

Portfolio Programme	Canterbury Water Management Strategy CWMS Infrastructure
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Project Leads	Brett Painter (Project Leader CWMS Assessments), Dennis Jamieson (Project Leader CWMS Infrastructure)

Regional Water Infrastructure Work Programme RIWG

Water infrastructure is identified in the Canterbury Water Management Strategy (CWMS) as a means to contribute to all CWMS target areas in alignment with principles and priorities. Infrastructure addresses future-proofing issues such as ecosystem support in a changing climate and water quality management through appropriate supply reliability, distribution efficiency and application practices for irrigation. For both urban (3 waters) and rural water infrastructure the focus is moving from supply issues to better management of demand or use – with a focus on reliability and resilience.

While the CWMS is a collaborative process involving all councils across Canterbury, infrastructure development is based on cooperation and coordination, and recognition of the commercial goals of some of the parties involved. This requires discipline in terms of role clarity and funding aligned with apportionment of public (national and regional) and private benefits. Coordination of regulatory and non-regulatory activities (CWMS and ECan Science) has emerged as an important factor in enabling and recognising improvements in infrastructure practices.

This Regional Water Infrastructure Work Programme is usually reported on quarterly basis to the Regional Water Infrastructure Working Group (RIWG) of the CWMS Regional Committee. This committee is undergoing a refresh. During this period, staff have maintained the work programme ensuring that there is a regional oversight of the regional infrastructure work across Canterbury.

Infrastructure options are being considered and progressed with a vision for an integrated water infrastructure across Canterbury that aligns with all the targets of the CWMS and the recommendations in the zone and regional implementation programmes.

Regional Water Infrastructure Work Programme - Annual Summary

To provide updates regarding CWMS infrastructure activities and opportunities.

Node/Zone	Projects	Quarter 1: Update	Quarter 2: Update	Quarter 3: Update	Quarter 4: Update
1. REGIONAL	1) On farm irrigation water use practices	<ul style="list-style-type: none"> Irrigation New Zealand & ECan joint work programme updated. Focus on “demand side” matters and clear regulatory messages from ECan via INZ magazine distributed to all consent holders in Canterbury. Ongoing contact with MPI, INZ and others, 	<ul style="list-style-type: none"> Completion of MBIE funded Irrigation Insight programme and consideration of “next steps” with participant water user group and team (AgR, INZ, NIWA etc.). Outcome desired is uptake of improved water application by all irrigation farmers in Canterbury 	<ul style="list-style-type: none"> Engagement with MPI, research / industry-based groups and INZ to determine path forward; Noted MPI “Water Availability and Security” outputs as similar to pre 2009 work in Canterbury. Initiated approach to seek attention to improving existing irrigation practices (Canterbury, Otago, Hawkes Bay etc.) as well as “new” concepts expected outside Canterbury. 	<ul style="list-style-type: none"> Review of JWP with process initiated alongside other work programme reviews. ECan “Key Relationships” approach expected to be available before Dec 2022 will be a key component. Interaction with various groups proposing concepts for MPI funding under their SLMACC and SFFF programmes,
	2) Fish Screens	<ul style="list-style-type: none"> Three-part approach to improving fish screens across Canterbury continues: 1) INZ led Sustainable Farming Fund (MPI) proposal for information on native fish behaviour and to update design guidelines. 2) ECan CME project 3) CWMS 	<ul style="list-style-type: none"> Fish Screen Working Group meetings. Interaction with RDRML Screen. Attention to rūnanga engagement 	<ul style="list-style-type: none"> Visit to example site with AEC, Fish Screen Working Group meetings. Increased coordination between regulatory (ECan) /non-regulatory CWMS) components 	<ul style="list-style-type: none"> Extensive publicity around RDRML intake completion and commissioning. Opportunities to support rūnanga involvement into Tuia stocktake process.
	3) Braided River Flow regimes	<ul style="list-style-type: none"> Braided rivers flow regimes. Work arrived at a point where it should be held in place while regulatory matters worked through. 	<ul style="list-style-type: none"> Braided rivers flow regimes. Work arrived at a point where it should be held in place while regulatory matters worked through. 	<ul style="list-style-type: none"> Braided rivers flow regimes. Work arrived at a point where it should be held in place while regulatory matters worked through. 	<ul style="list-style-type: none"> Braided rivers flow regimes. Work arrived at a point where it should be held in place while regulatory matters worked through.
	4) Coordination with Regional Programmes and Forums	<ul style="list-style-type: none"> Coordination with other regional programmes with an involvement in water infrastructure is efficient and productive, Examples include Canterbury Engineering Managers Group Canterbury Stormwater Forum. 	<ul style="list-style-type: none"> Canterbury Engineering Managers Group and Canterbury Stormwater Forum etc. participation. Objective to return to action rather than consent detail re-litigation 	<ul style="list-style-type: none"> Canterbury Engineering Managers Group and Canterbury Stormwater Forum participation etc. Use of potential central govt guidance (e.g., via Infracomm) to influence good infrastructure practices. 	<ul style="list-style-type: none"> Coordination focussed on 3 waters within Canterbury. Also maintaining contact with work by other Regional Councils associated with water management where relevant to seeking govt funding for projects of mutual interest.
	5) Managed water diversion and augmentation projects	<ul style="list-style-type: none"> Several concepts are being trialled across Canterbury that involve using water abstracted from one water body and used to supplement another water body. 	<ul style="list-style-type: none"> Several concepts are being trialled across Canterbury that involve using water abstracted from one water body and used to supplement another water body. 	<ul style="list-style-type: none"> Several concepts are being trialled across Canterbury that involve using water abstracted from one water body and used to supplement another water body. 	<ul style="list-style-type: none"> Several concepts are being trialled across Canterbury that involve using water abstracted from one water body and used to supplement another water body.
2. HURUNUI- WAIKOURA	6) Amuri Irrigation Corporation (AIC).	<ul style="list-style-type: none"> Considering additional groundwater nutrient management options including Managed Aquifer Recharge and bioreactors. Plain storage design underway. As with other storages being considered more awareness of 	<ul style="list-style-type: none"> Considering additional groundwater nutrient management options Storage investigations/design 	<ul style="list-style-type: none"> Considering additional groundwater nutrient management options Storage investigations/design 	<ul style="list-style-type: none"> Considering additional groundwater nutrient management options, started bore drilling to enable improved monitoring programme. Storage investigations/design

