



NORTH SHORE ROWING CLUB

Aquatic Park, 2A Mary Street, Longueville NSW 2066

Established 1879 | northshorerowing.org.au

FORMAL SUBMISSION: OBJECTION TO PROJECT MARS DATA CENTRE

State Significant Development Application SSD-82052708

12 Mars Road, Lane Cove West NSW

Proponent: Goodman Group

Submitted to: NSW Department of Planning, Housing and Infrastructure

Date: 5 May 2026

1. About North Shore Rowing Club

North Shore Rowing Club (**NSRC**) was established in 1879, making it the oldest sporting club on Sydney's north shore. Since 1933 the Club has been based at its current location at Aquatic Park, 2A Mary Street, Longueville, on the banks of the Lane Cove River. The Club's members row on the Lane Cove River every day of the year, from early morning training sessions through to evening recreational rows.

NSRC is Sydney's pre-eminent masters rowing club and is home to the rowing programs of Roseville College and Barker College. The Club's members have represented Australia at State, National, and International level, including the Olympic Games. Our membership is broadly based across ages, genders, and abilities — from elite competitive rowers to recreational paddlers and learn-to-row participants.

NSRC makes this submission in its own right. NSRC notes that many other rowing clubs and schools use the Lane Cove River as their training and competition waterway. In particular that the following clubs and institutions share this river with us and will be affected by any deterioration in its condition:

- St Ignatius' College Riverview, whose rowing club — one of the finest school rowing programs in Australia, with 128 years of history — is based on the Lane Cove River at Riverview and hosts the Riverview Gold Cup, Australia's oldest schoolboy rowing regatta, raced annually over 1,400 metres on the Lane Cove River.
- Sydney University Boat Club (SUBC), whose Thyne Reid Boatshed at Burns Bay, Lane Cove was completed in 2017 and serves as the home of one of Australia's most decorated rowing clubs, founded in 1860. SUBC has trained World Champions and Olympians from its Lane Cove base, and its student and alumni squads row on the Lane Cove River regularly.
- Community Rowing Club Sydney, currently based at the John Lincoln Boatshed at Tambourine Bay on the Lane Cove River, which provides inclusive rowing opportunities for people of all abilities, including rowers with disabilities.



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- Macquarie University Rowing Club, also operating from Tambourine Bay on the Lane Cove River.

Together, these clubs represent thousands of rowers — children, students, elite athletes, masters' competitors, and recreational participants — for whom the Lane Cove River is not simply a backdrop but an irreplaceable natural resource and training environment.

2. The Lane Cove River: An Exceptional Urban Waterway

The Lane Cove River is a drowned valley estuary that flows from the north-western hinterland of Greater Sydney into Sydney Harbour. It is one of only a small number of estuarine waterways within the Sydney metropolitan area that retain significant bushland along their banks — much of it protected within the Lane Cove National Park. The NSW Department of Planning, Housing and Infrastructure's own NSW Environment and Heritage website acknowledges that the Lane Cove River 'winds through a bushland valley that plays a huge ecological role in a largely urbanised area.'

The river is a designated estuarine waterway with a catchment area of 95.4 square kilometres, an estuary area of 3 square kilometres, and a volume of approximately 12,600 megalitres. Significant areas of mangroves flank the tidal estuary, providing nursery habitat for fish, foraging areas for waterbirds, and natural filtration of waterborne pollutants. The river is listed on the Australian Register of the National Estate and its surrounds are protected as part of the Lane Cove National Park.

Despite its urban setting, the Lane Cove River supports a rich and documented assemblage of waterbirds and aquatic species. The Friends of Lane Cove National Park have documented, from the river and its immediate environs, species including:

- Azure Kingfisher — a species dependent on clean, unpolluted water with clear sight lines for fishing from riverbank perches. This is one of Australia's most striking small birds and is highly sensitive to water quality degradation.
- Eastern Osprey and White-bellied Sea Eagle — apex aquatic predators whose presence depends on a healthy fish population in the river.
- Great Egret, White-faced Heron, Striated Heron, Little Egret, and Nankeen Night Heron — all waterbirds that feed on fish and aquatic invertebrates and are directly sensitive to changes in water quality and fish availability.
- Great Cormorant and Australasian Darter — diving birds that depend on water clarity and fish abundance.
- Royal Spoonbill and Australian White Ibis — feeding in the river's shallows and mangrove edges.
- Australian Pelican — a species that can be regularly observed foraging on the lower reaches of the river.

