ATTORNEYS FOR APPLICANT SUEZ WATER IDAHO INC.

BEFORE THE IDAHO DEPARTMENT OF WATER RESOURCES

IN THE MATTER OF INTEGRATED MUNICIPAL APPLICATION PACKAGE ("IMAP") OF SUEZ WATER IDAHO INC., BEING A COLLECTION OF INDIVIDUAL APPLICATIONS FOR TRANSFERS OF WATER RIGHTS AND APPLICATIONS FOR AMENDMENT OF PERMITS.

AFFIDAVIT OF CHRISTIAN R. PETRICH

RECEIVED
APR 06 2018
DEPARTMENT OF WATER RESOURCES
Christian R. Petrich, being first duly sworn upon oath, deposes and states:

1. I am Principal Engineer / Hydrologist (Emeritus) with, and co-founder of, SPF Water Engineering, LLC (SPF). I have worked as an engineer and hydrologist for over 30 years. I co-founded SPF in 2004.

2. My resume is set out as Exhibit 8 to the *Master Water Plan for the Years 2015 to 2065* (2065 Master Water Plan) prepared by SUEZ Water Idaho Inc. (SUEZ).

3. I have conducted or led the preparation of water-demand projections in the Treasure Valley, Rathdrum Prairie, and Palouse areas.

4. I have reviewed the motion for summary judgment and supporting memorandum filed by the Boise Project Board of Control (Boise Project) in this matter.

5. The Boise Project contends that the 50-year planning horizon employed by the 2065 Master Water Plan and its water-demand forecast developed by John Church (Church Forecast) is not reasonable and that the planning horizon is inconsistent with the durations of land use planning documents such as *Blueprint Boise* (Boise's comprehensive land use plan) and *Communities in Motion 2040* (the transportation planning document issued by COMPASS).

6. It is my professional judgment, supported below, that the 50-year planning horizon incorporated by SUEZ is (a) consistent with regional water-supply planning efforts and (b) appropriate for long-range water-supply planning in the Treasure Valley.

7. The 50-year planning horizon is consistent with regional water-supply planning efforts undertaken by the Idaho Water Resource Board (IWRB). Based on funding established
by the 2008 Legislature, the IWRB implemented a statewide Comprehensive Aquifer Planning and Management Program (CAMP) that included efforts to develop long-range water management plans. Water management plans in this program were “designed to address water supply and demand issues looking out 50 years into the future. The program [was] intended to investigate strategies and develop plans which will lead to sustainable water supplies and optimum use of the water resources.”

8. In 2009, the IWRB solicited proposals to project future water demand in the Treasure Valley and Rathdrum Prairie areas (see the attached “2009 RFP” in Exhibit A) to support Idaho’s CAMP. The 2009 RFP states that CAMP was designed to provide the IWRB and the Idaho Department of Water Resources (IDWR) “with the necessary information to develop plans for managing ground and surface water resources into the future” and to produce “water management plans [that] will be designed to address water supply and demand issues looking out 50 years into the future.” The 2009 RFP specified that future water demand for these regions be forecast for a 50-year period.

9. The consulting company WRIME projected future Treasure Valley water demand in 2010 for the IWRB. WRIME used a 50-year horizon for its water-demand projections.

10. An aquifer management plan for the Treasure Valley has not been finalized by the IWRB as part of CAMP. However, the most recent proposed Treasure Valley Comprehensive

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2 [http://www.idwr.idaho.gov/WaterBoard/WaterPlanning/CAMP/TV_CAMP/PDF/2011/1.03.11_TVWaterDemandFinal_WRIMES.pdf](http://www.idwr.idaho.gov/WaterBoard/WaterPlanning/CAMP/TV_CAMP/PDF/2011/1.03.11_TVWaterDemandFinal_WRIMES.pdf)
Aquifer Management Plan\(^3\) lists the specific goal of providing “reliable sources of water, projecting 50 years into the future.”

11. In 2015, the IWRB retained SPF to project future water demand in the Treasure Valley (SPF engaged subcontractors John Church and Bob Taunton to assist in this study). I managed this project, and was the primary author of a report entitled *Treasure Valley DCMI Water-Demand Projections (2015-2065)* dated August 8, 2016 (2016 TV DCMI Report). In this report, domestic, commercial, municipal, and industrial (DCMI) water demand was projected for a 50-year period extending from 2015 to 2065.

