

**North San Joaquin Water Conservation District (NSJWCD)  
South Pump Rehabilitation Preliminary Design**

**Task Order No. 2  
Amendment No. 1**

**Kjeldsen, Sinnock & Neudeck, Inc. (KSN)  
Scope of Professional Services  
September 25, 2014**

**Task 3.1 Preliminary Pump Station Rehabilitation Concepts**

In addition to the pump station rehabilitation concepts prepared under the original scope, KSN will evaluate pump station concepts consistent with providing irrigation pumping to a pressurized distribution system. This Amendment No. 1 task will include:

1. Pump selection for a phased set of improvements with the objective of providing flexible diversion capacities ranging from 15 cfs to up to 40 cfs to a pressure conveyance system;
2. Preparation of pump station preliminary arrangement and layout design and sketches to accommodate the pump selection performed above; and
3. Description of a proposed operational strategy for pump and conveyance facilities operation.

**Task 4.1 – Prepare Pump Station Rehabilitation Cost Opinion**

The pump station rehabilitation cost opinion will be updated to include rehabilitation of the pump station for pressure system operation as an alternative to the gravity system already evaluated. The cost opinion will also be updated to include the construction cost for recommended conveyance facilities improvements identified under Amendment No. 1 Task 5.0 (below).

**Task 5.0 – Prepare South System Pipeline Assessment and Rehab Program**

Information already collected by KSN will be supplemented with new information gathered during a site visit with the objective of obtaining a general assessment of the first approximately 6,500 lineal feet of conveyance system condition and characteristics and for developing a basis of design for irrigation deliveries to the northern section of the system and along Bear Creek and Pixley Slough. This task will include the following activities:

1. Gathering additional size and condition information for the first 6,500 feet of conveyance facilities, based on information readily available from the District or from prior District staff;
2. Reviewing the apparent interconnection point between Bear Creek and the upper end of Pixley Slough, including discussing system operation or design constraints with the San Joaquin Area Flood Control Agency;
3. Meeting with key growers along the identified initial supply alignment to obtain typical irrigation operating strategies and scheduling;
4. Development of an estimated peak irrigation delivery requirements for the Northern-most segment and Bear Creek/Pixley Slough corridor;

5. Based on this information, conducting an assessment of the facilities to identify improvements to either reliably convey water via gravity or for conversion to a pressure system anticipated to operate at 100 psi or less at the range of flow rates considered for the pump station; and
6. Preparing a set of recommended improvements developed to meet the above objectives and used as the basis for the rehabilitation cost opinion.

The project approach already evaluated in the original Task order and this supplemental work for the new pressure system alternative and initial conveyance facilities would be summarized in a written report to be presented to the District Board of Directors in draft form. Following input from the District a final report would be prepared for the District's use.

Based on efficiencies in developing information to-date, we anticipate the additional effort to include Amendment tasks 3.1, 4.1, 5.0 and initial mapping database efforts to date will increase our Total Fee for Task Order No. 2 and Amendment No. 1 will not exceed \$47,000.

North San Joaquin Water Conservation District

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Kjeldsen, Sinnock & Neudeck, Inc.

Signature: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