The river also supports native fish species including Australian Bass, mullet, and other estuarine fish. A fish ladder was installed at the Fullers Road weir in 1999 to allow native migratory fish to navigate between the tidal and freshwater reaches — a significant conservation investment that could be undermined by any deterioration in upstream water quality. The NSW Environment and Heritage report card for the Lane Cove River estuary notes that the river already has an algae abundance grade of 'D' (poor), with an overall estuary health grade of 'C' (fair) — demonstrating that the river's water quality is already under stress and highly vulnerable to any additional pollution burden.



3. The Upstream Connection: 12 Mars Road to the Lane Cove River

For completeness, the Environmental Impact Statement for Project Mars (EIS) must address the requirements of the EP&A Regulations which include a comprehensive description and assessment of “the likely impact of all stages, infrastructure and activities that form part of the development”. This necessarily includes the impact on the Lane Cove River.

The proposed Project Mars site at 12 Mars Road, Lane Cove West is situated within the Lane Cove River catchment. The site's topography slopes significantly from northwest to southeast towards Blackman Park, the Lane Cove Council Depot, and beyond towards the Lane Cove River. Any stormwater, contaminated runoff, or spilled substance from the site will drain through this catchment into the river system.

The NSW Environment and Heritage data confirms that approximately three-quarters of the Lane Cove River's 95.4 square kilometre catchment is already modified for urban and industrial development. Academic research published in the Australian Geographical Studies journal has documented that urban catchment runoff is a significant source of pollution in the Lane Cove River, with water quality in urbanised reaches significantly degraded during rainfall events. The Lane Cove West Business Park — from which stormwater drains into the river — is a key component of this already-stressed urban catchment.

Adding a 90 MW data centre with large quantities of diesel storage, chemical cooling systems, and approximately 18,829 square metres of impervious rooftop and hardstand surfaces to the Lane Cove River catchment will increase both the volume and the chemical contamination load of stormwater flowing toward the Lane Cove River.

However, there is no discussion in the EIS of the consequences of the proposed development on the Lane Cove River catchment or the river itself including from stormwater and its contamination. It is a predictable risk of the development that must be thoroughly modelled and assessed before any consent is granted.

Without consideration of the impact of the proposed development on the Lane Cove River, the EIS is not complete or accurate as required by the Planning Secretary's environmental assessment requirements (SEARs).

4. Specific Waterway Risks Posed by the Development

Large data centres present a series of risks to nearby waterways. These have been identified and well documented, particularly in the USA. None of these impacts are addressed in the EIS.

The most likely and significant of these risks to the Lane Cove River and catchment are summarised here, with research results and examples in the Appendix.

The EIS must identify, model and address these risks as part of any environmental assessment process for the proposed development.



4.1 Risk: Cooling Tower Blowdown - Chemical Contamination of the Catchment

Large data centres use evaporative cooling towers to dissipate the heat generated by their servers. These systems continuously recirculate water, concentrating dissolved minerals, treatment chemicals, and biological control agents as water evaporates. The concentrated residual water — known as 'blowdown' — must be regularly discharged and replaced with fresh water.

Cooling tower blowdown from data centres contains a concerning suite of contaminants, including biocides (such as isothiazolinones and glutaraldehyde) used to prevent microbial growth including Legionella, corrosion inhibitors (phosphates, molybdates, and nitrites), scale-prevention chemicals, elevated total dissolved solids and salts, and trace heavy metals from system corrosion. Research published by KETOS (a water quality monitoring company) and cited in industry literature confirms that if blowdown water is not perfectly contained and treated, it can degrade receiving waterways, increase aquatic salinity, and introduce biocides that are directly toxic to aquatic invertebrates and fish.

In the Lane Cove River catchment, which already carries a 'D' rating for algae abundance, there is no spare capacity to absorb additional chemical contamination.

4.2 Risk: Diesel Fuel Storage and Spill

The Goodman Group's application documents confirm the proposal includes large diesel storage tanks on the site to power backup generators. A 90 MW facility with full backup generation capability may store hundreds of thousands of litres of diesel fuel on-site. The site slopes toward Blackman Park and the Lane Cove River catchment drainage.