12. The 2016 TV DCMI Report was part of an assessment of Boise River Basin storage requirements and opportunities conducted by the U.S. Army Corps of Engineers and the IWRB. Increasing basin storage can take decades, and the benefits of such increased storage to address current and future demand can accrue over decades. A 50-year water-demand projection horizon is, in my view, appropriate with such a long-term assessment. It’s my understanding that SUEZ may consider surface water and storage to fill any “gap” between its water rights portfolio and its future demands.

13. In 2009, the IWRB retained SPF to characterize then-current water use and project future water demand from the Idaho portion of the Spokane-Rathdrum Aquifer (SPF was assisted by Amec Earth & Environmental and John Church). I managed this study and was primary author of a report entitled *Rathdrum Prairie Aquifer Water Demand Projections, SPF Water Engineering, LLC, July 2010*, which was attached as Appendix 3 to the Rathdrum Prairie Aquifer Comprehensive Aquifer Management Plan (RPA CAMP). The Rathdrum Prairie water-

demand projections were based on a 50-year timeframe, as requested by the IWRB for its regional water-supply planning efforts.

14. The RPA CAMP plan "provides a framework for long-range management of the aquifer. The Plan describes the overarching goals and recommended actions which can be implemented to successfully accomplish the stated goals for local residents, the state of Idaho, and to promote productive regional cooperation to benefit the area over the next 50 years." The plan incorporated the 50-year water-demand projections prepared by SPF et al. (2010).

15. In 2013, SPF prepared an assessment of water-supply alternatives for the City of Moscow, Idaho. The assessment included a review of existing water-demand projections by the City of Moscow, City of Pullman, Washington State University, and University of Idaho, and extending those projections to incorporate a 50-year timeframe. The 50-year timeframe was based on the need for evaluating long-term, surface-water supply options.

16. In the 2016 TV DCMI Report (see paragraph 11 above), we projected a population increase in Ada and Canyon Counties from approximately 625,000 people in 2015 to approximately 1.57 million people in 2065. We projected that valley-wide DCMI water demand will increase from approximately 110,000 acre-feet annually (AFA) in 2015 to between 216,000 and 298,000 AFA by 2065. The actual Treasure Valley water demand in 2065 may be greater or less than these amounts, but these projections prepared for the IWRB currently represent the best available science.

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5 City of Moscow Surface Water Availability Study – Phase 2, prepared by SPF Water Engineering LLC and TerraGraphics Environmental Engineering, Inc. for the City of Moscow, January 3, 2014.
17. In my August 1, 2016 report attached as Exhibit 7 to SUEZ’s 2065 Master Water Plan, I identified the portion of the projected Treasure Valley population growth and water-demand increase that would occur within the SUEZ planning area. Based on my 2016 TV DCMI Report, the projection deemed most likely is that DCMI water demand within the SUEZ planning area could more than double in the next 50 years, increasing from approximately 49,000 AFA to over 100,000 AFA. These projected increases are consistent with similar projections made by Mr. Church for SUEZ.

18. Applying for, developing, perfecting, or acquiring municipal water rights can take decades. Similarly, identifying, assessing the adequacy of, and developing sources of water supply can take years or decades. These challenges are greater for a large utility serving a rapidly growing urban area in which large portions of supply sources are considered fully appropriated. Given the magnitude of projected water-demand increases (see above), it is my judgment that SUEZ is prudent in using a 50-year planning horizon in its water-supply planning efforts.

19. In summary, the 50-year planning horizon incorporated by SUEZ is consistent with multiple IWRB and IDWR long-range water-supply plans and consistent with existing, long-range water-demand projections in the Treasure Valley. Furthermore, I believe that 50 years is a reasonable water-supply planning timeframe for a large utility serving tens of thousands of customers and having the obligation to provide water for a rapidly growing urban population.
DATED this 6th day of April, 2018.

By

Christian R. Petrich, Ph.D., P.E., P.G.

Subscribed and sworn to before me this 6th day April, 2018.

Kendra Hoffman
Notary Public for Idaho
Residing at: Boise, Idaho
My Commission Expires: 10/22/18
CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 6th day of April, 2018, the foregoing was filed, served, and copied as shown below. Service by email is authorized by the Hearing Officer’s Order of September 11, 2017 at page 3.

