

Canal Flow Level Sensor & Water Management Automation Project

Applicant

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Executive Summary

January 10, 2017 - Westland Irrigation District- Echo, Umatilla County, Oregon

Westland Irrigation District is proposing to install an AC powered telemetry unit for measuring flow depth at a strategic location on our main irrigation canal. The funds will be used to purchase and install the telemetry equipment for integration into our existing telemetry system, which allows Westland field staff to monitor canal flow rates at various delivery system locations through their smart phones.

The project contributes to accomplishing the goals of this FOA by automating flow depth measurement through telemetry automation, providing constant information for improving our irrigation flow management, efficiency and reliability of delivery to Westland patrons.

The equipment will take approximately 8 – 12 weeks to arrive once the order is placed and then another week to be installed and placed in service. Our estimated completion date is approximately mid-May of the 2017 irrigation season.

The project is not located on a Federal facility.

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Background Data

Westland is one of the four irrigation districts in the U.S. Bureau of Reclamation's Umatilla Project, located in north-central Oregon. Established in the early 1900's, Westland is a private district delivering water from the Umatilla River early in the spring and then later from McKay Reservoir to approximately 14,700 acres of farmland, mainly in Umatilla County. Primary crops include alfalfa, asparagus, beans, corn, grass seed, melons, mint, onions, peas, potatoes, wheat and pasture.

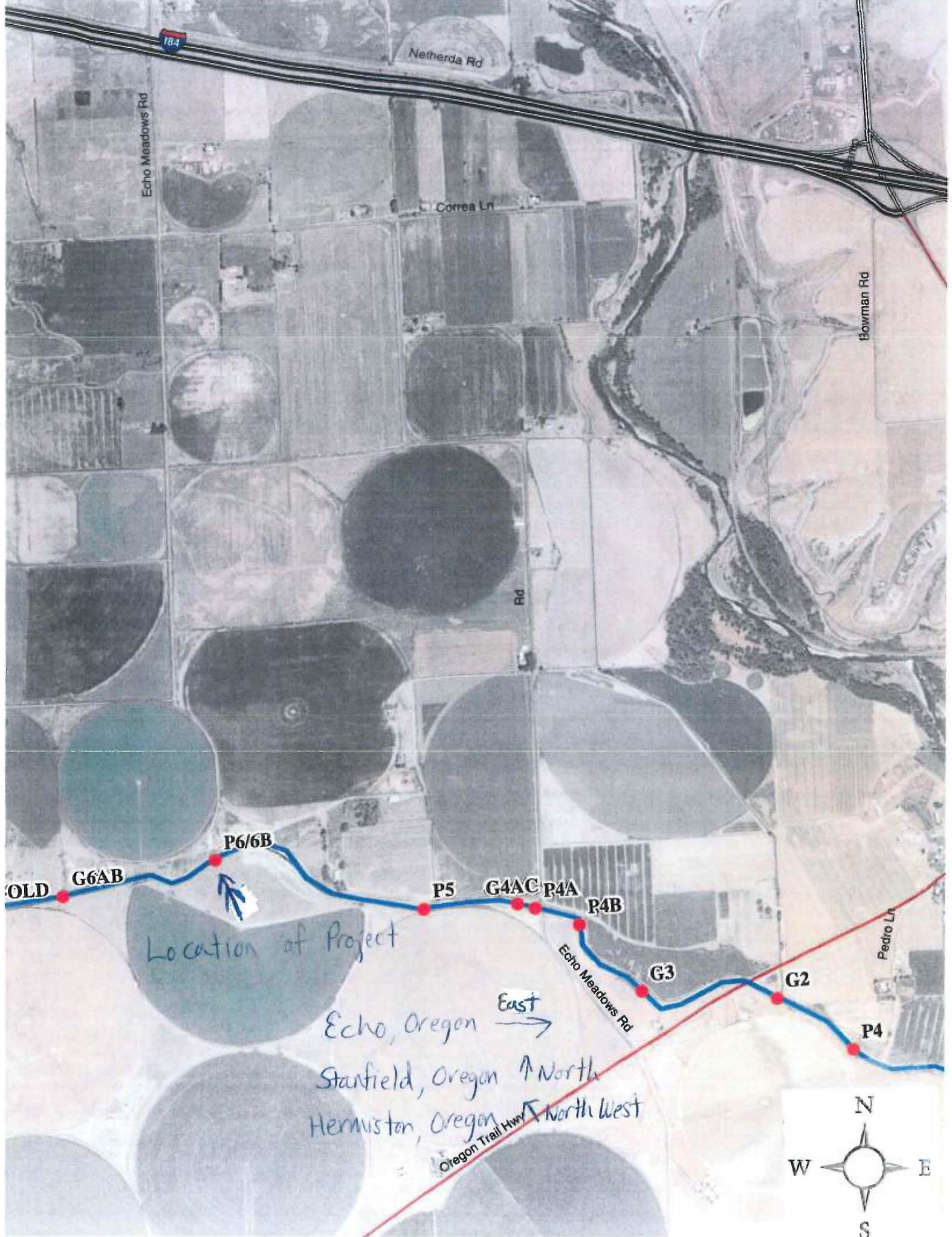
Westland holds Oregon State water rights to Umatilla River water supplies and has a contract with Reclamation for stored water in McKay Dam and Reservoir, located south of Pendleton. The district's privately owned diversion facilities, the Westland Diversion Dam and Main Canal, are located 1 mile south of Echo. Separate individuals holding Umatilla River water rights, and water right holders in four private ditch companies, rely upon Westland's canal to receive their water supplies as well. Westland has fully repaid the U.S. for its share of capital construction costs for the Umatilla Project. Westland serves approximately 270 water users annually. Each year there are potential shortfalls in water supply due to low snow pack, drought, McKay Reservoir not filling to capacity and various other factors.