Diesel fuel contamination of waterways is one of the most damaging forms of hydrocarbon pollution. Even small quantities of diesel can kill fish, foul mangrove root systems (blocking the oxygen exchange that makes mangroves functional), coat the feathers of waterbirds destroying their insulating properties, and contaminate the aquatic food web for years.

Fuel spill events at industrial facilities are not rare — they occur through tank leaks, vehicle accidents, refuelling errors, and extreme weather events that overwhelm bundled containment areas.

4.3 Risk: Stormwater Runoff from Impervious Surfaces

The proposed development will create approximately 18,829 square metres of new building footprint on a steeply sloped site, plus extensive hardstand areas for parking, loading, and equipment access. This represents a significant increase in impervious surface within the Lane Cove River's urban catchment.

Peer-reviewed research confirms that impervious surfaces in industrial catchments are a primary driver of stormwater contamination of receiving waterways.

The World Economic Forum's analysis of runoff pollution confirms that stormwater from industrial and construction sites carries 'noxious substances' that 'end up in rivers, lakes and other bodies of water,' causing nutrient loading that drives algal blooms through eutrophication — a process that suffocates aquatic life by depleting dissolved oxygen. Given the Lane Cove River's existing algae abundance of grade 'D' (poor), any increase in nutrient loading from construction and operational stormwater would push the river further towards a very poor ecological condition.



4.4 Risk: Thermal Pollution and Water Temperature

Data centres generate significant quantities of waste heat. Published industry analysis confirms that cooling discharge from data centres can raise the temperature of receiving waterways by measurable amounts. A 90 MW data centre will discharge warm water from its cooling systems, either directly or via the local stormwater and wastewater network. Thermal pollution of rivers is a well-documented phenomenon that reduces dissolved oxygen levels in the water — warmer water holds less dissolved oxygen than cooler water — stressing fish, macroinvertebrates, and aquatic vegetation.

The same principle applies wherever data centre cooling discharge enters a catchment that drains to a sensitive waterway. The Lane Cove River is such a waterway.

4.5 Risk: Water Consumption and Reduced Catchment Flow

A 90 MW data centre using evaporative cooling is projected — based on the World Economic Forum and peer-reviewed research in *Nature npj Clean Water* — to consume up to 25.5 million litres of water per megawatt of capacity per year. For a 90 MW facility, this implies potential annual water consumption exceeding 2.2 billion litres. Much of this water will be evaporated and lost permanently from the local hydrological cycle — it will not return to the Lane Cove River catchment.

When large volumes of water are permanently removed from a catchment through evaporation, the base flows of rivers and streams in that catchment are reduced. This is particularly significant during drought periods, when reduced river flow concentrates existing pollutants and stresses already marginal aquatic habitats.

5. Impact on Rowing and Water Recreation

5.1 The Lane Cove River as a Rowing Precinct

The Lane Cove River is not merely a picturesque amenity — it is an active and heavily used sporting waterway of historical and current national significance. The Riverview Gold Cup Regatta hosted by St Ignatius' College Riverview is an official Rowing NSW event within the NSW club season and one of the oldest rowing events in Australia, attracting school and club crews in over 30 events. It is raced on the Lane Cove River, typically in March each year.

Sydney University Boat Club's Thyne Reid Boatshed at Burns Bay, Lane Cove — completed in 2017 after an eleven-year planning and construction period — was purpose-built on the Lane Cove River to serve SUBC's elite and student rowing programs. SUBC has produced multiple Olympic representatives and World Champions who have trained on this waterway.

North Shore Rowing Club's members row daily on the river. Our morning training sessions begin before dawn. Our rowers experience the river in all its daily moods — calm summer dawns alive with Azure Kingfishers, egrets on the rock ledges, and cormorants drying their wings on the channel markers; busy autumn mornings with school crews from Riverview preparing for the Head of the River season; winter evenings when the bushland on the banks reflects in the still water. This is not an abstraction. This is where our members live their sporting lives.



5.2 Water Quality and Rower Safety

Rowers are among the most directly exposed users of any waterway. We train and race on the river's surface, we capsize and recover in its water, we launch and retrieve boats by wading in its shallows. Water quality is not an abstract environmental concern for rowing clubs — it is a direct safety and health issue for our members.