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For Christopher H. Meyer

AFFIDAVIT OF CHRISTIAN R. PETRICH (APRIL 6, 2018)
14149829_5 / 30-147
Dear Prospective Bidder:

You are invited to submit a proposal to the Idaho Water Resources Board (IWRB) regarding the attached Request for Proposal (RFP) for water demand studies.

To be considered for award of this work, sealed proposals must be received at the Idaho Department of Water Resources, no later than 5:00 pm local time, on February 6th, 2009. Late proposals will not be considered. Proposals should be mailed to:

Patsy McGourty, Administrative Assistant
(Future Water Demand Proposal -DO NOT OPEN)
Idaho Water Resource Board
322 East Front Street
PO Box 83720
Boise, ID 83720-0098,

All questions related to this Request for Proposals must be submitted in writing (not electronic) to the preceding address no later than 5:00 pm on January 26th, 2009. Answers to all questions will be posted on the Department’s website http://www.idwr.idaho.gov/ by 5:00 pm on January 28th, 2009.
INTRODUCTION

The Idaho Water Resource Board (IWRB) is requesting proposals for future water demand studies for the two project basins (Treasure Valley, Rathdrum Prairie; see attached map) associated with the Comprehensive Aquifer Management Planning effort in the State of Idaho. The IWRB is an agency of the State of Idaho with authority to undertake water resource projects and planning.

The 2008 Legislature approved House Bill 428 and House Bill 644 establishing the Statewide Comprehensive Aquifer Planning and Management Program (42-1779) and the Aquifer Planning and Management Fund (42-1780). This legislation authorizes characterization and planning efforts for several basins over the next 10 years. The Aquifer Planning and Management Program is designed to provide the Idaho Water Resource Board and the Idaho Department of Water Resources with the necessary information to develop plans for managing ground and surface water resources into the future. The program has two phases: (1) a technical component to characterize the surface and ground water resources of each basin, and (2) a planning component that will integrate the technical knowledge with an assessment of current and projected future water uses and constraints. This program will culminate with the development of long-range plans for conjunctively managing the water resources of each basin which integrates hydrologic realities with the social needs.

The water management plans will be designed to address water supply and demand issues looking out 50 years into the future. The program is intended to investigate strategies and develop plans which will lead to sustainable water supplies and optimum use of the water resources.

Increasing competition for water is a trend demonstrated by increased conflict among competing water users. Effective water management and planning will require an understanding of supply and demand currently and predicted needs in the future.

The Idaho Department of Water Resources previously worked in collaboration with the Community Planning Association of Ada and Canyon Counties (COMPASS), and the United States Geological Survey (USGS) to assess current DCMI water-use conditions and project future needs. The U.S. Bureau of Reclamation (USBR) provided the funding for the project. This report can be found at:
Comprehensive hydrologic projects have been completed in both the Treasure Valley and the Rathdrum Prairie. Information regarding these projects, including reports and data, can be found at:
http://www.idwr.idaho.gov/hydrologic/projects/tvhp-revised/
http://www.idwr.idaho.gov/hydrologic/projects/svpr/

ANTICIPATED TASK ELEMENTS

Each future water demand study is anticipated to assess current water-use conditions and forecast future water demand over a 50 year period in 10 year increments. Each study will forecast both 1) DCMI (domestic – including self-supplied, commercial, municipal and industrial) and 2) agricultural water demand for any given project basin, and 3) environmental and water quality needs or limitations regarding future water supplies.

In any given project basin, a study will be undertaken which will involve compiling existing water use data and estimating future demand.

- Develop mutually agreed upon conceptual framework and select/propose appropriate methodology for estimating future water demand in the project basin. This will be in coordination with IDWR.
- As a basis for projecting DCMI water demand, identify existing population projections and/or develop 50 year population projection (in 10 year increments) for the project area based upon latest census data.
- Using the 50 year population projections (10 year increments), forecast future DCMI water demands, by category, in the project basin.
- Forecast agriculture water demand over the next 50 years (10 year increments).
- Compile and assess existing information to project environmental and water quality needs, including Federal requirements that may limit management options, quantify if possible.
- Qualitative assessment of potential water supplies made available through implementation of conservation measures.
- Develop data sets for incorporation into GIS tools and products.
- Prepare and present status reports for the Advisory Committee.
The contractor shall provide all necessary personnel, equipment, administrative support and materials needed to complete the following tasks:

Task 1
Propose conceptual framework and methodology to accomplish elements identified above with an estimated completion date of December 31st, 2009. Proposals are subject to review and approval by IDWR project manager.