Node/Zone	Projects	Quarter 1: Update	Quarter 2: Update	Quarter 3: Update	Quarter 4: Update
	7) Emu Plain (EP) 8) Hurunui Water Project (HWP)	need to ensure availability and security of flow in rivers as well as irrigation supply <ul style="list-style-type: none"> Emu Plains Irrigation consent applications to divert, take & discharge withdrawn Absorbed into AIC 	<ul style="list-style-type: none"> Emu Plains Irrigation consent applications to divert, take & discharge withdrawn. 	<ul style="list-style-type: none"> Emu Plains Irrigation consent applications to divert, take & discharge withdrawn. 	<ul style="list-style-type: none"> Irrigation consent applications to divert, take & discharge withdrawn.
3. WAIMAKARIRI	9) Waimakariri Irrigation limited (WIL)	<ul style="list-style-type: none"> Waimakariri Irrigation Ltd: Wrights Road storage Consented. Adoption of irrigation scheduling technology on a scheme basis 	<ul style="list-style-type: none"> Env. Court Wrights Road storage shareholder process 	Env. Court Wrights Road storage shareholder process	Env. Court Wrights Road storage shareholder process
4. SELWYN-WAIHORA	10) Central Plains Water (CPW) 11) Targeted Stream Augmentation (TSA) 12) Near River Recharge (NRR) 13) Electric Fish Barrier	<ul style="list-style-type: none"> Normal scheme operation Broadacres TSA In operation Selwyn/Waikirikiriri Near River Recharge project in operation Haldon Springs Electric Fish Barrier: Project Final site works, and certification completed. 	<ul style="list-style-type: none"> Normal scheme operation Normal scheme operation Normal scheme operation 	<ul style="list-style-type: none"> Normal scheme operation Normal scheme operation Normal scheme operation 	<ul style="list-style-type: none"> Normal scheme operation Normal scheme operation Normal scheme operation
5. ASHBURTON ZONE	14) Ashburton Hinds Managed Aquifer Recharge (MAR) 15) Rangitata Diversion Race (RDR) Klondyke Storage 16) Barrhill Chertsey Irrigation (BCI)	<ul style="list-style-type: none"> Hinds Managed Aquifer Recharge (MAR) project: <ul style="list-style-type: none"> Hekeao Hinds Water Enhancement Trust (HHWET) continuing. PGF funding of \$950,0000 to trust for feasibility and pilot work RDRML high flow take appeal process resolved Intake/fish exclusion design underway BCI focus on intake improvement. Options for intake improvement being considered 	<ul style="list-style-type: none"> Hinds Managed Aquifer Recharge (MAR) project: <ul style="list-style-type: none"> Hekeao Hinds Water Enhancement Trust (HHWET) continuing. Intake/fish exclusion design continues. Engagement with Fish Screen Working Group New fish screen intake in construction. BCI focus on intake improvement 	<ul style="list-style-type: none"> Hinds Managed Aquifer Recharge (MAR) project: <ul style="list-style-type: none"> Hekeao Hinds Water Enhancement Trust (HHWET) continuing. New fish screen intake in construction BCI focus on intake improvement. 	<ul style="list-style-type: none"> Hinds Managed Aquifer Recharge (MAR) project: <ul style="list-style-type: none"> Hekeao Hinds Water Enhancement Trust (HHWET) continuing. New fish screen intake opened! BCI focus on intake improvement.
6. SOUTH CANTERBURY	17) Hunter Downs Water (HDI) 18) Kurow-Dunroon Irrigation Scheme 19) Rangitata South Irrigation Scheme (RSIS) 20) Opuha Water Ltd	<ul style="list-style-type: none"> Hunter Downs Irrigation in abeyance. Kurow-Dunroon Irrigation scheme above ground pipe fix Rangitata South Irrigation Scheme (RSIS) now owned by scheme shareholders. Dam level management (target below 90% full) and condition monitoring continue in response to anomaly detected in Nov. 2018 	<ul style="list-style-type: none"> Hunter Downs Irrigation in abeyance. Kurow-Dunroon Irrigation pipeline fix continues Continuous improvement process for canals and operational systems. High inflow event in December handled without drama, although sub-schemes closed to protect river intakes. 	<ul style="list-style-type: none"> Hunter Downs Irrigation in abeyance. Kurow-Dunroon Irrigation fix complete Rangitata South Irrigation Scheme (RSIS) high flow recovery. Participating via ECan in response Normal operation including dam condition monitoring and expert advice. Visit with VAEC to assess [possible example site for fish screen knowledge gaps project (INZ led) 	<ul style="list-style-type: none"> Hunter Downs Irrigation in abeyance. Kurow-Dunroon Irrigation scheme placed in liquidation by CIIL after \$12.8 extra costs awarded to contractor Rangitata South Irrigation Scheme (RSIS) high flow recovery continues. Normal operation including dam condition monitoring and expert advice.

Regional Water Infrastructure – vision for integration