The Lane Cove River is already subject to periodic water quality advisories after heavy rainfall. The introduction of additional contamination sources — biocides from cooling tower blowdown, hydrocarbons from diesel storage and generator operation, heavy metals and volatile organic compounds from stormwater runoff, and thermal pollution from cooling discharge — would increase the frequency and severity of these events. Biocides including isothiazolinones used in cooling towers are known skin and respiratory sensitizers that cause allergic reactions in humans, in addition to their toxicity to aquatic organisms.

Any significant spill of diesel or other hydrocarbons from the site — an event that occurs at industrial facilities with predictable regularity — would require immediate closure of the river for all recreational use and could contaminate the waterway for months. The Goodman Group's application does not appear to have considered the downstream recreational value of the Lane Cove River, and we submit that the Social Impact Assessment prepared by Urbis Social Planning is deficient in this regard.

5.3 Impact on the Rowing Environment

The quality of the rowing environment on the Lane Cove River is inseparable from the ecological health of the river. Our members row early in the morning and late in the afternoon — the times when birdlife is most active on the river. The Azure Kingfisher darting low across the water ahead of a four, the White-bellied Sea Eagle soaring above the canopy, the Great Egret standing motionless in the shallows as a shell slides past — these experiences are part of what makes the Lane Cove River a treasured rowing ground, not merely a body of water.

Any development that degrades the ecological condition of the river — through pollution of its waters, disruption of its riparian wildlife, or impairment of its visual and natural amenity — diminishes the river as a place of sport, community, and natural heritage. The Lane Cove River has been home to rowing since the first Riverview Regatta in the 1880s. Its value as a sporting and natural waterway has been built over 140 years. It should not be degraded by a development that gave no evident consideration to these values in its planning.

6. International Evidence: Data Centres and Waterway Impacts

Internationally, the impacts of large data centres on waterways have been well documented. The EIS does not address any of these, either in its assessment of likely impacts or any discussion of risk mitigation measures.

The likelihood of these types of impact must be described, assessed, and addressed as part of the EIS before any development is approved.



6.1 Water quality impacts - Northern Virginia and the Occoquan Reservoir, USA

The most extensively documented example of data centre impacts on waterways comes from Northern Virginia, USA, which hosts the world's largest concentration of data centres in Loudoun County — more than 35% of all known hyperscale data centres worldwide.

A report commissioned by the National Parks Conservation Association and examined by local water authorities concluded that proposed data centre developments in Prince William County would contribute 'hundreds of millions of gallons' of additional stormwater runoff and associated pollution to waters flowing into the Occoquan Reservoir — a drinking water source for over two million people. The water authority's General Manager wrote formally to warn that 'substantial changes in land use patterns in areas of Prince William County will impact water quality in the watershed and reservoir.'

The Fairfax County Environmental Quality Advisory Committee specifically identified cooling tower blowdown saline residues as 'already of some concern' in local watersheds, and warned that if multiple data centres in one catchment all discharge such water, localised water quality will deteriorate. In response, Virginia has now passed legislation requiring data centres to report water usage to regulators — an acknowledgement that the water impacts of these facilities were previously unknown and unmonitored.

6.2 Increased stormwater runoff, biocides - Potomac River, USA

In April 2026, the Potomac River was named one of the most threatened rivers in the United States by the American Rivers conservation organisation, with data centre development explicitly cited as a contributing factor. The Potomac Conservancy has documented that large data centres in the Potomac River region 'cover large acreages with impervious surfaces, leading to increased stormwater runoff into local waterways,' and has raised specific concerns about biocides and so-called 'forever chemicals' (PFAS) used in cooling processes entering waterways 'if not properly managed.'

A data centre proposed at the site of a former coal-fired power plant in Maryland proposed to draw water from the Potomac River for cooling and return warm water to the river — prompting formal objections from environmental groups and residents about the impact on the river's ecology and fisheries, including oysters, blue crabs, and striped bass. The parallel with the Lane Cove River situation is direct: a large industrial water user in a sensitive catchment, with inadequate assessment of downstream ecological impacts.

6.3 Cumulative Catchment Loading - Chesapeake Bay USA

A key finding from international evidence is that the environmental impact of data centres on waterways must be assessed cumulatively across the entire catchment, not project by project. In Northern Virginia, the Bay Journal — the leading publication covering the Chesapeake Bay watershed — reported that 80 million square feet of data centre concrete in one county was contributing to stormwater pollution that ultimately degraded the Chesapeake Bay, one of the United States' most significant estuarine ecosystems.

