

*Waldo Strydom (Watercare Services Ltd.), Gabrielle Ip (WSP)*

# HIBISCUS COAST PUMP STATION – ACCELERATED DELIVERY REDUCING COST AND CARBON



**water**  
NEW ZEALAND  
CONFERENCE & EXPO  
17-19 OCTOBER 2023  
Tākina, Te Whanganui-a-Tara Wellington

# Presentation

- Acknowledgements
- Project Background
- Delivery Approach (The Plan)
- Project Opportunities and Savings (What we achieved)
- Lessons Learned
- Summary



# Acknowledgement (Team Effort)



Brendon Harkness, Jason Salmon, Benjamin Demmer-Knight



Charley Miles, Peter Wadham, Samir Parbhu



Michael Syred, Dragan Jovanovic, Chris Wium



Dominic Wakeland, Ewan MacVicar



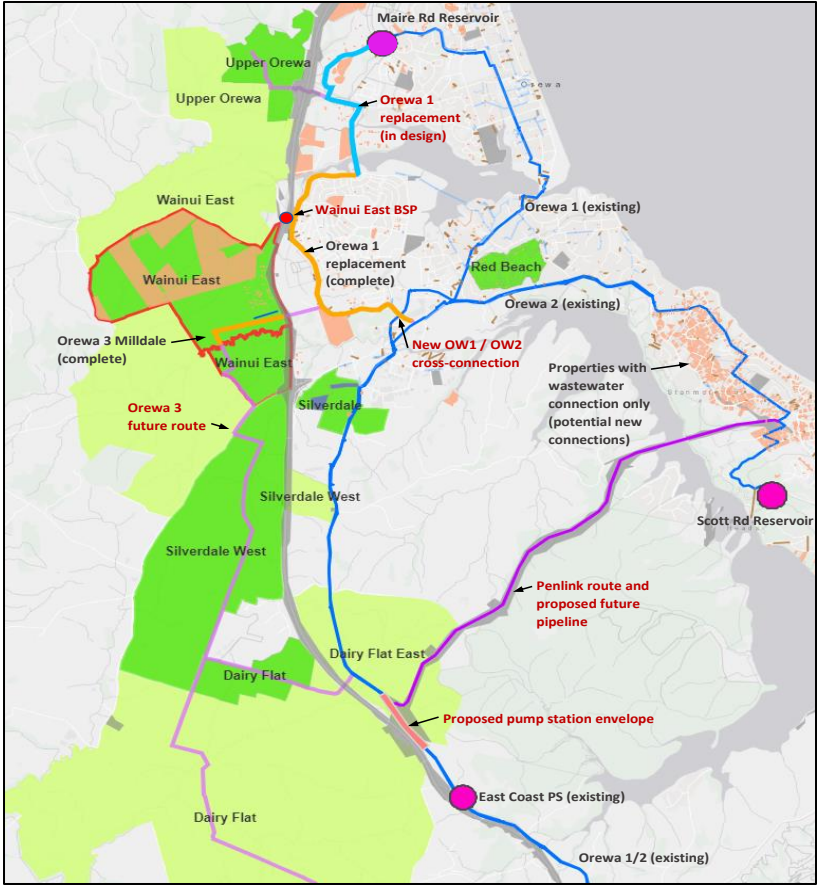
Martin Peyerl and Mark Knowles



# Background



Population circa 60,000 and growing





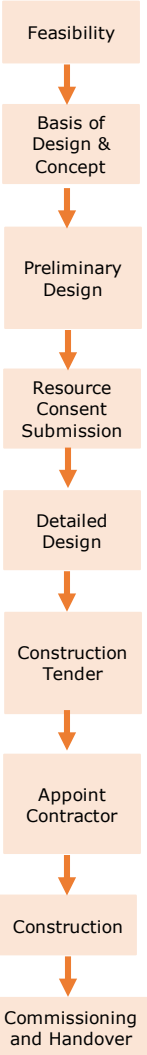
# Limitations and Challenges

- System peak demand was nearing 17MLD capacity
- Limited space in existing facility
- Unsafe site access next to busy road
- Future expansion planned for the road
- Land acquisition delays for alternative site
- Timeframe to meet the summer's peak demand



