



# CITY OF BISHOP

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[www.ca-bishop.us/CityofBishopPublicWorks.htm](http://www.ca-bishop.us/CityofBishopPublicWorks.htm)

## Request For Proposals

### Water SCADA

**Release:** 16 September 2009

**Close:** 9 October 2009

**Contact:** David Grah, Director of Public Works

**General:** The City of Bishop requests proposals for design and installation of a Supervisory Control and Data Acquisition (SCADA) system for its domestic water system.

The city's water system serves a permanent population of about 3,500 through about 1,100 service accounts. Its source of water is groundwater from two production wells, Well 2 and Well 4. Well 4 is the main water source. Well 2 runs when needed to maintain desired system pressure. A third well, Well 1, is kept on standby due to high fluoride levels. There is one 1 million gallon storage tank. Water from Well 4 is subject to mild chlorination. Water from other wells is not chlorinated. A map and a schematic of the system are attached.

Well 4 is controlled based on level in the storage tank and the chlorinator is controlled based on the operation of Well 4. Wells 1 and 2 have variable speed drives and are controlled by system pressure. Level in tank is transmitted to Well 4 using a dedicated phone line leased from Verizon. Periodically, there are problems related to this lease line. The chlorinator senses the start of Well 4 when a power circuit energizes. Low and high tank alarms are reported to staff phones by a dialer. Well 2 has a data logger as part of its controls.

In the next 5 to 10 years, the city plans to expand its system by adding two new 1 million gallon storage tanks and a new well to be called Well 3.

**Desired System:** The city desires a SCADA system to perform primary monitoring and control of its water system. The ability to control Well 4 based on tank level using a lease line should remain for redundancy. The primary

monitoring and control location should be the Public Works Shop. Secondary monitoring and control should be over the internet including monitoring and control from the Public Works office in City Hall. The preferred means of communication between SCADA elements is radio.

The SCADA should include the three existing wells, the storage tank, and the chlorinator and all important related parameters. The city has identified the parameters shown on the attached list as potentially desirable for the SCADA system.

In addition to on-site and remote manual control, the system should support at least two automatic control configurations and the configurations should be modifiable. Two automatic control configurations should be:

1. Well 4 operation based on tank level, Well 1 and 2 operation based on system pressure.
2. Well 1 or 2 operation based on tank level, the other based on system pressure, Well 4 off.

The SCADA system should use high quality equipment and software standard in the industry. The system should be appropriately protected against power fluctuations and outages, lightning, and other threats.

**Scope of Work:** The scope of this Request for Proposals (RFP) is for the technical planning, design, licensing, furnishing, installation, testing, training, and support of a SCADA system for the City of Bishop domestic water system as generally described above. The city has not established detailed requirements for the system and expects to rely heavily on the selected firm to develop that detail.

**Proposal:** A qualifying proposal must address the entire scope of work and include:

1. Brief description of firm, contact person, address, telephone number, and e-mail address.
2. Resumes of staff involved.
3. Description of approach to work and description of proposed delivery products.
4. Method of determining viability of radio connections.
5. Three references at small agencies where firm has implemented similar systems.

6. Proposed work schedule.
7. Proposed basis of compensation.
8. Estimated cost and assumptions used to develop estimate.

Proposals must be received no later than 1500 (3 pm) on the closing date of this Request for Proposals (RFP). Send proposals to:

David Grah  
 Director of Public Works  
 City of Bishop  
 377 West Line Street  
 Bishop, California 93514  
 publicworks@ca-bishop.us

Three paper copies and one electronic copy of the proposal shall be submitted in a sealed envelope which is clearly marked with the title of the RFP.

**Selection Process:** The consultant will be selected based on the experience and ability of the firm and staff to accomplish the scope of work, based on the proposal and considering the effective use of funds. Each firm will be rated based on the requirements of this RFP and using the following criteria and rating schedule.

<b>Evaluation Criteria</b>	<b>Possible Rating Points</b>
High level of technical expertise with design and installation of SCADA systems.	20
Quality of proposed project delivery products.	20
Experience successfully implementing SCADA systems for small municipalities.	20
Able to maintain excellent client service over life of project.	20
Able to deliver product cost effectively and in a timely way.	20
<b>Total</b>	<b>100</b>

The City will attempt to negotiate contracts with the highest rated firm. The City reserves the right to reject any or all proposals, to waive minor irregularities in said proposals, or to negotiate minor deviations with the successful firm.

