow the system to receive accurate, low, responsible bids from contractors by ensuring that the station can be constructed efficiently. However, our expectation would be that most engineering firms should be able to handle these aspects of the project in a competent and reasonable manner.

The real challenge in designing a project such as this is to be able to effectively communicate and coordinate well between the various parties that will be involved in the project (Regulators, District, District customers, Contractor, Utilities, other engineers, and any funding entities). Our ability to communicate, listen, and help resolve differences when they arise, is part of what makes Northwest Water Systems different.

We believe the most important aspect of this project is to remain in regular and full communication with the District. Depending on needs on the District staff, we are willing to be flexible and provide a "full service" engineering, project management, and construction coordination package, or to cooperate with the District in order to share some of these responsibilities to reduce the overall project cost.

Project Approach

Northwest Water Systems provides a full range of engineering and design services to water systems. Although our team has a wealth of experience, we cannot claim expertise in multiple disciplines—we specialize only in water. That focus allows us to develop an in-depth knowledge that exceeds that of much larger engineering firms, while affording us the opportunity to provide the quality of service and attention to detail (not to mention, the lower overhead) of a smaller firm.

The only stated objective that we are not able to directly meet is the use of an in-house surveyor; however, we have often coordinated with outside surveyors successfully and are happy to work with a surveyor of the District's choice, or coordinate with a surveyor which we choose (or subcontract) and which the District approves.

What Makes Us Different?

- Our engineers and planners learn from our management staff.
- We gain technical knowledge from our close relationships with contractors.
- We use our practical experience to develop custom and optimized designs.
- We listen to your needs and keep open communication throughout the project.

From designing a complex water treatment system to collecting monthly water samples and providing accurate complete regulatory reporting, we know the issues faced by water system managers. Our blend of technical expertise in combination with practical knowledge of water system management sets us apart. Because our company provides full service management and operational support for public water systems, our engineering and design staff sees the day-to-day issues faced by water providers. When we engineer and design improvements for systems that we also manage, we get to observe the results of our efforts over the long term.

Our office is located directly above those of one of the larger drilling and pump contractors in Washington. We regularly go downstairs to get "the real answer" rather than relying on cut sheets or the promises of sales staff. We regularly ask multiple contractors what they like and do not like about the plans they see and which approaches work the best for water systems over the long-term.

We use the experiences of the managers and contractors with whom we work and combine them with our technical understanding expertise in science and engineering. This results in designing projects that fit the needs of our clients. By having more than just a theoretical

understanding of the equipment and techniques we specify, we are able to develop designs that are less expensive to install, easier to maintain, and provide a greater degree of reliability.

Taking an active role in maintaining open and effective communication is essential to project success. While we have extensive technical knowledge, we also realize that since you own, operate, and maintain your water system. You are the expert when it comes to your needs, desires, and values. In order to ensure your project is a success, we seek out your perspectives, input, understanding, and concurrence. Regular communication, a key feature of our project management style, allows us to successfully meet your project needs.

Project Methodology

Project Philosophy

Each project presents unique challenges and opportunities for excellence of design. Our work is distinguished by responsive, client-oriented services. The design that worked for the last water system, may not work for your water system, so each design is tailored to your needs and requirements.

Quality Control

All projects go through an internal review process before leaving the office. Any questions or difficult aspects of a project are discussed among design staff at regular meetings. Conclusions or approaches agreed upon are then confirmed through research or consulting with industry experts (contractors, regulators, other operators with a similar set-up, manufacturers).

Scope of Work, Budget and Schedule

Northwest Water Systems believes that effective and thorough communication is the key to properly define the Scope of Work, avoid budget "creep", and keep the project on schedule. We believe in setting realistic expectations and then working together with our clients to meet our shared goals.

Communication and Records

Northwest Water Systems believes in open and regular communication. All our project files are owned by the respective clients. We are happy to provide electronic or paper copies of all files, drawings, or other project information in whatever format you desire. We provide status reports to the client throughout the duration of the project and remain in contact with the Department of Health during review periods. We believe in full disclosure and getting the right information to the right people in the most direct manner possible.

Work Schedule

Northwest Water Systems is able and willing to be flexible in the scheduling of this project to meet your needs. Below is the estimated work schedule for the booster station design.

