CICL Round 2 Private Irrigation Infrastructure Operators' Program

Final Report

Photo 1 – CICL Directors and senior Managers after completion of construction of one of three new regulators on the CICL's Main Canal

Overview

CICL submitted its Private Irrigation Operators' Program Round 2 (PIIOP 2) funding bid to the Department of Sustainability, Environment, Water, Population and Communities (SEWPAC, later redesignated the Department of Environment and hereafter referred to as "the Department") on 22 July 2011.

CICL's original bid sought $19,436,790 of funding in return for the transfer of 5,152ML of water entitlement (of various classes) to the Commonwealth. This bid was based on three sub-projects: the construction of a 3,300ML balancing storage (SP6); the replacement of approximately 100 meters of varying types with FlumeGates (SP7) and works on 60 farms (SP8). On 7 December 2011, CICL received advice from Minister Tony Burke that SPs 6 and 7 would be funded.[1] The Deed of Agreement between CICL and the Department was signed on 29 June 2012 with the funding arrangement being for $7,350,000 (GST exempt) in exchange for 1,727ML of conveyance entitlement. CICL subsequently sought and gained approval to reduce the size of the storage to 600ML and to redirect the funding that would be saved towards the upgrade of three regulating structures on its Main Canal (Prickleys, No. 3 and Morundah regulators).

The purpose of this report is to satisfy CICL's final reporting obligations under its PIIOP 2 agreement with the Commonwealth and to record, for its own purpose, the essence of what was a successful project spanning three years.

Project Summary

CICL's PIIOP 2 project consisted of the following sub-projects (SP):

- SP1 (referred to as SP 6 within CICL)[2] involving the creation of a 600ML balancing storage; and
- SP2 (referred to as SP 7 within CICL) involving the replacement of 100 non flume type meters with FlumeGates and the upgrade of three regulating structures on the Main Canal (Prickleys, No. 3 and Morundah regulators).

Project Variations

Throughout the scope of CICL's Rd 2 PIIOP, the following variations were approved:

- Variation 1: Approval on 3 June 2013 to, in effect:
    - reduce the scope of SP6 such that the balancing storage would be reduced from two cells with a combined capacity of 3300ML to a single cell of 600ML

[1] In his advice to CICL, Minister Burke noted that no on-farm works would be funded in PIIOP Round 2 and that OFIEP provided an opportunity to secure funding for the works envisaged in SP 9. The funding offered for SP 6 and 7 was $7,350,000 (GST exempt) in return for 1,727ML of conveyance.

[2] CICL's Round 1 PIIOP contained five sub-projects. Sub projects in later CICL PIIOP projects were numbered consecutively thereafter. However, the Department preferred to refer to the two sub-projects in PIIOP 2 as SP 1 and SP 2. CICL's Final Report makes reference to its consecutive sub- project numbering throughout.

- increase the scope of SP 7 to allow for the upgrade of three Main Canal regulators through the replacement of 19 x undershot gates with 19 x FlumeGates.

- Variation 2: Approval on 13 January 2014 to, in effect:
  - accommodate revised administrative requirements sought by the Department
  - accommodate revised work scheduling and cash flow requirements sought by CICL in light of the major work associated with the upgrade of the Main Canal regulators.

- Variation 3: Approval on 24 November 2014 to, in effect:
  - reduce the number of FlumeGates to be installed in the Main Canal from 19 to 16 in light of advice that the scope of the associated of civil works (earth moving and concrete) needed to be increased[3]

In the final analysis, the Commonwealth provided $7,350,000 (GST exempt) in exchange for 1,727ML of conveyance entitlement.