## Potential SCADA Parameters

### **Storage Tank:**

1. Level.
2. High level alarm.
3. Low level alarm.

### **Wells:**

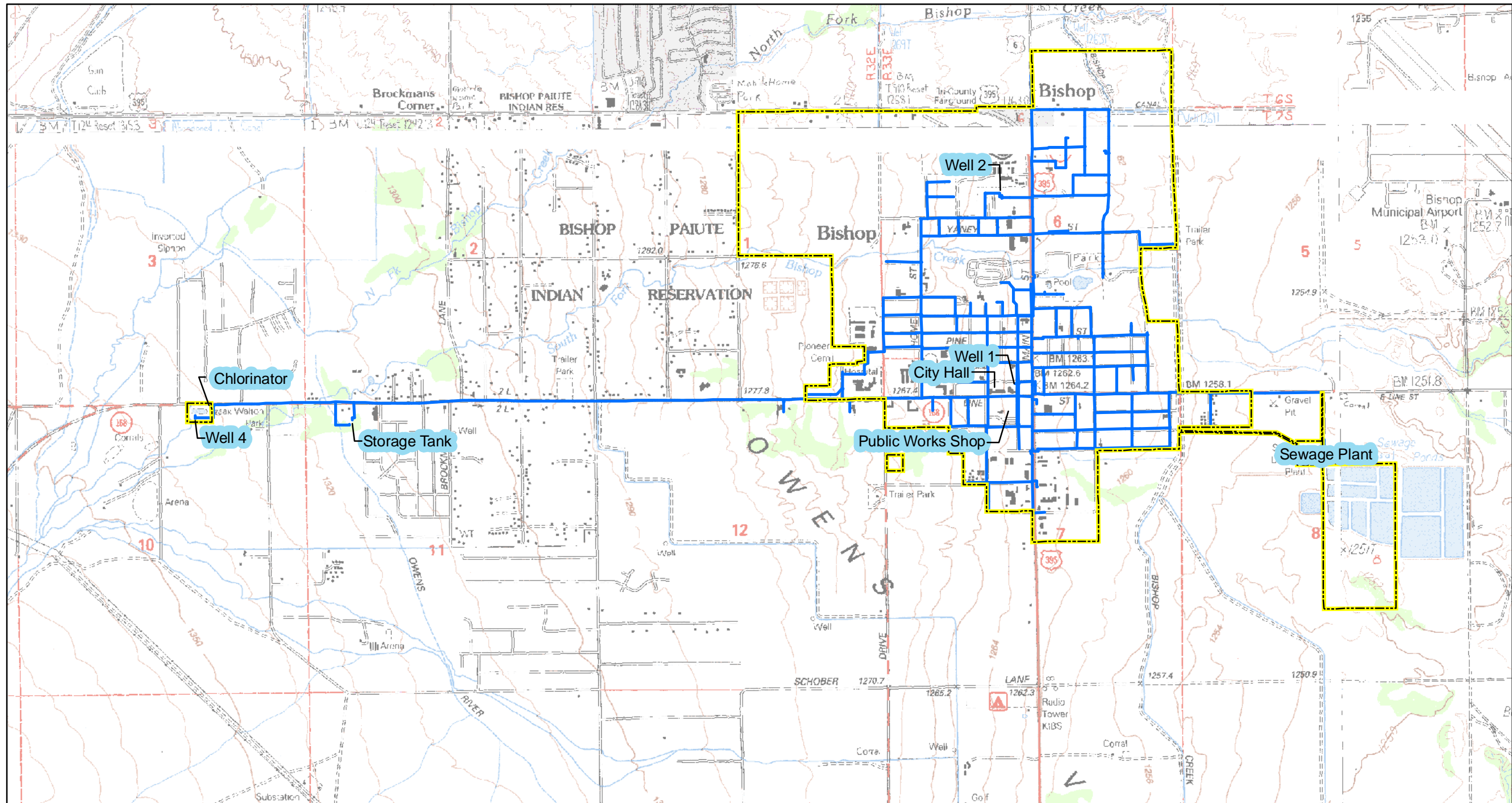
1. On or off.
2. Meter reading.
3. Flow rate.
4. On manual override.
5. System pressure.
6. Faults.

