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Value Creation through Procurement Karapiro WTP Case Study

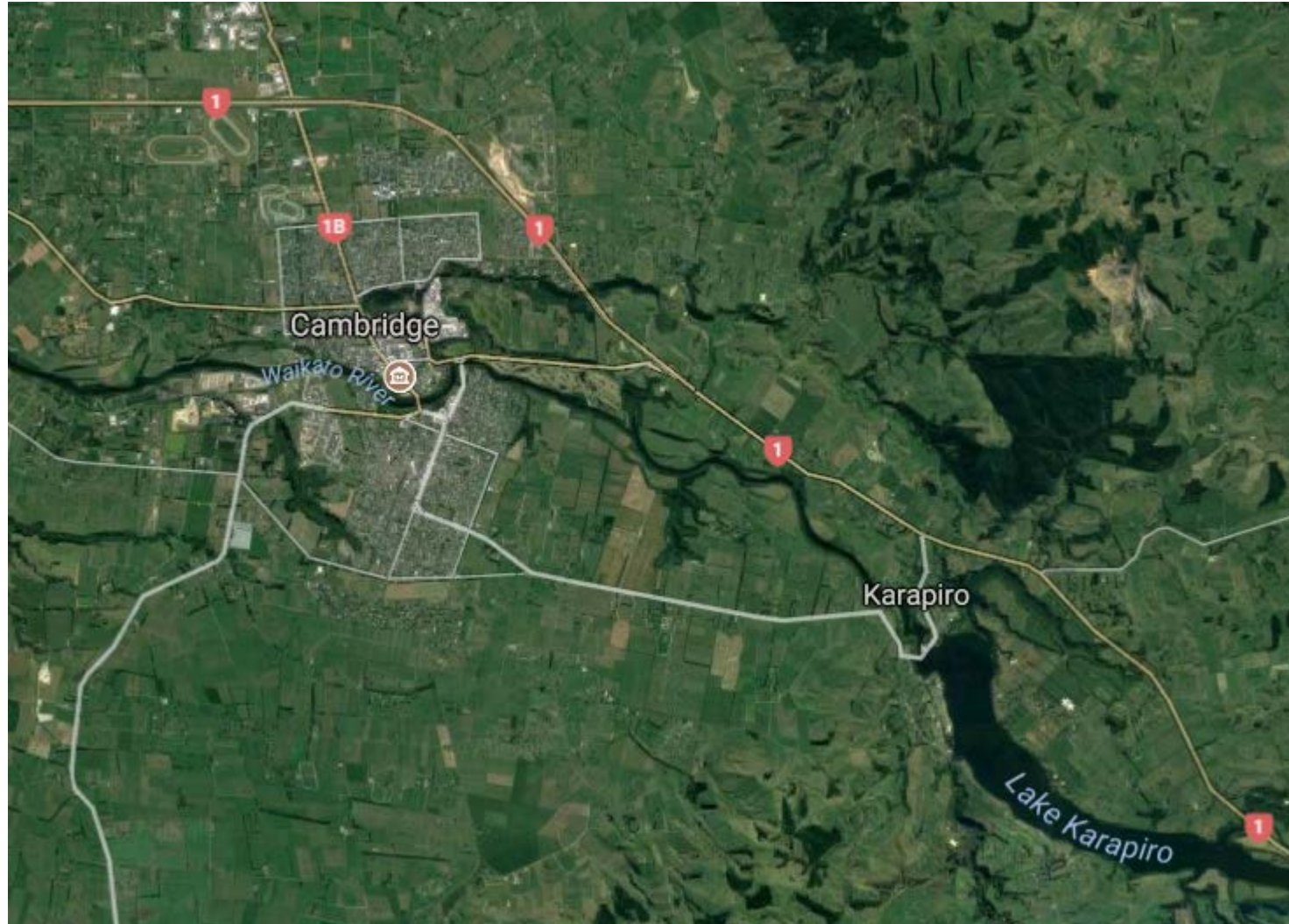
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Presentation Outline

- Project Background and Objectives
- Challenges for Procurement to solve
- Approach Adopted
- Outcomes
- Conclusions