In the Lane Cove River catchment, Project Mars would join an existing 110 MW AirTrunk data centre at Lane Cove West (with a further 45 MW expansion proposed) and a proposed 170 MW data centre at Julius Avenue, North Ryde — which the proponent's own documents note would be near 'the eastern side of Lane Cove River in Lane Cove North.' The cumulative catchment load from these facilities — in impervious surface, cooling water discharge,



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stormwater contamination, and diesel storage risk — has not been assessed by any applicant and must be comprehensively evaluated before any further development in this catchment is approved.

7. What the EIS Must Address: Our Specific Requests

North Shore Rowing Club submits that the Environmental Impact Statement for Project Mars is deficient in its treatment of the Lane Cove River, . The EIS does not provide a comprehensive description and assessment of the likely impacts of the development and its activities on Lane Cove River. North Shore Rowing Club requests that the Department of Planning, Housing and Infrastructure require the proponent to address the following matters before the application can be properly assessed:

1. A **comprehensive stormwater quality impact assessment**, modelling the quantity and chemical composition of stormwater runoff from the completed site under a range of rainfall scenarios, and its predicted impact on the water quality of the Lane Cove River at and below the point of discharge.
2. A **detailed cooling water management plan**, including a full specification of all chemical treatment agents (biocides, corrosion inhibitors, scale inhibitors) to be used in cooling systems, the chemical composition of blowdown water, the volume and frequency of blowdown discharge, and the treatment system to be used before discharge. The plan must demonstrate that biocides and other contaminants will not enter the stormwater network or the Lane Cove River catchment.
3. An **independent hydrogeological assessment of the drainage pathway** from the site, including the bunded containment areas for diesel storage, identifying the precise catchment drainage path and the points at which any spill or contaminated stormwater would enter the waterway network.
4. A **site-specific Emergency Spill Response Plan** for diesel fuel and other hazardous substances, including the containment measures required, the emergency response time to contain a worst-case spill before it enters the drainage network, and an assessment of the ecological consequences of a worst-case spill on the Lane Cove River.
5. An **aquatic ecology assessment** of the Lane Cove River reaches directly influenced by the site's catchment drainage, including a baseline survey of waterbird species, native fish species, macroinvertebrate communities, and water quality indicators, against which ongoing monitoring can be assessed.
6. A **cumulative impact assessment of all existing and proposed data centre developments** in the Lane Cove River catchment, including the AirTrunk facility, the proposed AirTrunk expansion, and the Julius Avenue proposal, with respect to cumulative stormwater loading, water consumption, and contamination risk to the river.
7. A **social impact assessment** that specifically addresses the recreational use of the Lane Cove River — including by North Shore Rowing Club, St Ignatius' College Riverview Rowing Club, Sydney University Boat Club, Community Rowing Club, and Macquarie University Rowing Club — and the potential impacts on that use from any deterioration in river water quality, visual amenity, or ecological condition.



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8. **Conditions of consent** requiring real-time, continuous monitoring of stormwater quality at the site's drainage outlets, with publicly accessible data and automatic trigger thresholds that activate emergency response protocols and immediately notify the EPA, Lane Cove Council, and downstream rowing clubs of any contamination event.

8. Conclusion

The Lane Cove River is one of Sydney's most exceptional sporting and ecological waterways. It has been home to organised rowing for nearly 140 years. Its banks shelter an extraordinary assemblage of waterbirds in an urban setting. Its waters support a fish ladder built at public expense to restore native fish migration. Its estuary is protected as part of the Australian Register of the National Estate.

International evidence from Northern Virginia, the Potomac River, and the Chesapeake Bay is unambiguous: unplanned data centre development in sensitive catchments degrades river water quality, increases contamination risk, reduces catchment base flows, and ultimately threatens both human recreational use and aquatic ecosystems. The Lane Cove River catchment is no less vulnerable, and is arguably more precious — as a rare urban river with intact bushland, a protected National Park, a documented population of threatened species, and a vibrant, multi-generational community of recreational users.

North Shore Rowing Club respectfully but firmly objects to Project Mars in its current form. We call on the Department of Planning, Housing and Infrastructure to refuse this application unless and until the proponent provides comprehensive, independent, and credible assessment of the risks the project poses to the Lane Cove River and those who depend upon it. The river does not have a voice of its own. The thousands of rowers, students, families, and wildlife who rely upon it do — and we are speaking now.

