

AGENDA ITEM NO: 10	SUBJECT MATTER: REGIONAL INFRASTRUCTURE
REPORT: Regional Water Management Committee	DATE OF MEETING: 7 th February 2012
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PURPOSE

The purpose of this agenda item is to update the full Committee on progress made since the last Regional Committee meeting, and to provide an update on further developments by the working group to obtain final sign off on the draft RIP content for engagement/consultation.

ATTACHMENTS – Electronically supplied

- Working group update
- Draft content for the RIP on Regional Infrastructure (to be electronically circulated)

REGIONAL PRIORITY ISSUE - REGIONAL INFRASTRUCTURE

Background

The CWMS (2009) recognised the potential benefits and constraints that new water supply and distribution infrastructure could have as part of an integrated regional approach to water management. The strategy identified (in its Annex J) an initial seven strategic infrastructure options for further investigation and detailed environmental, economic, social and cultural assessment.

In 2010, Environment Canterbury commissioned preliminary strategic assessments of six of these options (omitting 'Use of Lake Coleridge for storage'), supported by funding from Canterbury Regional Economic Development Strategy (CREDS) and MAF (CIF grant 10/06). In addition TrustPower commissioned a strategic assessment of the Lake Coleridge proposal and an independent peer review of this was commissioned by Environment Canterbury. A synthesised Kaitiaki strategic assessment of all seven options was carried out in addition to option-specific assessments.

Regional and Zone Committee responses to the preliminary strategic assessments and the development of Zone Implementation Programmes have provided further direction to infrastructure investigations. Progress to date with the infrastructure options identified in the 2009 document is as follows:

- Integrated option for Hurunui-Waiiau

Following preliminary strategic assessment and subsequent targeted assessments the Hurunui-Waiiau Zone Committee supported further investigations of a Waiiau River option that included storage at Isolated Hill, and of the Waitohi River catchment as a potential storage site for Hurunui River water. Three Waitohi options were considered by an independent panel in the second half of 2011, with the panel's report released in January 2012. Consents were lodged for the Waiiau option and one of the Waitohi options in October 2011 following the lifting of the Waiiau and Hurunui consent moratoria. These consents are subject to a six month stand-down period as part of the moratoria processes.

- Lees Valley storage

Pre-feasibility studies indicated a high capital cost and significant effects on the main stem of the Ashley River from a large storage reservoir. Varying the configuration of the physical works for a large reservoir provides an opportunity to reduce costs, but may not significantly reduce cultural and environmental effects. Alternative combinations of options in the Waimakariri and Selwyn-Waihora Zones are therefore under investigation.

- Groundwater storage in the Central Plains

Preliminary strategic assessment of Managed Aquifer Recharge (MAR) concluded that Canterbury aquifers were unlikely to provide direct alternatives to above-ground storage, but could provide other benefits if considered as part of distribution infrastructure design. Aquifer recharge analysis was undertaken and a practical experiment was commissioned in early 2012 to assist with considering potential MAR opportunities in mid-Canterbury.

- Lake Coleridge / Whakamatau

TrustPower have completed technical reports, strategic assessment and peer review for an option that includes a new canal, siphon and hydro generation infrastructure. They have submitted an application to change the Rakaia River Water Conservation

Order (WCO) which is being heard in the first half of 2012. Key components of this application are:

- Define “stored water” and exempt its use from certain provisions of the WCO;
 - Identify a mechanism for existing consent holders to utilise “stored water”;
 - Provide for future infrastructure and discharge consents.
- Efficiency improvements and re-allocation in Mid Canterbury

This study focussed on the potential of distribution efficiency improvements and the potential benefits of re-allocating surface and groundwater supply. The study also recognised that water quality challenges and opportunities need to be integrated into water infrastructure design. This work will inform the design of infrastructure upgrades, new potential distribution infrastructure, and potential new water storage options.

