

Lake Burley Griffin Abstraction Plan 2005

Our mission: to build the National Capital in the hearts of all Australians



Australian Government
National Capital Authority



Lake Burley Griffin Abstraction Plan 2005
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Preamble

The Authority has statutory responsibility for the management of Lake Burley Griffin (the Lake) water resources in a sustainable manner to protect its ecology and national significance. Wherever possible, the Authority is keen to use the Lake water as a source of second class water for irrigation purposes. Abstraction of water from the Lake is permitted under the provisions of the *Lakes Ordinance 1976*.

To address matters affecting the abstraction of water from the Lake, this *Lake Burley Griffin Water Abstraction Plan 2004* (the Abstraction Plan) has been developed with broad strategies based on the principles of the *National Capital Plan* and *Lake Burley Griffin Management Plan 1995*. The Abstraction Plan seeks to meet the intent and requirements of the *National Water Initiative*, be compatible with management regimes for the broader catchment and comply with the provisions of the *Lakes Ordinance 1976*.

This Abstraction Plan is to be implemented under the Authority's Environmental Management System and will be reviewed on an ongoing basis to accommodate changes in the relevant guidelines such as *ACT Environmental Flow Guidelines 1999*.

Legal Authority

The Lake Burley Griffin Abstraction Plan operates under the *National Land Ordinance 1989* and the applied provisions of the *Lakes Ordinance 1976*, as applied to National Land.

Objective

Establish water consumption and water level targets for Lake Burley Griffin that are sustainable and are compatible with broader catchment management regimes.

Strategies

The Water Resource Management Strategies for the abstraction of water from Lake Burley Griffin, consistent with the *National Water Initiative*, are to:

- ensure environmentally sustainable levels of abstraction, provide for environmental and other public benefit outcomes, and achieve clear characteristics for secure water abstraction authorisations, including clarity around the assignment of risk arising from future changes in the availability of water for abstraction; and
- ensure water accounting which is able to meet information needs and policy settings such as pricing regimes that facilitate water use efficiency and innovation.





Strategy 1:

To ensure environmentally sustainable levels of abstraction, provide for environmental and other public benefit outcomes, and achieve clear characteristics for secure water abstraction authorisations, including clarity around the assignment of risk arising from future changes in the availability of water for abstraction.

Environmental and Other Public Benefit Values

Lake Burley Griffin has a range of environmental and heritage values including cultural, recreational, economic and ecological values as identified in the *Lake Burley Griffin Management Plan 1995*. The Lake will be maintained in accordance with the Principles and Policies of the *National Capital Plan* and the *Lake Burley Griffin Management Plan 1995*.

This will be achieved by:

- conserving the National Capital values of the Lake as intended by the National Capital Plan;
- maintaining the Lake as a viable and stable ecosystem in order to protect the ecological and scientific values of the Lake and its foreshores; and
- protecting the “quality of flow” regime and maintaining an acceptable quality of water to support recreational and commercial activities.

The Lake shall be regarded as part of the “Modified Ecosystem” as defined in the *ACT Environmental Flow Guidelines 1999*, due to the inter-dependency of the catchments, land use, and receiving waters.

Flow Management of Lake Burley Griffin

The minimum inflow requirements to maintain the water level of the Lake are set out in the *National Capital Plan* (Appendix J).

The Abstraction Plan recognises the sharing of Lake water in a manner that protects the environment and supports the environmental releases from Scrivener Dam, generally in accordance with the *ACT Water Resources Management Plan 2004*. Environmental flows should be adaptively managed to incorporate reviews of the environmental flow guidelines to reflect climatic conditions.

Environmental flows are released in a manner such that they will:

- not affect the draw-down of the Lake below 0.25 metres of the normal Lake level of RL 555.93 metres as far as practicable;
- be controlled in accordance with the *ACT Water Resources Management Plan 2004*, and
- cause minimal erosion to the downstream environment.

Water Quality

The Authority manages a comprehensive water quality program to manage the public safety and environmental conditions of Lake Burley Griffin.

