

24th ICID International Congress on Irrigation & Drainage

Frenchman Cambridge Enhances River Basin Stability

Varun Ravi, Program Manager – Rubicon Water

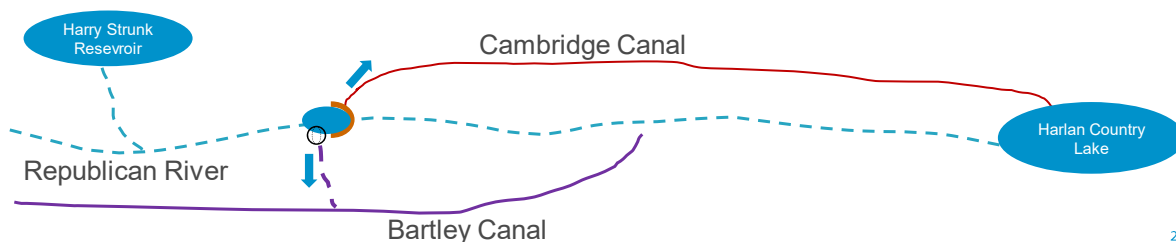
1

Situation



Situation

- The Republican River’s storage reservoirs hadn't filled to adequate levels, resulting in the inability to deliver consistent flows to farmers.
- FCID had a 7-day ordering schedule, due to the travel time required from the reservoir to the diversion dam.
- Resulting in irrigators having to change crops, fallowing plots, growing crops under stress and using supplemental wells



2

2

Initial steps for modernization

- Investing in distribution infrastructure improvements since the early 1980s, by **converting smaller lateral canals to buried piped systems**
- Several points in the system were also fitted with SCADA to better monitor and control flows at specific locations



3

3

Implementing automation

FCID decided to implement technology to automate the distribution system, including;

- Installed water-tight, solar powered, automated **flow control gates** enabling precise and continuous flow measurement
- Operated as an **interconnected network** of nodes, utilising distributed control architecture and a dedicated communication system.
- In addition, irrigation management software to enable **remote operation**, real-time **network monitoring** and demand planning tools.



4

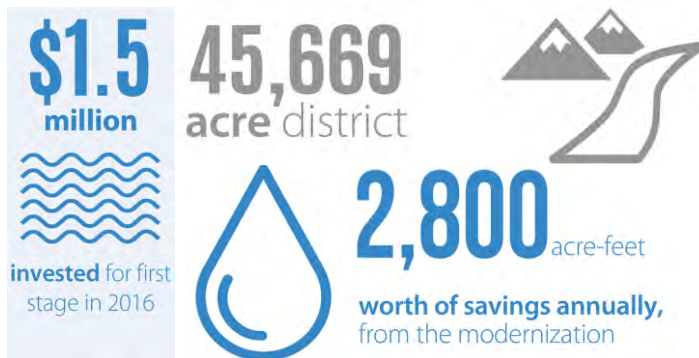
4



Early Modernisation Outcomes

Early outcomes of the Cambridge Canal Modernization

- Frenchman Cambridge undertook the first stage investment of \$1.5 Million in 2016, and saw demonstrated savings better than 2,800 ac-ft per year
- Water recovered at less than \$20 per acre-foot
- Based on the success, the second phase was installed to recover an additional 1,400 ac-ft, totalling another \$0.9M



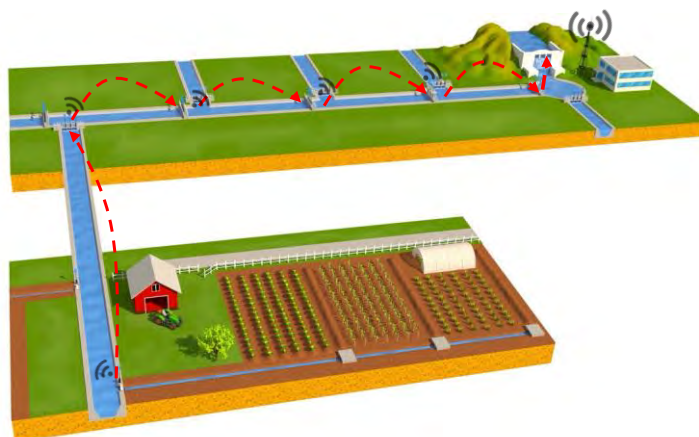
5

5



Automated Network Control

On-demand supply enabled by installing interconnected control and measurement technology into existing canals and pipeline infrastructure.



6

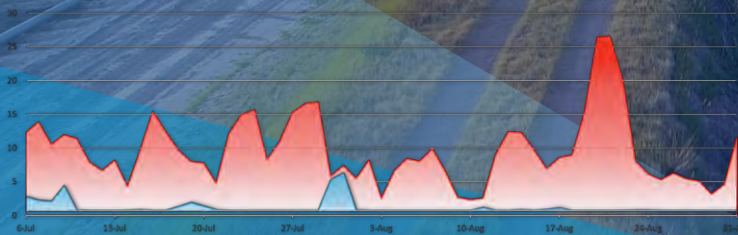
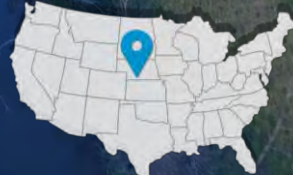
6

CASE STUDY - FCID

Current statistics of the FCID Modernisation

Operational water spills have reduced by more than 85% since implementation of TCC, enhancing river basin sustainability to farmers.

FCID delivers water to over 18,000 ha of land, throughout four primary canal systems that span 250km. Water losses for the 2016-2019 seasons averaged 18.6 ML/d. Losses following the implementation of Network Control for combined 2020-2022 seasons are averaging 2.5 ML/d, equating to an 85% reduction in system spills.



7



www.rubiconwater.com/

© 2022 Rubicon Water.

RUBICON logo and BayDrive, BladeMeter, BladeValve, CableDrive, FarmConnect, FerIT, FlumeGate, FlumeMeter, ForniPanel, MicronLevel, NeuroFlo, PikoGate, PikoMeter, SCADAConnect, SlipGate, SlipMeter, SolarDrive, Sonaray, TCC and Total Channel Control are trademarks and service marks, or registered trademarks and service marks of Rubicon Water or its affiliates in Australia, the United States of America and other jurisdictions. Systems, components, methodologies and software supplied by Rubicon Water may be the subject of patent and design rights in Australia and elsewhere.

8