- Water from Lake Tekapo to South Canterbury and extension of Hunter Downs to the North (two potential options in CWMS Annex J)

Preliminary strategic assessment of six development options for supplying south Canterbury from Lake Tekapo or an extended Hunter Downs scheme raised significant cultural, environmental and recreational concerns. “Doing nothing” was also assessed negatively against cultural and environmental targets. The alternative option of moving Rangitata River water south was raised during the assessment process and recommended for further investigation. These investigations are currently underway.

Links to the CWMS targets

The CWMS identifies infrastructure as a means to contribute to all the target areas of the CWMS, not just the supply of water for irrigation and hydro-electricity.

Specific targets for 2015 are:

- A system of regionally distributed rural water infrastructure for the storage and distribution of water that provides reliable water to all irrigated land has been designed, timetabled, costed and staged. The system has been demonstrated to align with the principles and targets of this strategy
- Decided mechanisms for funding infrastructure and the ongoing operation of the strategy
- Started on infrastructure (or reconfiguration of existing consents) that facilitates efficiency improvements and is linked into the regional storage plan
- Specified, for each zone, their infrastructure requirements consistent with the regional storage plan, and the principles and targets of the strategy
- Increased the area of irrigated land and/or reliability of irrigation.
- Started projects to generate electricity from existing irrigation infrastructure.

Regional Committee Role

The Regional Committee will take a leadership role in identifying the most desirable integrated regional approach to water supply and distribution infrastructure, in the context of delivering the cultural, social, environmental, and economic priorities, principles, and targets of the CWMS. In addition, for any infrastructure to proceed, it must be “bankable” to investors.

The Regional Committee believes that in order for the potential benefits of an integrated regional approach to supply and distribution infrastructure to be realised across Canterbury, individual infrastructure components must also deliver against CWMS priorities at a local zone level. The Regional Committee’s role will thus differ depending on whether the potential for infrastructure to address the water supply and demand requirements of an individual zone can be achieved by within-zone options, or whether cross-boundary solutions are required. Where

a within-zone approach is recommended, the Regional Committee will identify features that also need to be considered from a regional perspective (e.g. migratory bird habitats) in the development of infrastructure options.

The Regional Committee will focus on the links and nodes of water supply and distribution across and between zones where connected infrastructure is required to help achieve the CWMS targets. In order for the Regional Committee to consider the degree to which individual infrastructure components could help achieve the CWMS targets in an integrated way at a regional level, it identified the need for an analysis tool to be developed. Progress to date is as follows:

- Regional Distribution and Efficiency Project

A Regional Distribution Model (RDM) is under development with funding from MAF (CIF grant 11/02). This model will enable an analysis of combinations of storage and distribution infrastructure as an input to assessments of their effectiveness in meeting CWMS targets.

In developing a “big picture” for a regionally integrated approach to supply and distribution infrastructure, the Regional Committee will:

- Plan on the basis that infrastructure options in the Hurunui-Waiapu Zone are a non-connected* part of the integrated regional approach
 - Identify the need for additional storage in potentially inter-connected zones i.e. Waimakariri, Selwyn-Waihora, Ashburton, OOP
 - Address the need for more water in the Orari-Opihi-Pareora (OOP) Zone by investigating connections northwards to mid/central Canterbury
 - Consider any infrastructure options in the Waitaki catchment as a non-connected* part of the integrated regional approach
 - Identify the potential role of existing supply and distribution infrastructure assets to inter-connect zones
 - Evaluate the potential ability of an integrated approach in inter-connected zones to
 - enhance environmental flows in rivers,
 - and increase irrigated land area,
 - and increase reliability of water supply,
 - and support implementation of priority outcomes on Kaitiakitanga, Ecosystem Health and Biodiversity, and Land Use and Water Quality
 - and support Zone Implementation Programmes
- * Use of “non-connected” above relates only to cross-zone-boundary transfers of water. In-zone supplies do potentially affect other zones, e.g. when they avoid the need for water supply from another zone.