Karapiro WTP



Karapiro WTP



Karapiro WTP

Existing Karapiro WTP

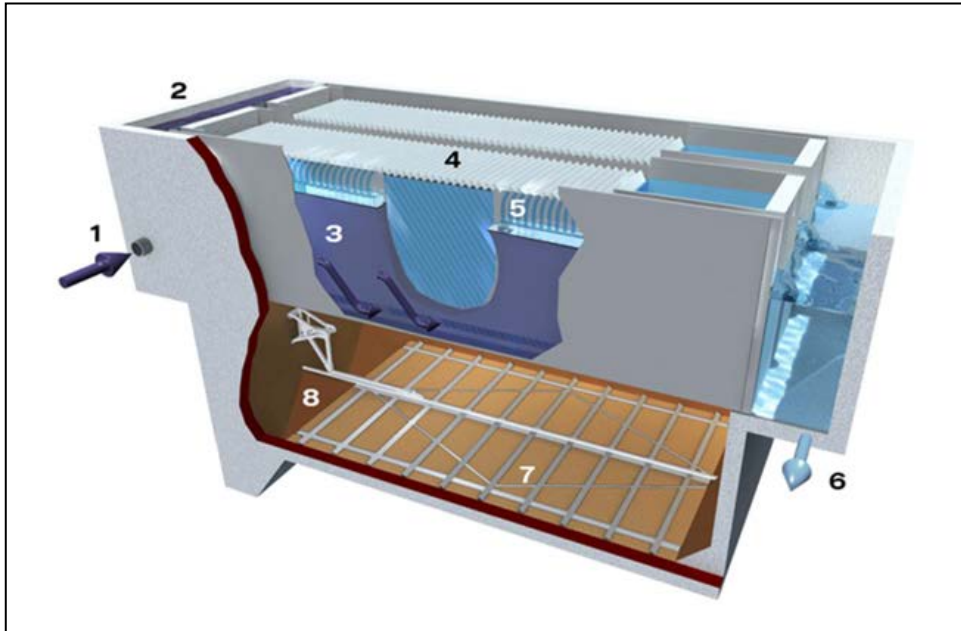
- Built in 1960s
- Nominal Capacity 10.5 MLD
- Paterson Candy Hopper Bottom Sludge Blanket Clarifiers
- Sand Filters
- Chlorination
- Sludge and washwater to sewer

Karapiro WTP Upgrade Objectives

- Increase Capacity by 7 MLD
- Stay within site footprint
- Consistent with existing processes
- Chemical tanks upgrade
- Optimise waste streams

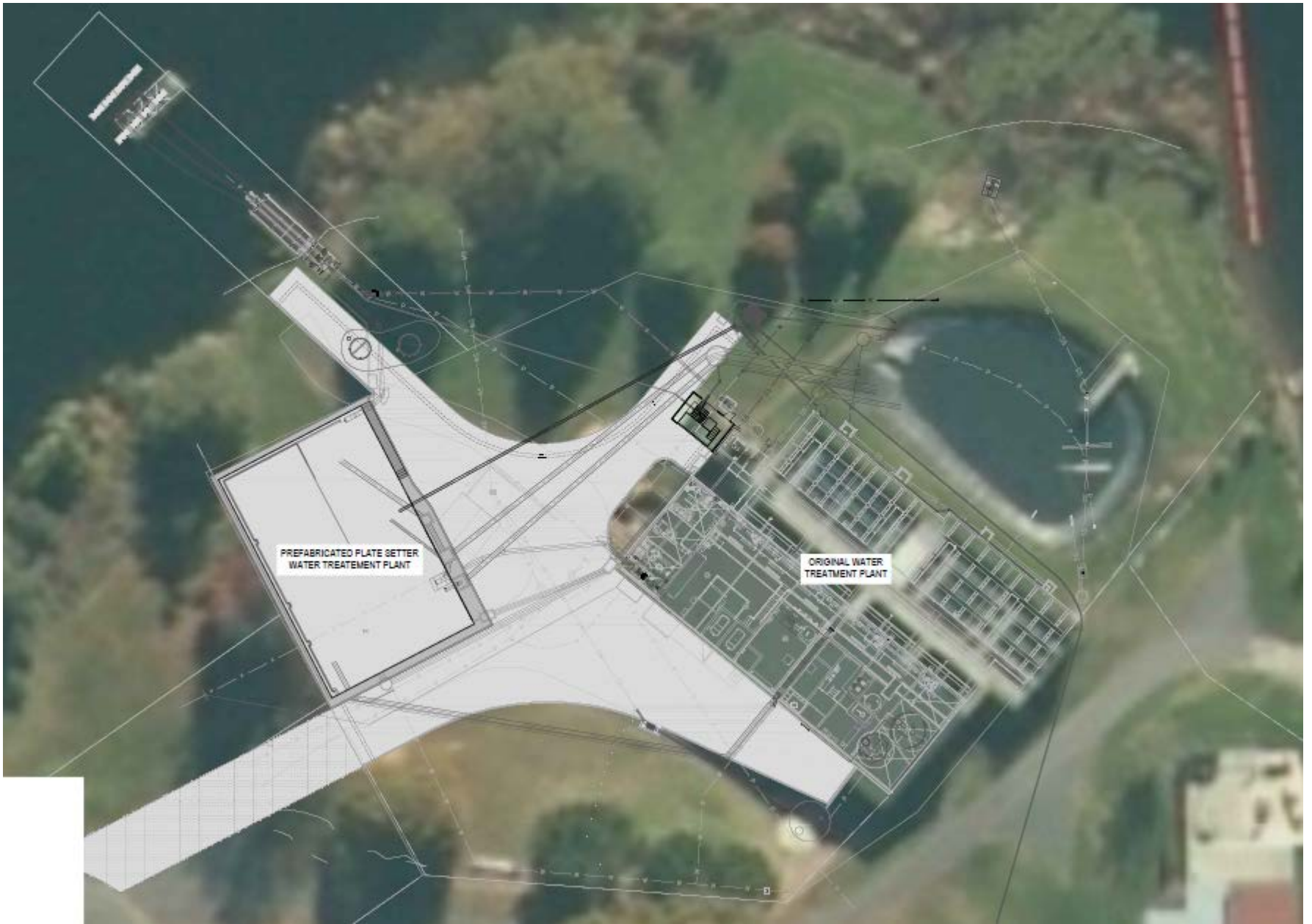
Karapiro WTP Upgrade – Options Evaluation

