

3. Water Availability - Climate Change

Purpose

To provide information on risks to water availability resulting from climate change.

Background

Climate change is predicted to progressively reduce water availability and reliability across northern Victoria this century. Impacts are already being detected as cool season rainfall totals decrease and warm season rainfall totals increase, causing changes to system operations and disrupting traditional growing patterns.

The Victorian Government, through the Department of Environment, Land, Water and Planning, is finalising revised guidelines for water corporations to assess the impact of climate change on water supply. GMW is required to use the guidelines in its future planning.

The draft *Guidelines for Assessing the Impact of Climate Change on Water Supplies* discusses the impacts that northern Victoria can expect under climate change.

The medium and high climate change scenarios project a decline in runoff in all northern Victorian river basins, with greater impact in the western basins. Such reductions directly impact the reliability of the supply systems in these basins.

Other impacts of reduced water availability and reliability include less groundwater recharge and decreased reliability; potential for water quality degradation through higher water temperatures, greater turbidity and reduced dissolved oxygen; and loss of public amenity for recreational use.

The draft Guidelines are predicated on the retention of the existing entitlement framework and water supply practices. As climate change impacts more deeply with time, consideration will need to be given by water users, water agencies and governments to whether water entitlements and management practices need to evolve to adapt to climate change.

The effects of climate change extend beyond water availability and reliability. Other changes that are expected include:

- Warmer mean, maximum and minimum daily temperatures
- Greater frequency of hot days
- Longer duration of warm weather
- Fewer frost days
- Increased intensity of heavy rainfall events
- Increased periods of drought
- Greater frequency of extreme drought

The combined effects of these changes may render parts of northern Victoria unsuitable for existing agricultural industries even without reduced water availability and reliability.

Climate change also provides an opportunity for GMW and its customers to develop new products and industries better suited to the new regime.



OUR FUTURE

OUR STRATEGIC PLAN

Briefing Paper

Summary

Climate change is expected to reduce water availability and reliability for irrigation by changing the timing, frequency and volume of rainfalls and inflows. While this alone represents a significant challenge for GMW and customers, the effect of the changing climate on agricultural production must also be considered.

For more information:

<http://www.depi.vic.gov.au/water/governing-water-resources/water-corporations/water-supply-demand-strategy>
<http://www.cawcr.gov.au/projects/vicci/>