This can be represented schematically as follows:

[insert schematic drawing]

Complementary to these initiatives is the ongoing role of monitoring the quality and quantity of surface and groundwater, and continuing to improve understanding of water flows, interconnections and the effects of abstraction. These are important precursors to developing water infrastructure.

Priority Outcomes and Recommendations

Priority Outcomes	Recommendations	Who * denotes suggested lead body	When
A "big picture" for regional infrastructure is developed that is consistent with the Priorities, Principles, and Targets of the CWMS.	Develop a tool that allows assessment of an integrated supply and distribution network	Environment Canterbury	Feb 2012
	Develop an initial "big picture" for regional infrastructure that is a "best fit" for delivering CWMS Zone Priority Outcomes.	Regional Committee	April 2012
	Regional regulatory frameworks prioritise and facilitate infrastructure development that is in line with the "big picture" for regional infrastructure	Environment Canterbury	June 2012
	District Plans prioritise and facilitate infrastructure development that is in line with the "big picture" for regional infrastructure	TAs	Ongoing
	Commission or support the commissioning of an economic benefit:cost study of the most promising Lees Valley/Ashley River water supply options.	MAF, Environment Canterbury, TAs	ASAP
	Commission or support the commissioning of an economic benefit:cost study of the most promising Waitohi River water supply options	MAF, Environment Canterbury, TAs	ASAP
	Commission or support the commissioning of an economic benefit:cost study of the most promising water supply options south of the Rakaia	MAF, Environment Canterbury, TAs	ASAP
	Commission or support the commissioning of an economic benefit:cost study of the most promising water supply options in mid-Canterbury	MAF, Environment Canterbury, TAs	ASAP
Kaitiakitanga is integral to the regional infrastructure big picture	Tangata Whenua are given an opportunity to be involved in infrastructure governance, funding, and ownership	Tangata Whenua/ Developers	Ongoing
	Mixing of waters on individual components is addressed as a prerequisite	Developers	Ongoing
Regional infrastructure is "bankable" and "affordable"	Facilitate funding for the ecosystem and recreation aspects of major water supply infrastructure projects alongside water user [e.g. irrigation, hydropower] funding.	MAF/ MfE	ASAP

	Commission a study of how the capital costs of regional infrastructure component projects can be made affordable to irrigators across Canterbury	MAF/MfE	ASAP
	Facilitate the development of entities to develop individual components of regional infrastructure	Environment Canterbury/TAs/MfE	Ongoing
	Existing supply and storage infrastructure is integrated in to the regional "big picture"	RDR, TrustPower	Ongoing
Individual regional infrastructure components deliver CWMS Priority Outcomes at a Zone level	Encourage developers to engage with Zone Committees at an early stage in the development of project proposals to align with delivering CWMS priority outcomes	Environment Canterbury /Developers	ASAP
	Facilitate multi-party co-operation on appraisal of water supply reservoir feasibility in the Selwyn-Waihora Zone.	Environment Canterbury	ASAP
	Encourage developers to engage with landowners at an early stage as part of a dialogue with Zone Committees	Environment Canterbury /Developers	ASAP
Individual water supply and distribution projects do not foreclose opportunities to deliver integrated regional infrastructure	Developers engage with Regional Committee at an early stage in the development of project proposal	Developers	ASAP
	Central government funding prioritises supply and distribution projects in Canterbury that are part of a regional infrastructure big picture.	MAF/MfE	ASAP
Biodiversity and ecosystems needs are built in to the regional infrastructure big picture	Regional infrastructure provides for relevant environmental flows	Developers	Ongoing
	Environmental enhancement funds are developed that improve trends in ecosystem health and biodiversity	Developers	Ongoing
The regional "big picture" is based on the best available information	Agencies holding water quality information for any zone cooperate to make it available to each other, and to consider if it can be made publicly available	Environment Canterbury/ NIWA/ESR/ drilling companies/MoH, GNS/TAs	ASAP

Forward work programme

The Regional Committee will continue to develop an integrated approach to regional infrastructure in 2012 and will undertake a process of consultation and engagement as part of an update to the RIP in due course.