- Plate Settler/Granular Filter Technology selected after evaluation of options



Karapiro WTP Upgrade – Interactive Design

- Early establishment of Design Steering Group – Council PMs, Operations and GHD
- Scope Development
- Plate Settler/Granular Filter Technology – Prefab (SS) Modular Design selected over in-situ Concrete (faster installation, less site disruption, costs similar)
- Significant enhancements (many identified by the Ops team)
 - Optimised backwash and washwater management
 - Simpler Chemical Tanks solution
 - New PAC system
 - Replacement of raw water pumps and pontoon



Karapiro WTP Upgrade – Procurement Strategy

Design and Build was discounted because of multiple complex interfaces with the existing plant.

Traditional Design then Tender was originally planned. But.....

- Should Council carry out detailed design based on preferred process and risk redesign?
- What if we receive higher than estimated tender price after long design/tender process? (Estimate was at top end of budget)
- Can a single Main Contractor assess the specialist process equipment offerings?
- Can we better control who the Process Supplier AND Main Contractor will be?
- How does Council maintain a long term relationship with a Process Contractor if they are a subcontractor to a Main Contractor?

Karapiro WTP Upgrade – Procurement Strategy

Adopted strategy was to split the work into two contracts:

1. Process Equipment Contract,

- Three Separable Portions:
 - a) Manufacture and Supply,
 - b) Installation and Commissioning (to be novated), and
 - c) Extended Defects Liability and Maintenance

2. Main Contractor (which included novation of Part b) above)

Procurement Strategy Outcomes – Process Contract

- Early visibility of costs (Process contract nearly 40% of overall costs) provided confidence to proceed, with knowledge of balance of works
- Competitive tender pricing provided savings on estimated costs
- Alternative process tenders were received and could be evaluated. Process selection was confirmed based on real market prices.
- The capability of the Process Contractor was a factor in the assessment
- Procurement provided for equipment supply cost (Part a)) to be paid by Council, thus avoiding Main Contractor margin on large cost component
- Allowed the Operations team to influence and become familiar with the details of the process equipment and with the process contractor during the design phase.
- The Defects Liability and maintenance component of the contract was retained by Council to develop a longer term relationship with Process Contractor

The successful Process Contractor was Filtec Ltd.