Authorization to begin	August 2015
Study the problem and gather information*	August 2015

<Continued >

Evaluate and verify hydraulic analysis	August 2015
Predesign report	September 2015
30% plans, specifications, and estimates	November 2015 (approximate)
50% plans, specifications, and estimates	December 2015
Meet with interested parties	December 2015 (approximate)
90% plans, specifications, and estimates	February 2016
Receive Comments from the District	March 2016
Final plans, specifications, and estimates (to DOH)	April 2016
Bid and award support	May 2016
Construction Management	June 2016 (approximate)

*The process of gathering information continues throughout the project; however, the amount of time dedicated to this phase decreases as the project matures.

Additional Requirement

Northwest water system will comply with all applicable state and federal laws governing the confidentiality of information. Northwest Water Systems does not hold any interest, financial or otherwise, in the District, and no member of the district has any known affiliation with us. We have not been debarred, suspended or otherwise excluded from participation in Federal Assistance programs under Executive Order 12569, "Debarment or Suspension". We will not contract with a subcontractor that is debarred or suspended.

Project Team, Experience, and Reference

Northwest Water Systems, Inc. specializes in serving the needs of small, public water systems. We manage over 400 water systems ranging in size from 1 connection to 1,200 connections. Our engineering staff includes four engineers, all of whom specialize in public water systems. Because we only work in the drinking water industry, our staff has a very in-depth knowledge of the regulations and technical needs of water systems.

Qualifications of Key Personnel

Our project team demonstrates a wide range of in-house expertise. From engineering to hands-on management, including financial services, billing, and planning, we have the depth of experience needed to provide professional services for the 2014 calendar year. At Northwest Water Systems, we understand that every utility faces its own unique challenges. One of the keys to maintaining our reputation is our ability to listen to our clients and produce customized results that can be easily implemented and understood by everyone.

Our engineering staff can bring a technical understanding of your needs to this project. They will conduct a peer review of booster station project report or related documents to ensure the assumptions are appropriate. They are also able to use their professional judgment to fill in the missing pieces that will be needed to complete the projects. The table below lists the organization and structure of the proposed team with their key interactions and responsibilities. The key contacts for your project are listed subsequently with summary credential information. Complete resumes are provided in the appendix.

Engineer	Project Manager	Lead Engineer	Support Engineer
Todd Krause, P.E.	X		
Jester Purtteman, P.E.		X	
Jessica Tanumihardja, EIT			X

Todd Krause, PE, Lead Engineer

Todd Krause specializes in small water system design, engineering, project management, and troubleshooting. He has primary responsibility for all engineering and design work completed by Northwest Water Systems with direct responsibility for Group A water system designs and oversight of Group B designs.

Career Highlights

- B.S. Biological Systems Engineering - Washington State University, 1998
- M.S. Environmental Engineering – Washington State University, 2000
- Researcher –Center for Environmental Education, 2000-2001
- Missionary –Baptist Mid-Missions, Ecuador 2002-2003

- Joined Northwest Water Systems in 2003-Current
- Water Distribution Manager Level 2 / Basic Treatment Plant Operator – State of Washington, 2004
- Professional Engineer – State of Washington, 2005
- Cross Connection Control Specialist – State of Washington, 2009
- Owner of Fernwood Creamery, on-farm sales of Raw Milk, WA 2011-2013

Jester Purtteman, PE

Jester Purtteman prepares Group A water system designs and also provides project management for projects with USDA or other federal/state funding sources.

Career Highlights

- B.S. Physics and Astronomy – The Evergreen State College, 2002
- B.S. Mechanical Engineering – Washington State University, 2004
- M.S. Mechanical Engineering – University of Washington, 2006
- Engineer in Training, 2004
- OptimERA (remote phone and internet service for fisheries along the Aleutian Chain) – Designer and part owner, 2007-present
- Joined Northwest Water Systems in 2010
- Earned P.E. in December 2013

Jessica Tanumihardja, EIT

Jessica Tanumihardja prepares Small Water System Management Programs, Water System Plans, and Group A and B project reports.

Career Highlights

- B.S. Chemical Engineering – University of Washington, 2010
- M.S. Engineering (Civil and Environmental) – University of Washington, 2013
- Engineer in Training, 2013
- Joined Northwest Water Systems in 2013

Similar Project Experiences

The projects listed below provide an overview of some of our recent experience in booster station projects, federally funded projects, and other water related projects.