Major Outcomes

The major outcomes of CICL's Rd 2 PIIOP were:

- the development of a 600ML balancing storage, providing CICL with:
  - improved capacity to manage the sudden cancellation of water orders by Members[4]
  - improved levels of operational efficiency/water savings, as indicated in Attachment 1
  - improved capacity to manage supplementary water when available;
- the replacement of 100 non-flume type meters (e.g. MACE, Tempress and Magflow meters), providing CICL with:
  - improved levels of operational efficiency/water savings, as indicated in Attachment 1
  - a reduced training liability[5]
  - a simplified maintenance liability[6]; and

[3] CICL determined that its flow requirements would not be adversely impacted by the reduction, but the work was completed in a manner that allowed for 3 additional gates to be 'retrofitted' if required.

[4] CICL's Members enjoy access to two hour water ordering – at any stage within that two hours, Members can cancel their orders without detriment if, for instance, local rainfall negates the need for a water order. However when a large number of Members do this in a short period of time, CICL can lose some of the water than was readied for delivery as it has to place its water orders 7 days in advance i.e. it can have more water coming into its system than available capacity permits if demand reduces suddenly. The balancing storage would allow water that might otherwise be 'spilled' to be re-diverted.

[5] The reduced training liability would be because channel technicians would not have to be trained on multiple types of meters.

[6] The maintain liability would be simplified because standardisation of meters would allow for CICL's spare parts inventory and the variety of maintenance checks/procedures to be reduced.

- the removal of 19 undershot gates at three regulating sites along CICL/s Main Canal and their replacement with 16 x large FlumeGates (each with a capacity of 950ML/day), providing CICL with
    - improved capacity to manage the sudden cancellation of water orders by Members
    - improved levels of operational efficiency/water savings, as indicated in Attachment 1.

Photo 2 – Storage under construction (SP 6)

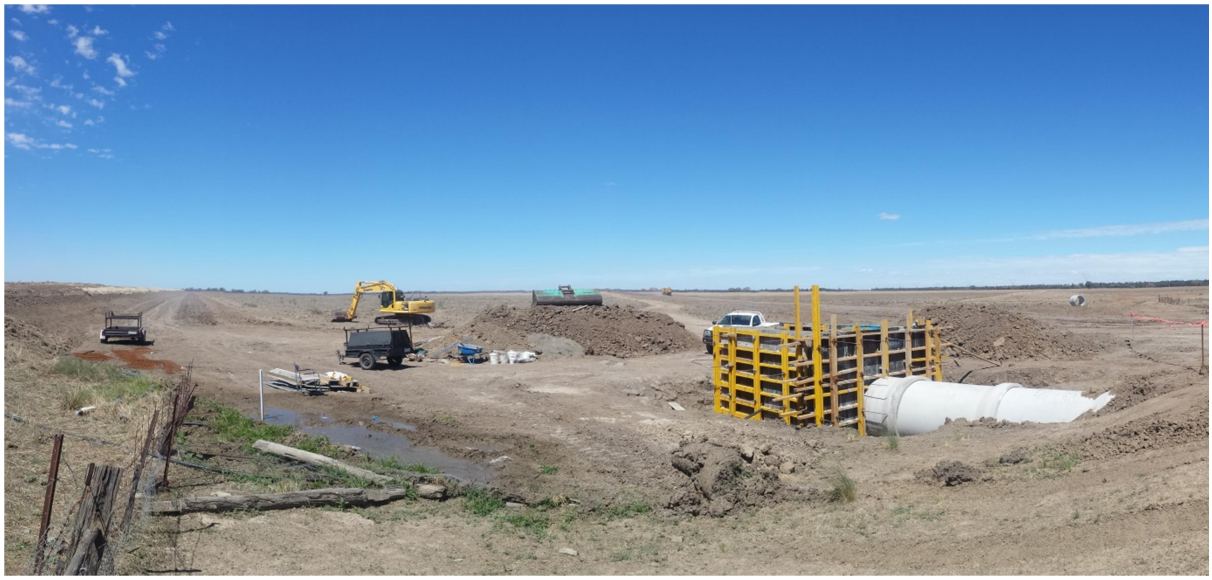


Photo 2 – Partial view of completed storage (SP 6)

Photo 3 – One of three new regulators under construction on CICL's Main Canal (SP 7)

Photo 4 – One of three newly constructed regulators on CICL's Main Canal (SP 7)

Planning Considerations & Risk Management

CICL utilised the expertise of Mr Dan Cootes (a consultant civil engineer) to assist in the original design of the two-cell storage and then to modify its design in the light of the decision not to proceed with the larger of the two cells. The subsequent construction was undertaken by James Excavations.