### **Chlorinator:**

1. On or off.
2. Hour meter reading.

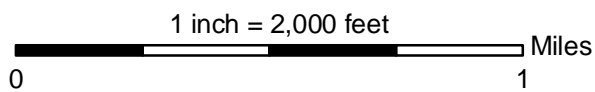
### **System:**

1. Pressure.
2. High pressure alarm.
3. Low pressure alarm.



**Legend**

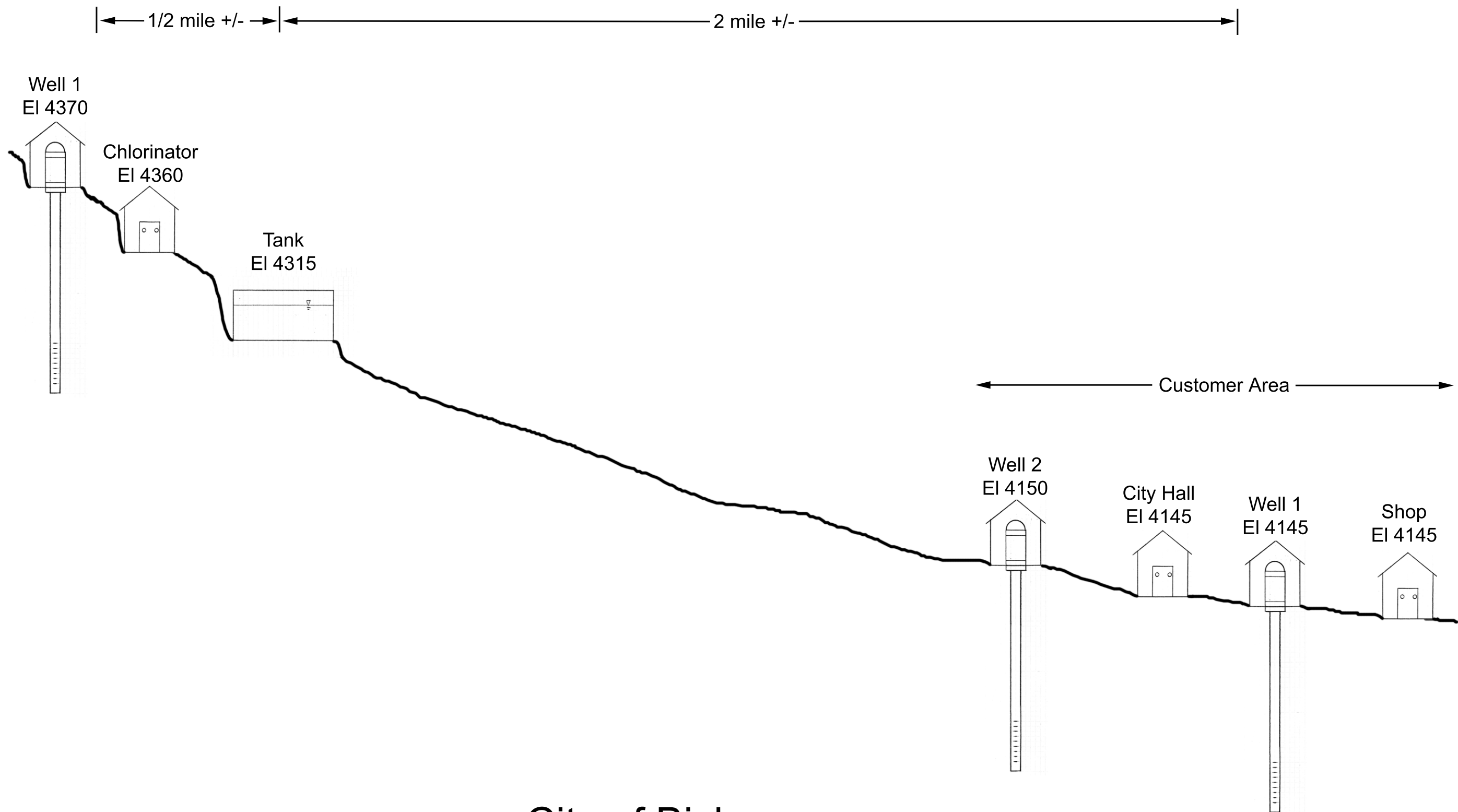
- City Limit
- Water Line



## City of Bishop Water System Overview for SCADA



City of Bishop Location Map



# City of Bishop Water System Elevation Schematic

EI = Elevation