Concerned Waterways Alliance Submission to Infrastructure Victoria Draft 30-Year Infrastructure Strategy

Submitted via: https://engage.vic.gov.au/victorias30yearinfrastructurestrategy

The Concerned Waterways Alliance (CWA) welcomes the opportunity to respond to Infrastructure Victoria's draft *30-Year Infrastructure Strategy*. As a network of community organisations, conservation groups, and concerned individuals advocating for the health of rivers, wetlands, and waterways across southern Victoria, we are encouraged by the Strategy's recognition of the growing threats to our freshwater ecosystems in a drying climate, and the pivotal role of climate-independent water sources in securing a more sustainable future water supply.

Current strengths in the Draft Strategy

We commend the Strategy's recognition of the existential threat facing many of Victoria's rivers due to declining flows, especially in heavily overallocated catchments such as the Yarra, Moorabool, Latrobe and Barwon. The frank references to rivers drying out in summer, resulting in fish deaths and broader ecological collapse, is an honest and necessary acknowledgement of the crisis at hand.

We are particularly encouraged by the strategy's emphasis on:

- **Climate-resilient water supply**: The move toward climate-independent, manufactured water sources including desalination and recycled water, and greater stormwater capture and use, represents a much-needed pivot from unsustainable reliance on rainfall and runoff.
- **Environmental water needs**: The acknowledgement that rivers need more water left in them for ecological needs, and that current environmental water recovery efforts fall far short of long-term requirements, is critical for guiding future investment and reform.
- **Integrated water management and potable reuse**: The cautious yet positive positioning of recycled water for potable use is welcome. We agree that a pilot

project, accompanied by a robust community education campaign, is essential to build public trust and support.

These directions align with the lived reality in southern Victoria: we cannot continue to draw heavily on already stressed natural waterways to meet growing urban and agricultural demand while giving lip-service to sustaining ecological health.

We are heartened that the community engagement by Infrastructure Victoria detailed in your *Official Strategy objectives engagement report* revealed similar concerns in the wider community:

> *"Water In our objectives survey, young people's forum, and in the regional and sector workshops, people identified better water management as a priority. For example, young people attending our forum selected sustainable water management as a key idea. They noted the risks of water scarcity and the need for secure water supplies for communities and food growers." (p.6)*

The CWA believe the narrative of moving to potable use of recycled water is strengthened considerably when demonstrable and quantifiable improvements to highly stressed waterways can be illustrated.

Areas for Strengthening

While we support the draft's overall direction, we urge Infrastructure Victoria to strengthen its treatment of the following areas:

1. **Ageing wastewater treatment infrastructure**: The impact of increased volumes of inadequately treated effluent discharge into flow-stressed rivers is a growing concern.
2. **Augmentation in supply must relieve existing over-extraction from rivers**: Climate-independent water sources must not only meet future demand but also help restore overallocated and degraded river systems.
3. **Climate mitigation potential of healthy waterways**: The role of rivers and wetlands in carbon sequestration, cooling, and resilience is underexplored within the Draft and deserves attention.
4. **Changing potable water harvesting arrangements:** the aged infrastructure for potable water harvesting can have a devastating impact on downstream river ecosystems, undermining the health of the entire living entity.
5. **Prioritising investment in water infrastructure:** the price of water does not reflect externalities or cover the cost of infrastructure investment.

6. **Supporting Agricultural Efficiency and Waterway Health:** improving agricultural water efficiency is essential for building a climate-resilient food system and reducing pressure on Victoria's rivers.

Ageing wastewater treatment infrastructure

Across Victoria, many wastewater treatment plants continue to discharge large and increasing volumes of low standard treated effluent into rivers experiencing declining baseflows. In climate-stressed catchments, these discharges can now make up the majority of flow in summer and autumn, fundamentally altering water quality, temperature, and ecological function. This dynamic is especially pronounced in waterways such as the Campaspe, Leigh, Latrobe and Maribyrnong rivers, where wastewater volumes are rising due to population increases, while natural catchment inflows and stream volumes are declining due to climate change.

Water authorities, DEECA, and to some extent the EPA, are seeking to address community concerns about increasing discharges by promoting the potential ecological benefits of treated wastewater, particularly when upgraded to so-called 'water for the environment'[1].

> *"The primary purpose of recycled water is to use it as a resource in a safe and sustainable way. The use of recycled water in surface waters is to improve waterway flows to help maintain and support waterway health. This use of recycled water is different from that of a treated wastewater discharge to waterways." EPA*

The CWA maintains that the first priority should be to treat this water to a standard suitable for either potable substitution or direct potable supply. This approach would support a reduction in water authorities' reliance on bulk water entitlements from waterways. Critically nutrients, algae, forever chemicals such as PFAS/PFOS and pharmaceuticals must be removed before discharge to the environment. Technology exists to achieve this level of water quality and is used extensively overseas, for example Switzerland is among those who have adopted extended treatment technology to improve water quality for stream environments. In Victoria investment is severely limited by lack of funds.