Westland's delivery system is a mix of earthen, open canals which carry water supplies to the bulk of its patrons, and pressurized pump stations serving 3,500 acres through buried pipelines. Approximately 55,000 acre-feet of water is diverted into the Westland delivery system each irrigation season. Every withdrawal point from the Westland canal is metered or recorded via staff gages to ensure proper delivery to patrons.

Due to the need for efficient use and management of its water supplies, Westland has instituted remote monitoring of canal flow locations and pump

station output, in combination with automated control of gate structures for canal safety and reduced tailwater losses.

Westland has a long-standing partnership with Reclamation in the Umatilla Basin, most recently in collaboration to address water right claims of the Confederated Tribes of the Umatilla Indian Reservation.



Echo Meadows Rd

Netherda Rd

Correa Ln

Bowman Rd

Rd

Pedro Ln

OLD

G6AB

P6/6B

P5

G4AC

R4A

P4B

G3

G2

P4

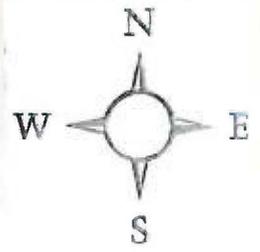
Location of Project

Echo, Oregon → East

Stanfield, Oregon ↑ North

Hermiston, Oregon ↖ North West

Oregon Trail Hwy



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Project Description

Westland Irrigation District's annual water supplies are uncertain due to the dependency upon adequate spring runoff into the Umatilla River and the quantity of stored water captured each year in McKay Reservoir. Effective management of its scarce water and efficient delivery to its patrons is paramount. The proposed project will be another valuable tool as part of Westland's water supply management & stewardship.

The need for the addition of a canal flow level sensor at the project location has been identified by Westland field operations personnel and confirmed by professional engineers. A power supply for the project components is readily available, and construction will result in a minimum of disturbance near the canal bank. Once installed and operational, the sensor will communicate continuous flow level data to Westland field personnel's smart phones and to Westland's desktop base station data logger. An auto-dialer alarm system will be triggered when flows reach key levels, notifying Westland personnel of a potential water delivery issue developing.

While this project is relatively small in scope, it will address an important concern in the Westland delivery system for continuous, uninterrupted delivery of water to its growers. Protection of the integrity of open canal delivery systems is a key component of overall irrigation system management, and is a worthy investment of resources.

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Evaluation Criteria

Evaluation Criterion A – Planning Efforts Supporting the Project

The proposed project addresses a need to monitor and control the depth of the water at a critical area in the canal delivery system. Its priority status is tied to the overriding importance of maintaining and managing canal integrity.

Evaluation Criterion B – Project Benefits

The project will provide for better management of the water in the canal allowing for more even distribution, better efficiency and improved delivery. It will benefit Westland's water supply delivery system through real-time monitoring of a key delivery area.

Evaluation Criterion C – Project Implementation

The project will be immediately implemented upon the grant being awarded. The telemetry equipment will take 8 – 12 weeks to arrive and then approximately one more week for installation and operational testing. There are no special permits, engineering or design work needed for the project. There are no new policies or administrative actions required to implement the project.

Evaluation Criterion D – Nexus to Reclamation

The project is connected to Reclamation by the stored water Westland receives from McKay Reservoir. The project will help improve the management of water more effectively and strategically by implementing available technology for valuable resource stewardship.

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Environmental and Cultural Resources Compliance

The proposed project will not impact the surrounding environment or any endangered species or designated critical habitat.

There are no wetlands or surface water in the project area that fall under the Clean Water Act.

The water delivery system was constructed in the early 1900s. The project will not result in modifications to headgates, canals or flumes.

There are no historic or archeological sites in the proposed project area. It has no effect on low income or minority populations or tribal lands.

The project will not contribute to the spread of noxious weeds.

There are no special permits or approvals necessary beyond what may be needed for minor electrical work. The Westland canal is a private delivery system and not part of a Federal facility.

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Official Resolution

The Westland Irrigation District Board of Directors will be meeting on Tuesday, January 17, 2017 and the official resolution will be submitted within 30 days.

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Project Budget

Westland Irrigation District will fund the non-federal share of the project costs from our reserve funds account.

Funding Sources-

Westland Irrigation District	\$ 5,000.00
Requested Reclamation Funding	5,000.00
Total	\$ 10,000.00

Budget Proposal-

Telemetry Equipment	\$ 5,595.00
Shipping	150.00
Startup Costs	1,250.00
Electrical Contractor & Misc. Exp.	3,005.00
Total	\$ 10,000.00

Budget Narrative-

Telemetry Equipment	\$ 5,595.00
DFA uRTU w/Radio, Antenna, Enclosure, Unimeasure String Level Gauge w/float	
Shipping	150.00
Startup Costs	1,250.00
Integrating with existing telemetry	
Electrical Contractor & Misc. Exp.	3,005.00
Installation of Equipment, labor and Materials	
Total	\$ 10,000.00