Submitted by:

North Shore Rowing Club

Aquatic Park, 2A Mary Street, Longueville NSW 2066

northshorerowing.org.au

Established 1879 | Sydney's oldest north shore sporting club

Date: 5 May 2026



Appendix

Additional Detail on Waterway Risks of Large Data Centres

4.1 Cooling Tower Blowdown: Chemical Contamination of the Catchment

Research: Cooling tower blowdown from data centres contains a concerning suite of contaminants, including biocides (such as isothiazolinones and glutaraldehyde) used to prevent microbial growth including Legionella, corrosion inhibitors (phosphates, molybdates, and nitrites), scale-prevention chemicals, elevated total dissolved solids and salts, and trace heavy metals from system corrosion. Research published by KETOS (a water quality monitoring company) and cited in industry literature confirms that if blowdown water is not perfectly contained and treated, it can degrade receiving waterways, increase aquatic salinity, and introduce biocides that are directly toxic to aquatic invertebrates and fish.

Example: In the United States, this issue has become a documented concern in regions with high concentrations of data centres. In Northern Virginia — host to the world's largest cluster of data centres — the Fairfax County Environmental Quality Advisory Committee has warned that cooling tower blowdown contains saline residues already 'of some concern' in local watersheds, and that if multiple data centres in a catchment are all discharging such water, local waterway quality will deteriorate. In the Lane Cove River catchment, which already carries a 'D' rating for algae abundance, there is no spare capacity to absorb additional chemical contamination.

4.2 Diesel Fuel Storage and Spill Risk

Example: Objectors to a previous data centre proposal at Sirius Road, Lane Cove West — as recorded in the submissions to that project on the NSW Planning Portal — raised concerns about 'a large amount (1 million litres) of hydrocarbons on a site with recognised fire risk' and the absence of any plan to address 'concentrated runoff, nor the diversion of drainage to swamps on the river.' The same concerns are relevant here with even greater urgency, given the scale of the proposed Project Mars development.

4.3 Stormwater Runoff from Impervious Surfaces

Research: - Peer-reviewed research published in journals including the PMC (National Institutes of Health) and ScienceDirect confirms that impervious surfaces in industrial catchments are a primary driver of stormwater contamination of receiving waterways. Runoff from industrial hardstand areas carries elevated concentrations of hydrocarbons, heavy metals (copper, zinc, lead), volatile organic compounds (benzenes, toluenes), and suspended solids. Research from peer-reviewed studies of stormwater pollution has found that copper contamination from industrial catchment runoff routinely exceeds safe concentrations for aquatic species including Daphnia (water fleas), which form the base of freshwater food webs.

Example: The World Economic Forum's analysis of runoff pollution confirms that stormwater from industrial and construction sites carries 'noxious substances' that 'end up in rivers, lakes and other bodies of water,' causing nutrient loading that drives algal blooms through eutrophication — a process that suffocates aquatic life by depleting dissolved oxygen. Given the Lane Cove River's existing algae abundance of grade 'D' (poor), any increase in nutrient



loading from construction and operational stormwater would push the river further towards a very poor ecological condition.

4.4 Thermal Pollution and Water Temperature

Thermal pollution of rivers is a well-documented phenomenon that reduces dissolved oxygen levels in the water — warmer water holds less dissolved oxygen than cooler water — stressing fish, macroinvertebrates, and aquatic vegetation.

Example: In the United States, a data centre proposed for the site of a former coal-fired power plant in Maryland's Montgomery County proposed to draw water from the Potomac River for cooling and return warmer water to the river — prompting alarm from residents and environmental groups about the impacts on the river's ecology and fisheries. The same principle applies wherever data centre cooling discharge enters a catchment that drains to a sensitive waterway. The Lane Cove River is such a waterway.

4.5 Water Consumption and Reduced Catchment Flow

Example: Researchers at the Lincoln Institute of Land Policy have explained this ecological impact precisely: 'Even if they're using reclaimed or recycled water, that water is no longer going back into the base flow of the rivers and streams. That has ecological impacts as well as supply issues.' When large volumes of water are permanently removed from a catchment through evaporation, the base flows of rivers and streams in that catchment are reduced. This is particularly significant during drought periods, when reduced river flow concentrates existing pollutants and stresses already marginal aquatic habitats.