

## Land Area and Reliability

The CWMS sets an indicative outcome for 2040 of at least 95% reliability of water supply. Increasing irrigated area and reliability requires progress to be made in water management at farm and scheme levels. This includes developing cooperative arrangements between the various water management interests, adopting improved management systems, improving the operation of existing infrastructure and the development and reliability capacity (storage) within these systems. Methods being used include the piping of formerly leaky unlined earth canals and the use of small and medium scale storage as well as improved methods for operating existing large scale storages. Efficient on farm water use results in water storage being able to supply reliability to larger irrigated areas. More land benefitting from irrigation, both directly and indirectly through mixed irrigation and dryland farming systems, builds resilience into the local economy making it less susceptible to both long-term climate change and short term dry spells, while widening the range of land use options.

### Targets

#### From 2010:

No reduction in irrigated land area in Canterbury or in overall reliability within each zone.

#### By 2015:

Increased the area of irrigated land and/or reliability of irrigation.

#### By 2020:

Improved reliability of supply for at least 50% of irrigated land.

#### By 2040:

A substantial increase in the reliability of supply and the area of land irrigated in Canterbury all of which has demonstrated high standards of riparian, nutrient and water use management, and has been shown to be consistent with the principles of the strategy. An indicative target is 850,000 hectares of irrigated land with at least 95% reliability. Improved reliability of supply for all irrigated land.

### Progress to 2020

	Not started	Started	Progress	Good progress	Achieving
<ul style="list-style-type: none"> <li>There has been significant movement in on-farm application systems, away from inefficient surface irrigation (border dyke) to more efficient spray irrigation systems.</li> <li>Over the five years, from mid-2010 to 2015, the amount of efficient spray irrigation went from 371,000ha to 479,000ha, an increase of 29%. Total irrigation went from 425,000ha to 507,000ha. Over the same period there was a 48% reduction in the amount of surface (border dyke) irrigation from 54,000ha to 28,000ha.</li> <li>Highly efficient irrigation systems such as pivots and laterals, with potential efficiency of 80-90%, are now by far the principal irrigation system used in Canterbury. Medium efficiency irrigation systems, such as roto-rainers and K-line systems, with potential efficiency of 50-85% make up much of the remainder, with only around 5% surface water irrigation.</li> </ul>					
<ul style="list-style-type: none"> <li>Across Canterbury, reliability improvements are being achieved through development of both storage and piping of new and existing schemes. Examples include;                             <ol style="list-style-type: none"> <li>Operation of Lake Coleridge by Trustpower to store water on behalf of multiple irrigation entities including Central Plains Water (CPWL) and Barrhill Chertsey Irrigation (BCI).</li> <li>Significant development of on farm storage.</li> <li>In-scheme storages built (Mayfield Hinds 6.0Mm<sup>3</sup>, Rangitata South 16.5Mm<sup>3</sup>), in construction stage (Sheffield (CPWL) 2.1Mm<sup>3</sup>, Akarana (BCIL) 1.6Mm<sup>3</sup>) and under investigation (WIL 8.2Mm<sup>3</sup>, RDRML up to 53Mm<sup>3</sup>, Hurunui Water Projects 25Mm<sup>3</sup>).</li> </ol> </li> <li>On farm storage enables active farm management to efficiently use a limited volume of water. On-farm storage ponds in Canterbury are estimated to have a combined capacity of some 39Mm<sup>3</sup>. This is a very significant volume as it adds to the overall capacity and reliability of water supply.</li> </ul>					

Fig 16: Irrigated Land Area Reliability Improvements

**Irrigation Scheme Storage**

1. Hurunui Water Project (potential)
2. Waimakariri Irrigation Ltd. (potential)
3. Lake Coleridge
4. Central Plains Water Ltd.
5. Barrhill Chertsey Irrigation Ltd.
6. Rangitata Diversion Race Management Ltd. (potential)
7. Valetta and Mayfield Hinds Irrigation Ltd.
8. Rangitata South
9. Opuha Water Ltd.

**Piped Distribution**

- a. Amuri Irrigation Ltd.
- b. Central Plains Water Ltd.
- c. Barrhill Chertsey Irrigation Ltd. (stage 2)
- d. Ashburton Lyndhurst Irrigation Ltd. (stage 2)
- e. Valetta Irrigation Ltd.
- f. Waihao Downs

**On-farm Storage**

Zone	Area
Kaikōura	0Mm <sup>3</sup>
Hurunui Waiau	2Mm <sup>3</sup>
Waimakariri	7Mm <sup>3</sup>
Christchurch – West Melton	0Mm <sup>3</sup>
Banks Peninsula	0Mm <sup>3</sup>
Selwyn Waihora	2Mm <sup>3</sup>
Ashburton	20Mm <sup>3</sup>
Orari-Temuka-Opihi-Pareora	5Mm <sup>3</sup>
Lower Waitaki	2Mm <sup>3</sup>
Upper Waitaki	1Mm <sup>3</sup>

Table 2: Estimated On-farm Storage by Zone