The design work and construction required to support the upgrade of three Main Canal regulators was undertaken by Rubicon, Retic Water (a Rubicon subsidiary with the role of managing the installation of Rubicon products) and Ertic (a construction company specialising in civil works).

In an early PIIOP briefing to CICL's Board, the CEO identified the following risks associated with CICL's Round 2 PIIOP;

- CICL's modest bid would be competing with what were expected to be very large bids from both MI and MIL, and
- CICL's Members might not support the accelerated replacement of the non flume-type meters.

Subsequent to the decision being taken by the Board to proceed with the PIIOP 2 bid and gaining Member support for that bid, two matters arose that ultimately led to the scaling back of SP 6 and the decision to increase the scale of SP 7; they were:

- a sense of unease by some of CICL's Directors about the relative benefit of a two-cell storage, especially given rapidly-rising electricity costs; and
- an unanticipated 'push' from CICL's Members to extend TCC to the Main Canal.

The Member's 'push' was highly significant given their initial reluctance regarding the introduction of TCC. CICL had contemplated the upgrade of its Main Canal regulators when it was developing its PIIOP 2 bid but opted not to incorporate such an upgrade at that time because three of the existing regulators had a residual life of 5 years and the other three, 15 years. In addition, CICL was operating these regulators in a way which was not impacting on TCC elsewhere throughout CICL's delivery system (albeit with some challenges).

The logic behind CICL's ultimate decision to scale back SP 6 and expand SP7 was:

- the design of the storage could be modified so that a second, larger, cell could be added at a later stage;
- once CICL had had the benefit of operating the single-cell storage over several seasons, it would be better placed to understand the savings that might accrue and the extent of any losses through seepage and evaporation;
- delayed development of the second storage might mean that solar became a more viable alternative to electric or diesel-powered pumping; and
- while CICL could not justify the replacement of regulators that had a residual life of 15 years, it could justify the replacement of those with only five years remaining life and especially so in the face of the Members' clear expression of support for the extension of TCC along the Main Canal.

The decision to proceed with the upgrade of the Main Canal regulators came with major management implications because of the scale of the civil works required; because the large FlumeGates were not stock items and because the work could only been completed within the winter works shutdown period (approximately 12 weeks). Suffice to say, CICL spent some time impressing on Rubicon and its subcontractors that the ramifications of de-commissioning the existing regulators and not completing their replacement within this shutdown period would be significant for CICL and its Members. To Rubicon's and its subcontractors' credit, their planning and work methods were first-rate and the work was completed on schedule.

CICL Organisational Arrangements: The following CICL staff were responsible to Mr Austin Evans (General Manager Operations) for the delivery of SPs 6 and 7 respectively:

- Mr Martin Cisneros (Works Planning Engineer), and
- Mr Daniel Whittred (Manager Operations).

Specific limits of authority for liaison with the Department were established and monthly progress and financial reports were provided to the Board.

Lessons Learned/Re-learned

The organisational arrangements adopted by CICL drew on lessons learned during the roll-out of its PIIOP 1 project. The key lessons learned/reinforced during the planning and delivery of the PIIOP 2 works were:

- **Planning:**
    - CICL has considerable in-house expertise but there is significant value in it having its planning reviewed or augmented by independent specialists.
    - The tighter the planning deadline, the more important it is that CICL works with contractors than are well known to it – the replacement of the Main Canal Regulators was associated with considerable timing risks; had CICL decided to have worked with another supplier and another construction contractor, it would have had to have delayed the work by 12 months.
    - Soils throughout the CIA are highly variable and it took James Excavations, who had not previously worked in the CIA, some time to get used to working with the soils that were available to construct the storage – fortunately this work did not have to be confined to the winter works period.
    - Even when operating below the funding threshold at which the Commonwealth insists projects be delivered by contractors holding Federal safety accreditation, there is benefit in CICL using similarly qualified contractors on major/complex projects it is funding in its own right.