Under this program, water quality is monitored and reported on a regular basis. During periods when water quality is assessed as unacceptable for irrigation due to increased bacterial levels or other reasons, abstraction may be prohibited.

Low Flow Management

In accordance with the *ACT Environmental Flow Guidelines 1999*, the control of water abstraction is an appropriate mechanism to support the flows for environmental needs.

These guidelines recommend that:

- water abstraction from rivers and streams shall not exceed the flow rate; and
- the maximum draw-down water abstraction from Lake Burley Griffin is met when the Lake water level is 200mm below the Scrivener Dam spillway (normal Lake Level of RL 555.93 metres).



The guidelines apply during normal flow conditions. During droughts and low-flow conditions, this Abstraction Plan supports a staged reduction in abstraction as follows:

Lake Level conditions	Water Availability	Stage Reductions
Lake level drops no more than 200mm below Scrivener Dam spillway.	<i>General Water Availability</i>	None
Lake Level drops from 200mm to 400mm below Scrivener Dam spillway	<i>Low Risk Water Availability</i>	Approved water abstraction reduced to 85% on a monthly pro-rata basis.
Lake Level drops from 400mm to 600mm below Scrivener Dam Spillway	<i>Medium Risk Water Availability</i>	Approved water abstraction reduced to 70% on a monthly pro-rata basis.
Lake Level drops more than 600mm below Scrivener Dam Spillway	<i>High Risk Water Availability</i>	Approved water abstraction reduced to 70% on a monthly pro-rata basis. Further restrictions may apply.

In exceptional circumstances, water abstraction authorisations will be reviewed on a case by case basis and appropriate measures implemented to protect the Lake environment.



Water Abstraction Authorisations

Lake Burley Griffin forms part of the Molonglo River and tributaries catchment in the Australian Capital Territory, and is identified as Lake Burley Griffin sub-catchment 20 of the *ACT Water Resources Management Plan 2004* (p.10 Table 4 *Think water, act water Volume 3* April 2004. The ACT Government has tabled this report as its *Water Resources Management Plan 2004* required under the ACT's *Water Resources Act 1998*. This ACT legislation, and the associated water resources plan, do not bind the Commonwealth in respect of its management of National Land. The report does provide the best available guide to the determination of the sustainable consumption of water from the subcatchment and forms the basis of the the Abstraction Plan .

The areas requiring further investigations are:

- assessment of the risks associated with the proposed consumption levels;
- understanding of ground water including the interaction between groundwater and surface water resources; and
- actual versus assumed consumption of existing users.

The maximum allocation for abstraction under the *ACT Water Resource Management Plan 2004* is 705 ML a year. The abstraction of water from Lake Burley Griffin is authorised through subsection 12(1) of the *Lakes Ordinance 1976* and is managed by the National Capital Authority.

While the Abstraction Plan aims to meet the requirements of the *National Water Initiative*, the *Lakes Ordinance 1976* does not provide for water entitlements on a permanent basis. However water abstraction authorisations are issued under the *Lakes Ordinance 1976* to both Territory Land users (on leased and unleased land) and National Land users. The authorisations are not transferable under the *Lakes Ordinance 1976*.

The available authorisations for water abstraction shall be in accordance with the Lake Burley Griffin subcatchment No 20 of the *ACT Water Resources Management Plan 2004*.

The maximum allocation for abstraction under the *ACT Water Resource Management Plan 2004* is 705 ML a year. The Abstraction Plan proposes the sharing of this water as follows:

- 69ML represents existing ground water licences managed by Environment ACT within the sub-catchment of Lake Burley Griffin.





- the remaining 636ML to be proportionally divided based on the following priorities:
 - Existing abstractors of water from Lake Burley Griffin
 - Nationally Significant Areas that provide public access/usage (Either National or Territory Land) that can demonstrate efficient water management practices.

All of the above abstractors are within Designated Areas and therefore the Authority has detailed planning and development responsibilities to ensure the protection of the special characteristics of Canberra as the National Capital.