[1] Recycled water use in surface waters guideline EPA Publication 3005 February 2024

Decision: Coliban Water vs EPA

"Ultimately Coliban Water got its way. The VCAT accepted amendments were finalised with the EPA conceding to Coliban Water the ability to discharge into the Campaspe River at up to 2 parts treated effluent to 1 part river volume for up to 30% of the annual discharge at the Kyneton gauge. This is in comparison to the EPA's original preferred dilution factor of 33%, or 1part discharge to 2 parts river flow, which now only holds for the balance of the annual discharge.

In doing so the EPA has set a concerning precedent and there is little doubt water authorities seeking to increase the discharge loads of treated wastewater into receiving streams will move for similar concessions."
https://concernedwaterwaysalliance.org/coliban-water-vs-the-epa-at-vcat/

This long-term infrastructure strategy must explicitly address this issue. We urge Infrastructure Victoria to:

- Acknowledge the role of wastewater treatment plants in degrading water quality and impacting the instream ecology of rivers already stressed by over extraction and a drying climate.
- Prioritise investment in regional recycled water schemes and treatment plant upgrades that reduce discharges to rivers and redirect water to fit-for-higher purpose use (potable, agriculture, industry, green infrastructure etc).
- Align the state's urban growth strategy with sustainable water outcomes, ensuring that population and development planning does not further exacerbate damaging discharge practices.

Changing Potable Water Harvesting arrangements

Many water harvesting arrangements and the resulting infrastructure to divert water were developed before there was comprehensive understanding of their impacts on river ecology. As a result, many rivers are starved of the necessary continuity of food webs that support a viable downstream ecosystem.

Many catchments in southern Victoria are suffering from the impacts of multiple small weirs that divert water for potable use. Examples include:

Werribee and Lerderderg catchments- Ballan weir, Maddingly weir, Lerderderg weir and Goodmans Creek weir

Maribyrnong catchment - Mountain Hut weir, Main Creek weir, Bolinda Creek weir, Barringo Creek weir,

Yarra catchment - Donnellys Creek Weir, Graceburn Creek, Badgers Creek weir, Armstrongs Creek East weir, Armstrongs Creek west Weir, McMahons Creek weir, Starvation Creek weir.

These weirs reduce the transfer of organisms and organic matter (food) downstream and prevent fish passage. Climate change will exacerbate their impacts. There are technologies available, for example adapting filtering techniques from the food industry, to overcome these impacts and must be progressively be taken up if their communities are to survive. We stand to lose the very systems that support human and cultural environmental services.

Prioritising investment in water infrastructure

The Essential Services Commission (ESC) plays a critical role in setting the prices Victorians pay for water through 5-year pricing determinations. These decisions are not simply technical, they affect cost-of-living pressures, equity outcomes, and environmental sustainability.

We acknowledge the importance of keeping water prices as low as possible for households, especially during a time of rising living costs. Access to clean, safe, and affordable water is a basic necessity and a public good.

> *"The right to water entitles everyone to have access to sufficient, safe, acceptable, physically accessible, and affordable water for personal and domestic use."*
> *https://www.unwater.org/water-facts/human-rights-water-and-sanitation*

However, this imperative should not be extended beyond household use. Prices for other users must be balanced with the need to properly fund and maintain the infrastructure that delivers it.

Currently, the push to keep prices low across the board has contributed to chronic underinvestment in Victoria's water infrastructure. Many of the state's key assets: pipes, reservoirs, and treatment plants, were built more than a century ago and are in urgent need of renewal or replacement. Without adequate revenue, water authorities struggle to modernise systems or adopt more sustainable water management practices, such as the delivery of environmental flows or investment in purified recycled water.

A revised pricing framework is needed—one that safeguards access to essential water for households, while reflecting the true cost of water use and treatment by commercial enterprises. Businesses that rely on large volumes of water to generate private profit should contribute more to the cost of maintaining and upgrading the systems that

support their operations and deal with their waste. This includes pricing that reflects the environmental impact and opportunity cost of their water use and disposal.

