

# LTADEL compliance assessment for Upper Namoi and Lower Namoi Regulated River Water Sources

## Executive summary

This report describes the methods used to assess if extractions in the Namoi Regulated River are compliant with the limit described in the water sharing plan. The assessment has found that long term average annual extractions are compliant for the 2020-21 water year.

## Background and purpose

The water sharing plan for the Upper Namoi and Lower Namoi Regulated River Water Sources (hereafter Namoi Regulated River Water Source) requires an assessment of compliance with a Long-term Average Annual Extraction Limit (LTADEL), which is sometimes referred to as 'plan limit'.

The assessment is to be carried out annually by the Department of Planning and Environment - Water (DPE Water), following the end of each water year. LTADEL compliance requires two models: one to represent the LTADEL and one to represent current conditions. The long-term results from both models are compared to assess compliance. Each water sharing plan defines the LTADEL, how the compliance assessment is to be completed, triggers for non-compliance and subsequent compliance action. The LTADEL includes multiple types of water use. However, the compliance assessment is based on the total.

This report summarises a compliance assessment for the Namoi Regulated River Water Source. The assessment was based on best available models, using climate data from 1895 to 2021.

## Scenarios and agreed model version

Model scenarios for Cap, water sharing plan and current conditions were selected based on evaluation against multiple [scenario model selection criteria](#), including whether these had been documented and independently reviewed, how appropriate the management and levels of development are, and consistency of the hydrology. For the Namoi Regulated River Water Source, the selected scenario models reported in Table 1 are the most appropriate for LTADEL compliance.

The Cap scenario model is based on the accredited scenario model used for Cap compliance assessment, whereas the water sharing plan conditions scenario model is derived directly from that and is consistent with that used in the water sharing plan to set the LTADEL. The annual permitted take scenario model submitted for the water resource plan is used as our current condition scenario model.

Table 1. Scenario models selected for Namoi Regulated River Water Source for LTADEL assessment purposes

Scenario model	System file
Cap conditions	NamoB194.sqq
Water Sharing Plan conditions	NamoB515.sqq
Current conditions	NamoS021.sqq

These scenario models are the best currently available. Floodplain harvesting is simulated in these scenario models, however; these estimates are not suitable for LTAEL assessment. Consistent with the approach proposed for our annual permitted take compliance assessment, a fixed estimate of floodplain harvesting as reported by MDBA is used. An upgraded Source model is at an advanced state, and when complete, will provide a better estimate for LTAEL assessment in future years.

## LTAEL compliance results

### LTAEL assessment

The LTAEL is the modelled long-term average annual extractions calculated over the duration of the available climate record using either the Cap or the water sharing plan scenario model, whichever is the lesser. For this assessment the modelling period 1895-2021 is used. The results of this analysis are reported in Table 2. The LTAEL for 2020/21 water year for Namoi Regulated River Water Source is 225.6 gigalitres per year (GL/y), based on the water sharing plan scenario model. Unmodelled extractions are not considered for this assessment.

Table 2. Modelled and unmodelled long term average annual extractions (1895-2021) for Cap and water sharing plan model scenarios (GL/y)

Extraction category	Cap scenario model	WSP Scenario model
<b>Modelled extractions</b>		
General security	160.0	181.2
Supplementary access	87.2	43.0
High security and Stock and Domestic	1.4	1.4
<b>Total modelled extractions</b>	<b>248.6</b>	<b>225.6</b>
<b>Unmodelled extractions estimates</b>		
Floodplain harvesting	14.0	14.0
Stock and Domestic	1.9	1.9
<b>Total extractions</b>	<b>264.5</b>	<b>241.5</b>

This water sharing plan will be revised to include all water take components, such as plantation forestry and harvestable right dams, to harmonise with reporting required under the Basin Plan. In this regulated river water sharing plan area, the water source boundary is defined by the bank of the regulated river and hence plantation forestry and harvestable rights dams are located within the adjacent unregulated river water source.

In addition, water taken under a basic landholder right has been excluded from the compliance assessment. This is because any unmodelled estimates are excluded if no assessment of change has been made.

## Compliance assessment

Compared to the LTAEL scenario, the modelled long term average annual extractions from the current condition scenario model are reported in Table 3. The extraction categories include provision for managing growth in extractions from the Peel Regulated River Water Source by Tamworth Regional Council. The water sharing plan specifies that 95% of growth in Tamworth Regional Council extractions is managed in the Namoi Regulated River Water Source.

Our analysis reported in the Peel Regulated River Water Source LTAEL assessment report, estimated Tamworth Regional Council extractions increased by 0.24 GL/y (from 8.37 GL/y to 8.61 GL/y). The volume to be managed in the Namoi Regulated River Water Source is therefore 0.23 GL/y.

The current water sharing plan specifies that there is non-compliance where:

- Current condition extractions exceed LTAEL by 3% or more.
- Current condition extractions exceed the average of Cap and LTAEL.
- Current condition extractions exceed Cap.
- Any exceedance of LTAEL for 3 consecutive water years.

Note: plan limit compliance is assessed on total extractions and not by individual forms of take. The results in Table 3 show current levels of extractions of 209.5 GL/y, less than LTAEL of 225.6 GL/y. Therefore, the Namoi Regulated River Water Source is compliant with the LTAEL.

Table 3. Modelled long term average annual extractions (1895-2021) for Current and LTAEL scenarios (GL/y)

Extraction category	LTAEL scenario model	Current condition scenario model
<b>Modelled extractions</b>		
General security	181.2	145.8
Supplementary access	43.0	60.0
High security and Stock and Domestic	1.4	3.4
<b>Total modelled extractions</b>	<b>225.6</b>	<b>209.2</b>
Tamworth Regional Council growth	n/a	0.2
<b>Total extractions including TRC growth</b>	<b>225.6</b>	<b>209.5</b>

## Modelled compliance action

No compliance action is required, as the LTAEL assessment shows compliance.

## Supporting information

### Results over Basin Plan assessment period

The results over the Basin Plan assessment period of 1895-2009 reported in Table 4 are included for reference only. These results will be used to track the degree to which future model updates change these long-term averages.

Table 4. Modelled long term average annual extractions (1895-2009) for LTAEL and current scenario models (GL/y)

Extraction category	LTAEL scenario model	Current conditions scenario model
<b>Modelled extractions</b>		
General security	188.8	151.3
Supplementary access	44.6	61.9
High security and Stock and Domestic	1.4	3.4
<b>Total modelled extractions</b>	<b>234.8</b>	<b>216.6</b>