- **Communication**:
    - The contract negotiations leading up to the signing of the Funding Agreement and the subsequent variations were less complicated and less protracted than in the case of CICL's PIIOP 1, reflecting:
        - the reduced scale of CICL's PIIOP 2 ;
        - the lessons learned by CICL, and by the Department, during CICL's PIIOP 1 ; and
        - the mutual confidence developed between CICL and the Department during the course of CICL's PIIOP 1.

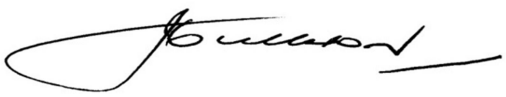
Conclusion

CICL's PIIOP 2 was significantly smaller in scale than its PIIOP 1 and focused solely on enhancing CICL's the efficiency of CICL's delivery system. There was however considerable risk associated with trying to replace three regulators on the Main Canal in the space of a single winter shutdown period, but this risk was very well managed by Rubicon and its subcontractors**.**

CICL wishes to acknowledge the particular contributions made by the following individuals/entities;

- Technical Advisor (SP 6): Mr Dan Cootes,
- Audit Services: Mr Hugh McKenzie McHarg (Johnsons MME), and
- Contractors: James Excavations (SP 6) and Rubicon, Retic Water and Ertic (SP 7).

CICL also wishes to acknowledge the many people that worked within the Department to facilitate PIIOP 2. As in PIIOP 1, the commitment of departmental staff was fundamental to the success of CICL's PIIOP 2.



J. Culleton

CEO CICL

22nd May 2017

Appendices:

1. Operational d Water Losses since Privatisation
2. PIIOP 3 - Final Reconciliation (audited result)

Appendix 1 to

CICL Round 2 PIIOP Final Report

Dated 22nd May 2017

Water Losses since Privatisation (in MLs)

- 99/00 75,800
- 00/01 85,806
- 01/02 99,690
- 02/03 110,312
- 03/04 90,123
- 04/05 108,026
- 05/06 39,784
- 06/07 35,704
- 07/08 30,627
- 08/09 32,046
- 09/10 39,839
- 10/11 32,316
- 11/12 33,081
- 12/13 28,813
- 13/14 25,056
- 14/15 26,975
- 15/16 27,084

CICL draws particular attention to the very significant decrease in its water losses commencing 2005-06 and the tightening of the losses 'band' commencing in 2012-13. The significant decrease in water losses in 2005 was a consequence of CICL's adoption of TCC. The further 'step' decrease, in 2012-13, was a consequence of work undertaken under PIIOP1, especially SPs 1 and 4. The slightly higher losses experienced in 15/16 need to be seen in context of a season in which CICL extended its delivery service for a month longer than is usual and operated its balancing storage for a full irrigation season for the first time.

Appendix 2 to

CICL Round 2 PIIOP Final Report

Dated 22nd May 2017

PIIOP 3 – Final Reconciliation (audited result)

MILESTONE EXPENDITURE REPORT (Audited) Summary table - comparison of budget vs spend			
	As per Budget (Item 4.1 in the Funding Agreement)	**Commonwealth Funds - Total project budget**	**Commonwealth Funds - Total Spend for all Milestones**
1	**Storage**		
	Subtotal of Storage	**$750,000.00**	**$729,353.62**
2	**Meter Replacement**		
	Subtotal Meter Replacement	**$6,050,000.00**	**$6,051,702.40**
3	**Project Management**		
	Subtotal Project Management	**$550,000.00**	**$568,943.98**
	Total	**$7,350,000.00**	**$7,350,000.00**