Grays Harbor Water District #2 (Central Park, WA) – Booster Station Design, Source Approval, and Developer Extension Review

GHWD#2 was required to increase pressure on a leg of their distribution system in a small development known as Hirschbeck Heights. Their Water System Plan called for increasing the line size and installing a loop. Unfortunately, the loop would go through a large area of unbuildable land because of the terrain, which made the project not only very expensive, but also provided very little additional long-term benefit. In addition, fireflow was not needed for this area. Northwest Water Systems recommended installing submersible pumps controlled with VFD drives in sections of buried well casing in order to reduce the foot-print and visibility of the project. The finished product resulted in excellent satisfaction for the customers along

this section of water main as well as a booster station that is easy for the operator to monitor and maintain.
Estimate construction cost and year: $ 39,300 in 2013
Project Reference: Reg Hearn; 360-532-1828; regghcwd2@hotmail.com

Shore Hill (Belfair, WA) - Booster Station Design
The Sunset Heights Water System is a small, Group A Water System located on Northshore Road along Hood Canal. The system is primarily pressurized by gravity from a concrete reservoir located on a hillside above the community. One section of the distribution system did not meet the minimum 30 psi required by the WSDOH. The system had very limited space to install a booster station as the only easements available were the road right-of-way. We therefore designed a submersible pump controlled with a VFD on a pitless adapter in a section of well casing. The simplicity of the approach helped minimize cost, resulted in a low-profile installation that draws very little attention, and of course meets the pressure needs of the customers served.
Estimate construction year: in 2005
Project Reference: Dennis Goldsby; 253-476-7088

Thurston PUD –Various Engineering Projects
Northwest Water Systems has provided engineering services for multiple small engineering projects for Thurston PUD. We have found Thurston PUD to be professional, friendly, and well organized. In short, we have enjoyed working with Thurston PUD in the past. The projects have included: Chlorination Design, CT6 documentation, booster station design, capacity analysis, treatment system repair and training bid solicitation, and peer review services of work provided by another firm. These projects have demonstrated a history of working well with Thurston PUD.
Estimate construction cost and year: vary
Project Reference: Kim Gubbe; 360-357-8783; kgubbe@thurstonpud.org

Heron Island - Distribution System Replacement, funded by USDA rural development loan
Herron Island consists of approximately 500 lots that can only be reached by a private ferry. Another engineering firm had completed a design for replacing their distribution system for $3,500,000. By developing a customized design appropriate to the community, assisting the community with obtaining a USDA loan, and by working with the contractor to develop and support creative solutions that mitigated the access challenges associated with the limited ferry service, we were able to reduce the project costs by over a third, down to $1 million dollars. Large pressure-reducing stations were replaced with simple PRV's at a handful of individual lots. The additional budget was used to replace install significantly thicker walled water line for improved life, to replace the aging well pumps with much more appropriately sized and more efficient pumps, and to install radio read service meters at all service connections.

Estimate construction cost and year: $1,375,000 in 2012.
Project Reference: Claudia Ellsworth; 253-884-9350.

Citizens Water Association (Town of Alder, WA)–Transmission Line, Distribution, and Reservoir Design, funded by State Revolving Fund and Community Development Block Grant
System needs included re-building the spring source, replacing distribution and transmission lines, adding disinfection, and adding connections. A previous engineer for the project had proposed replacing the entire system, with the addition of a long, buried serpentine at the end of the source transmission line for contact piping to meet disinfection requirements. After reviewing this concept, we suggested a fundamental change in approach. By bringing electrical power to the spring source and moving the reservoir to the spring site, we were able to improve the reliability of the system and cut construction costs nearly in half. The old, galvanized iron pipe transmission line was replaced. The new transmission line and reservoir can now be used for the required contact time. In addition, the system eliminated nearly a mile of unneeded pipe that previously connected the old reservoir to the rest of the system. This project demonstrates Northwest Water System's commitment to unique and customized approaches that solve the challenges facing each water system.
Estimate construction cost and year: $ 364,000, December 2010 to March 2011.
Project Reference: Nancy Mettler 360-832-7600.

APPENDIX – RESUMES

STATEMENT OF QUALIFICATIONS
PROFESSIONAL ENGINEERING SERVICES FOR
NORTH BEACH WATER DISTRICT
(BIRCH PLACE BOOSTER STATION)

Todd Krause, P.E.

Experience

Lead Engineer (2003-present)
At Northwest Water Systems I have been responsible for overseeing the engineering department and helping develop a positive work environment that encourages creativity, professionalism, and the highest technical and ethical standards. Besides engineering, I have provided support to the management of over 400 water systems. This has required not only technical skills, but also excellent communication and interpersonal abilities. Many of the challenges faced by water systems are more people based than facilities based.