New Plant

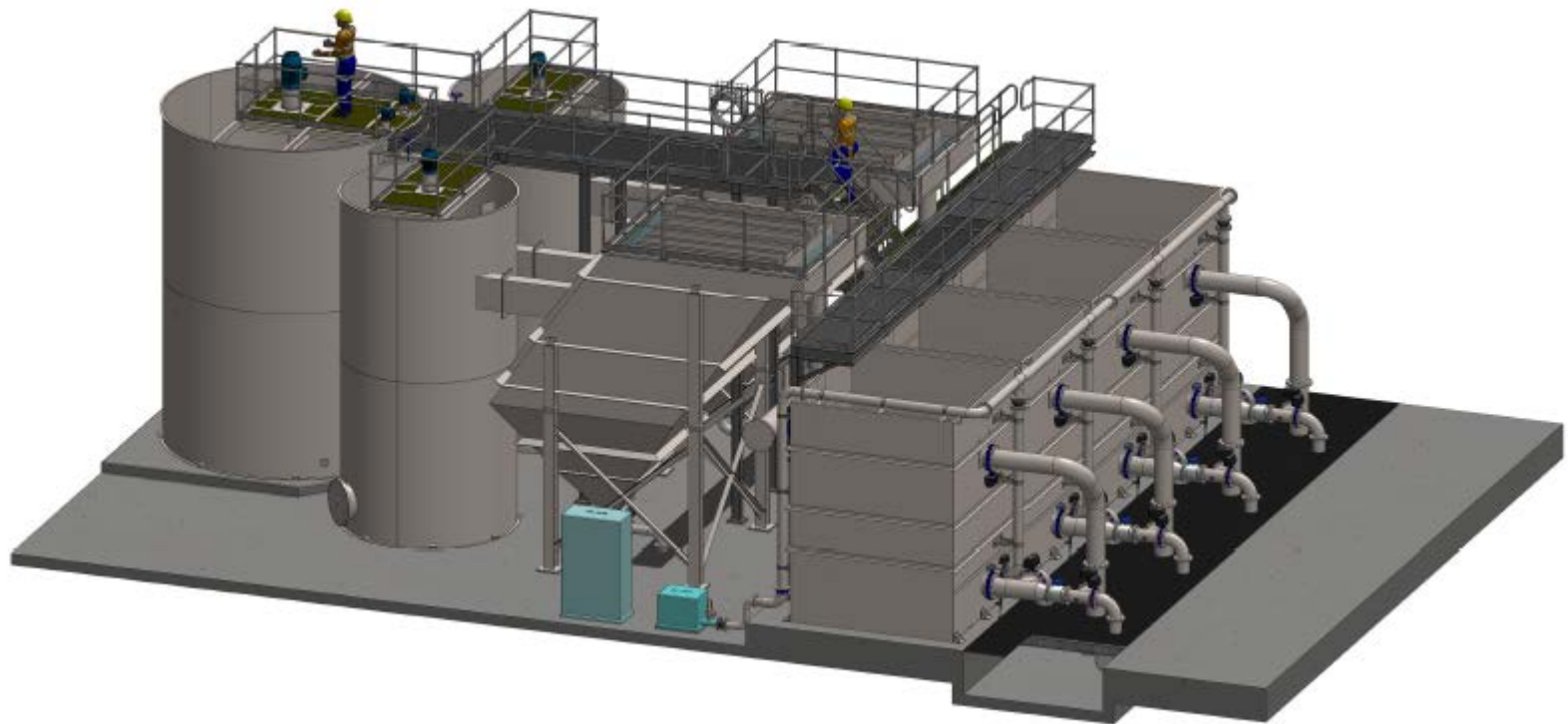


Image Courtesy of Filtec Ltd

Procurement Strategy Outcomes – Main Contract

- Detail Design with Confidence – no redesign
- Reduced margin on Process Equipment supply, as major supply component already paid by Council
- Main Contractor could focus on core non-process areas
- Shorter tender period
- Single Point accountability

The successful Main Contractor was Spartan Constructions from Hamilton.

Outcomes and Conclusions

Outcomes:

- Significant savings achieved through appropriate procurement structure to suit needs of the project
- Positive outcomes from Interactive Design Approach
- Final Project Contract Value of \$5.6M; a \$600,000 saving on Estimated Contract Value
- Increased choice in selection of both Process and Main Contractor

Conclusions:

- Procurement approaches should be custom designed around the unique needs of a Project
- Fully engage with Operations and Council teams from Options stage right through detailed design and commissioning



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