Task 2
Perform study as delineated in Task 1.

Task 3
Give presentations to IWRB, Legislature, and Advisory Committee and attend quarterly status report meetings with IDWR staff.

Task 4
Prepare monthly status reports and final written report

The Department of Water Resources, in its capacity as staff for the Idaho Water Resource Board, shall:

Task 1
Provide guidance, direction and support as available to contractor on technical and administrative activities associated with Future Water Demand study.

Task 2
Collaborate in developing strategies, objectives and goals in coordination with contractor.

Task 3
Review the work performed, provide timely feedback, and suggest changes to the Contractor.

Task 4
Provide overall contract administration and oversight.
REQUEST FOR PROPOSAL REQUIREMENTS

Two contracts will be issued; one for future water demand studies in the Treasure Valley, and one for future water demand studies in the Rathdrum Prairie. Interested parties should submit proposals separately, clearly indicating the applied-for project area.

Interested contractors must submit five (5) copies of each proposal containing the following minimum information:

- description of the firm(s) and work history on similar projects;
- qualifications and experience of each project team member;
- proposed approach to each task;
- key personnel assigned to each task;
- utilization of each person assigned to each task and the home-base for each person;
- estimated time required to complete the study or studies;
- description of the procedure for internal quality assurance/quality control;
- estimated cost to complete studies including an itemized estimate of other reimbursable and equipment costs. The cost proposal sheet (attached) must be submitted in a separate document from the rest of the proposal. (No cost proposal submitted to the Board will be released to competing firms, individuals, agencies, or the general public to the extent of the Idaho public records law.)
- a disclosure and certification regarding impartiality is required. The contractor shall disclose whether there are any existing or past relationships with foreseeable participants in the planning process likely to affect or create the appearance of affecting the impartiality of the contractor or the project team, including any financial benefit or personal benefit that could be derived from the outcome of the facilitation. The contractor shall certify that neither the firm nor the individual members of the project team possess any financial interest or personal interest in the outcome of the facilitation.
To be considered for award of this work, sealed proposals must be received at the Idaho Department of Water Resources, no later than 5:00 pm local time, on February 6th, 2009. Late proposals will not be considered. Proposals should be mailed to:

Patsy McGourty, Administrative Assistant
(Future Water Demand Proposal – DO NOT OPEN)
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322 East Front Street
PO Box 83720
Boise, ID 83720-0098,

All questions related to this Request for Proposals must be submitted in writing (not electronic) to the preceding address no later than 5:00 pm on January 26th, 2009. Answers to all questions will be posted on the Department’s website http://www.idwr.idaho.gov/ by 5:00 pm on January 28th, 2009.
EVALUATION AND SELECTION

Selection of the contractor shall be based on the following evaluation criteria. The points assigned to each are listed in parentheses. The point total is 1000 with up to an additional 100 points if interviews are necessary.

1. Capability to perform the work including firm’s history, areas of expertise, and firm’s commitment to provide necessary resources to perform and complete the project within a reasonable time frame; (200 pts)

2. Relevant project experience including similar work performed by the firm and a list and description of similar work performed during the past five years (include name and phone number for appropriate contact persons); (150 pts)

3. Qualifications of project team including experience of key personnel to be assigned to the project and subcontractors, if any, team organization, roles of key personnel including anticipated task assignments, and location of assigned personnel; (150 pts)

4. Project approach including how the contractor proposes to execute each task required to complete the scope of the work, a description of the procedure for internal quality assurance/quality control, unique aspects of the proposed approach, and alternative approaches that the Board may want to consider; (150 pts)

5. Estimated cost to complete studies including an itemized estimate of other reimbursable and equipment costs; (350 pts) and

6. The evaluation committee has the discretion of requesting an interview with the top two finalists for each basin. A maximum of up to 100 points may be added to the evaluation criteria based on the results of the interview. (up to 100 additional pts)

A pre-selected evaluation committee will review and evaluate each proposal based on consideration of those factors set forth above. Upon selection, a contract will be developed between the IWRB and the selected contractor. Development of a contract is contingent upon the availability of legislatively appropriated funds. The IWRB reserves the right to exclude tasks from the final contract.
COST PROPOSAL SHEET

Estimated cost to complete studies including an itemized estimate of other reimbursable and equipment costs

Firm Name

DATE

SIGNATURE (include title)
General boundaries of the study area