Research Consultant (2001)
While working at the Center for Environmental Education, I was responsible for writing water quality reports; researching hydrologic, social and environmental river basin parameters, and completing data analysis. I was hired to write several water quality reports each month, which initially took five or more hours each to write. Since the reports were substantially similar each month, I developed a spreadsheet and report template that allowed the reports to be written in half an hour to an hour each.

Faculty and Instruction (2001-2012)
Through teaching a 300-level course in irrigation at WSU, I learned to work with students, helping them understand how to apply theoretical, practical, and hands-on aspects of irrigation. I enjoy presenting and regularly teach seminars on a variety of water related topics at industry conferences.

Research Assistant (1998-2000)
I created, designed, and completed a biological filter to treat off gasses from a dairy waste lagoon. This project was completed independently with very little assistance from my advisor or other researchers

Missionary (2002-2003)
While serving in Ecuador I was consulted in construction and water quality projects, audited and re-designed the accounting system, led Bible studies, supported the local church, and aided fellow missionaries in conflict management.

Education

Washington State University
Biological Systems Engineering, Minors: Math, Spanish, Microbiology
MS: Environmental Engineering

Certifications

P.E.,WDMII, CCS, BTO
Position on the Department of Ecology's Technical Advisory Group for Well Drilling

Language

Proficient in Spanish, having lived in Ecuador for eleven months.

Jester Purtteman, P.E.

Experience

Northwest Water Systems, Inc. (2010-present)

- Engineering simple, easily maintained, cost effective designs to meet the diverse needs of numerous small water systems.
- Assisting communities in understanding the financial commitments of a water system and how to achieve long term sustainable water service.
- Providing support for communities that are at high risk, underserved, or low income in leveraging available low interest loan or grant funding to maximum effect.
- Developing new technologies to improve the health and safety our customers.

OptimaERA, Inc. (2006-2012)

- Provided the technical foundation to form an Internet Services Provider serving national and international workers at fish processing facilities in the Aleutian Chain of Alaska. Installed wireless networks and servers on a mobile fish processing platform, mountain sites, and on small islands.
- Developed high survivability remote sites with power supplies and communications links exceeding 99.8% reliability in an environment that routinely experiences hurricane force winds in blizzard conditions, requiring only annual maintenance for refueling.

University of Washington, Graduate Research

- Developed a process that reduced the cost and improved the reliability of storing cells for cancer treatment.

Washington State University, NSF Funded Undergraduate Research

- Developed numerical simulations of specialized flows. Research directed toward developing electronic micro- and nano-pump technologies

Teaching

- Given the opportunity to teach Heat Transfer, a 300 level engineering course while at the UW. He kept the students awake, occasionally laughing, and his class was able to score well against tests prepared by outside instructors.
- Tutored non-traditional students in math, science, astronomy and engineering at the University of Idaho while at WSU.

Education

M.S. Mechanical Engineering, University of Washington (2004-2006)
B.S. Mechanical Engineering, Washington State University (2002-2004)
B.S. Physics and Astronomy, The Evergreen State College, (1999-2002)

Certifications

E.I.T. Certified in June 2004, P.E. License since December 2013

Jessica Tanumihardja

Experience

Northwest Water Systems, Inc. (2013-present)
- Preparing Small Water System Management Programs and assistance in the preparation of Water System Plans including operational, administrative, and financial issues pertinent to water system management.
- Assisting Lead Engineer in Group A and Group B water system treatment design.

King County Wastewater Treatment Division (2012-2013)
- Assisted project managers with development of methodology for scope review, scheduling, and QA/QC
- Involved in 3 public projects: Muray CSO Control, Equity and Social Justice Analysis, and North Creek Force Mains Analysis and Repairs

University of Washington, Environmental Engineering (2011-2013)
- Research on degradation of chemotherapeutic drug (5-Fluorouracil in chlorine; kinetics and behaviors

University of Washington, Chemical Engineering (2009-2011)
- Conducted various experiments for application of nanotechnology, such as iron oxide synthesis, gold nanoparticle synthesis, iron sulfide nanowire synthesis, and polymer solar cells

Green Innovative Safety Technology, LLC, Engineer (2012-2014)
- Co-founder and Chemical & Environmental Engineer of GIST, LLC
- Proposed highway lane separation barriers made of recycled tires

Education

M.S.E, Civil and Environmental Engineering, University of Washington (2011-2013)
B.S. Chemical Engineering, University of Washington (2008-2010)

Certifications

E.I.T. Certified in December 2013