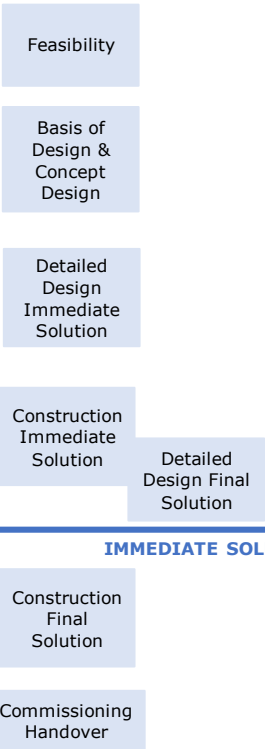
# Delivery Approach

**Conventional Delivery** 30 - 39 MONTHS



PLANNING & 12-18 MONTHS  
 TENDE 3 MONTHS  
 CONSTRUCTION 15-18 MONTHS

**Project Delivery Model** 32 MONTHS



PLANNING 11 MONTHS  
 DETAILED DESIGN 5 MONTHS  
 CONSTRUCTION 18 MONTHS  
 COMMISSIONING 4 MONTHS

IMMEDIATE SOLUTION COMPLETED 19 MONTHS




FINAL SOLUTION COMPLETED



Water supply secured for summer peak




# Delivery Approach

## Immediate Solution

<p><b>Immediate solution</b></p>   	<p><b>Establishment</b></p> <ul style="list-style-type: none"> <li>• Site Clearance</li> <li>• Earthworks and temporary batter</li> <li>• Vehicle access</li> </ul> <p><b>Buried pipework</b></p> <ul style="list-style-type: none"> <li>• Valve Chamber construction</li> <li>• Installation of buried pipework and valves outside building and passing through chambers</li> <li>• Tie-ins to the existing Orewa 1 and 2 pipelines (to be boosted once pump station is commissioned)</li> </ul> <p><b>Critical structural and operational elements</b></p> <ul style="list-style-type: none"> <li>• Slab construction</li> <li>• Aboveground manifold (suction &amp; discharge) pipework passing over slab</li> <li>• Install pump 1 (of 3)</li> <li>• Place containerised switchroom</li> <li>• Install and connect electrical supply (transformer and connections to switchrooms)</li> </ul>
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## Final / Permanent Solution

<p><b>Permanent solution</b></p>  	<p><b>Permanent pump station building</b></p> <ul style="list-style-type: none"> <li>• Pumps 2 &amp; 3 installation</li> <li>• Gantry installation</li> <li>• Pump Station building and building services (acoustics, fire protection, ventilation)</li> <li>• Permanent generator</li> <li>• Landscaping</li> <li>• Commissioning of pump station</li> </ul>
<p><b>Decommissioning</b></p> 	<p><b>Decommissioning of existing East Coast Pump Station</b></p> <p><b>Site structures and drainage</b></p> <ul style="list-style-type: none"> <li>• Retaining wall</li> <li>• Site drainage and permanent driveway</li> </ul>

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# Project Outcomes – What was achieved?

- Programme Reduction (~ 6months)
- Under Budget (5%)
- 27% Carbon Reduction
- Health and Safety Improvements – no serious injuries





# Lessons Learnt - Learnings for Future Projects

- Gap analysis of interfaces between multiple construction parties and suppliers
- Early engagement commissioning team to plan and coordinate multiple construction parties
- Early and proactive stakeholder engagement



# Lessons Learnt - Opportunities

- Reframing the solution to address the immediate need
- Earnestly look for opportunities for programme reductions
- Proactive and responsive technical support during all stages



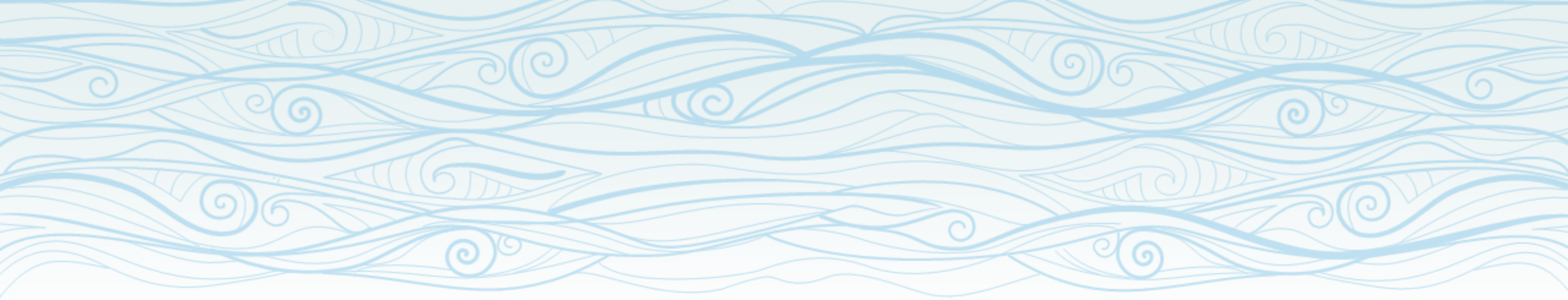


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