The Abstraction Plan proposes further abstraction of water from Lake Burley Griffin for irrigation purposes, as a supplementary source, will be limited to nationally significant areas used for public use that can demonstrate efficient water management practices. This will be subject to availability of water and will be reviewed annually.

The Abstraction Plan proposes that the reallocation of water under future abstraction plans for nationally significant areas be proportionally shared between all users. This may have an impact on the authorisations of existing abstractors.

In times of reduced flow, the water abstraction authorisations shall be reduced proportionally in accordance with the low flow management requirements of this Abstraction Plan.

Responsibilities of abstractors

It is the responsibility of authorised abstractors of water from Lake Burley Griffin that they use water efficiently and sustainably to minimise impact on the environment and other parties.

Water abstractors will be responsible for the timely and accurate monitoring and reporting of water use.

Granting future abstraction authorisations

Authorisations for abstraction of water shall be under subsection 12(1) of the *Lakes Ordinance 1976*. The conditions of the authorisation are to include the provisions identified in this Abstraction Plan.

This Abstraction Plan proposes a 12-month transition for the implementation of the revised abstraction levels.

It is intended that subsequent authorisations will be issued for fixed terms of up to three years as there is limited research on the long-term impact on the Lake Burley Griffin catchment and its environmental risks, uncertainty in the level of actual use by some abstractors and a potential over utilisation of the water resource based on the sustainable limits proposed in the *ACT Water Resource Management Plan 2004*. There is also limited knowledge of ground water systems in the ACT and the region, and how they interact with surface water systems.

Strategy 2

To ensure water accounting which is able to meet information needs and policy settings such as pricing regimes that facilitate water use efficiency and innovation.

A potential exists to increase the maximum water abstraction capacity from Lake Burley Griffin through the procurement of unallocated water and water from under allocated upstream systems. Details of such availability will be investigated.





Glossary of Terms

Abstraction

Abstraction refers to the removal of water from a natural waterway, dam or bore.

Aquifer

An aquifer is a layer of rock or soil that is permeable and has the capacity to convey significant amounts of groundwater.

Catchment

A catchment is an area of land draining rainfall into a river or reservoir.

Ecosystem

An ecosystem is a biological community of interacting organisms and their physical environment, usually regarded as the water flow regimes (levels and flow) within an ecosystem necessary to sustain the continued existence of the flora and fauna within that ecosystem.

Environmental flow

The environmental flow is the stream flow needed downstream of a water storage to maintain appropriate environmental conditions in a waterway.

Environmental values

Environmental values refer to particular values or uses of the environment that are conducive to public benefit, welfare, safety or health and that require protection from the effects of pollution, waste discharges and deposits. Several environmental values may be designated for a particular water body.

National Water Initiative

The National Water Initiative (NWI) is a comprehensive strategy driven by the Australian Government to improve water management across the country. The NWI addresses a wide range of water management issues and encourages the adoption of best-practice approaches to the management of water in Australia.

Mega litre (ML)

1,000,000 litres or 1,000 kilo litres.

Groundwater

Groundwater is sub-surface water or water stored in pores, cracks, and crevices in the ground below the water table. Water found beneath the land surface, in the zone of saturation below the water table.

Percentile

A percentile is a value between 0 and 100 that indicates the proportion of measurements that falls above the percentile value.

Sustainable Yield

Sustainable yield refers to the quantity of water that may be diverted without having an adverse effect on dependent ecosystems.

Sustainability

Sustainable refers to the level or intensity of use of a resource (such as water) such that the activity can be done now without reducing the possibilities for future generations' use of the resource.

Stormwater

Stormwater refers to rainwater which runs off the land, frequently carrying various forms of pollution such as rubbish, animal droppings and dissolved chemicals. This untreated water is carried in stormwater channels and discharged directly into creeks, rivers, lakes and the ocean.

Surface Water

Surface water refers to all water naturally open to the atmosphere, concerning rivers, lakes, reservoirs, ponds, streams, impoundments, seas, estuaries and wetlands.

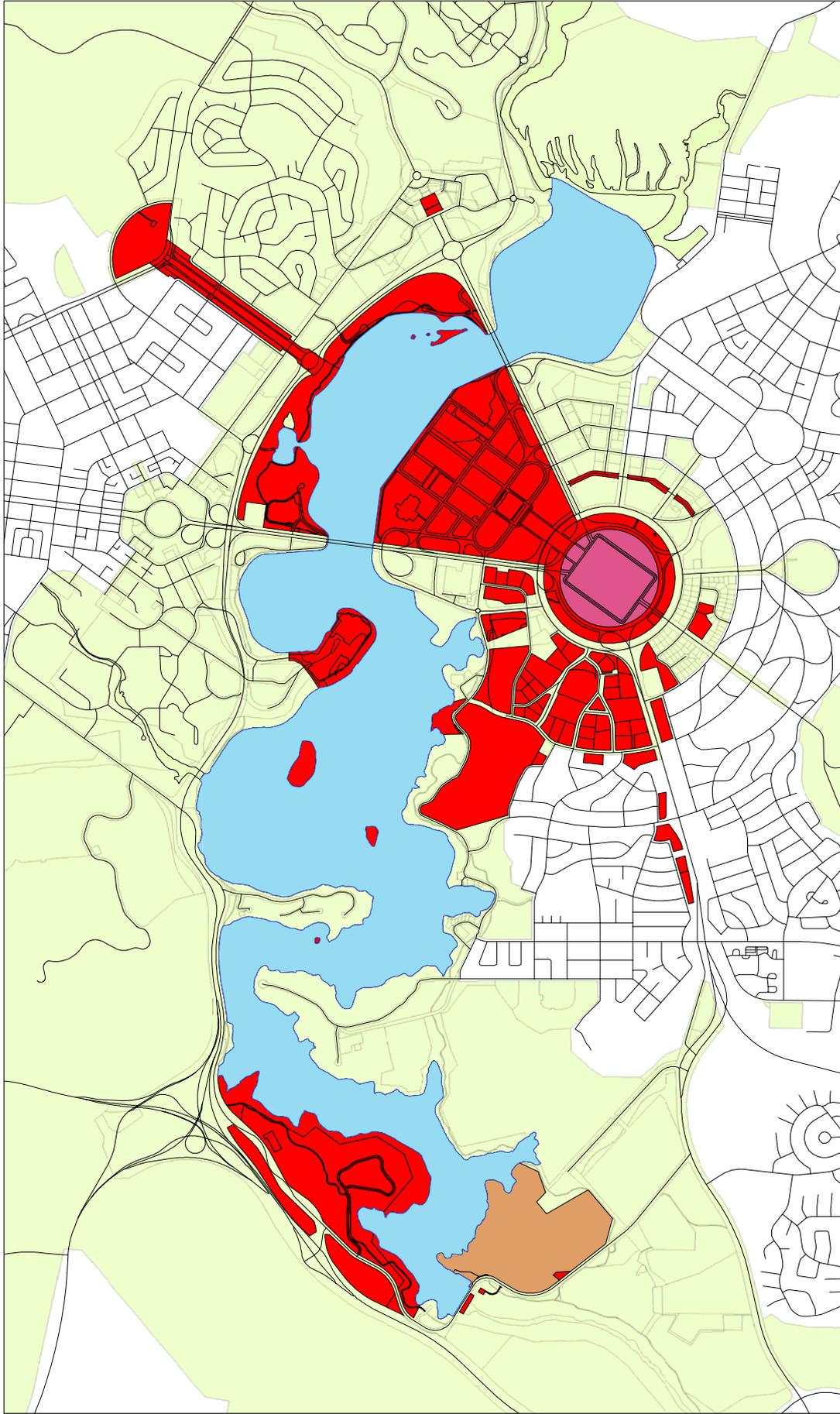
Water resources

Water resources is the supply of water in a given area or basin interpreted in terms of availability of surface and underground water.

Water access entitlement

Water access entitlement refers to the legal right of a user to access a specified amount of water in a given period.





- National Land managed by the National Capital Authority
- Government House
- Parliamentary Precinct
- Lake Burley Griffin
- Designated Areas

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