For example, under the Kennett Government's water reforms, the commercial property sector was hit with substantial levies to raise revenue to help pay off water debt. This was seen as a more politically expedient way of raising revenue than through pricing the residential sector. Emergency measures were also enacted in Brisbane during the Millenium drought requiring property owners to undertake water audits and implement works arising from those audits. Strict timescales were imposed on commercial landlords to retrofit their premises with water saving features, some at considerable cost. There was very little pushback. These initiatives, amongst others, helped reduce Brisbane's water consumption from 300 to 127 litres per day.

In Victoria, pricing determinations can appear to align with electoral cycles, with major ESC reviews often concluding close to state elections. For instance, the 2023 pricing determinations (governing charges from July 2023 to June 2028) were finalised shortly before a state election[2]. While the ESC is an independent regulator, the timing of price decisions can affect public and business perception and limit the political appetite for meaningful increases, even when they are necessary to sustain critical infrastructure.

The long-term consequence of suppressed pricing, particularly across the board without regard to user type, has been a failure to invest in future-ready water systems. The Victorian Government's COVID Debt Repayment Plan has further exacerbated this situation, diverting funds from essential water infrastructure projects to cover broader fiscal shortfalls.[3] This has delayed the rollout of transformative solutions, including purified recycled water schemes and improved water treatment for environmental flows.

If we are to realise a climate-resilient and water-secure Victoria, we must urgently prioritise water infrastructure investment and ensure that available funds cannot be redirected away from this essential public good. Water infrastructure, like our rivers, is not expendable. It is vital to community wellbeing, environmental health, and long-term economic resilience.

Supporting Agricultural Efficiency and Waterway Health

Improving agricultural water efficiency is essential for building a climate-resilient food system and reducing pressure on Victoria's rivers. However, it is equally critical that efficiency initiatives are designed with an awareness of the broader systemic risks - including unintended environmental, social, and economic consequences.

[2] ESC water price review 2023
[3] Victorian Government Budget 2023/24 Covid Debt Repayment Plan

In southern Victoria, outdated irrigation infrastructure continues to result in excessive water use, degraded waterways, and lost productivity. For example, flood irrigation remains common in parts of the Macalister Irrigation District (MID), particularly on dairy and beef grazing farms. Shifting to more efficient systems, such as sprinkler or spray irrigation, can reduce water use by 20–40% while also improving crop yields by 10–30% and reducing nutrient runoff[4]. These changes also help save farmers time and reduce nutrient pollution of waterways, improving environmental outcomes downstream.

However, the experience of the Murray-Darling Basin (MDB) illustrates that government investment in on-farm efficiency upgrades can lead to significant unintended consequences. These include reduced return flows that undermine environmental water recovery, increased water demand from intensified production, speculative water trading, and a shift toward permanent, high-water-demand crops like almonds and cotton.

These trends show how well-meaning public investment in irrigation efficiency can entrench unsustainable land use patterns, fuel water market distortions, and exacerbate the very pressures it aims to resolve. As such, public funding for irrigation upgrades should be approached with caution and grounded in robust environmental and equity safeguards.

The ecological impacts of current irrigation practices are evident in regulated systems like the Macalister. As noted by the Victorian Environmental Water Holder (VEWH):

> *"Although Lake Glenmaggie regularly spills, a high flow is less frequent than natural because the storage captures much of the water… The changed hydrology restricts fish migration, limits the growth and recruitment of in-stream and streamside plants and reduces the quality of in-stream habitat."*
> — VEWH Seasonal Watering Plan

These flow alterations not only reduce ecological resilience but diminish the cultural, recreational, and social values that healthy waterways provide.

Infrastructure Victoria must ensure that any future investments in irrigation efficiency are aligned with broader water and land use reforms, environmental recovery goals, and transparent evaluation of long-term outcomes. This includes ensuring that any efficiencies gained do not translate into increased extraction but rather support water recovery for rivers, aquifers, and the environment.

[4] https://www.researchgate.net/figure/Performance-of-sprinkler-irrigation-vs-flood-irrigation_tbl3_325870811

Comments on specific recommendations and options

RECOMMENDATION 25: Advance Integrated Water Management and Use More Recycled Water

> *"Work with partners to fund and deliver integrated water management projects. Determine the costs and benefits of introducing recycled drinking water in Melbourne and Geelong and build a pilot recycled drinking water facility. Deliver a community education campaign on the need for more water sources."*

We strongly support this recommendation and urge that any investment in water augmentation deliver an explicit ecological dividend, in particular natural flow returns for rivers that supply the bulk of urban and irrigation demand, such as the Moorabool, Barwon, Werribee, Maribyrnong, Yarra, Latrobe and Thomson Rivers.

The key is central funding to initiate priority projects already identified in the myriad of IWM plans. As discussed above, little advance will be made without Central Government investment and or changes in the way agencies' revenue raising is manipulated through the ESC and Treasury edicts. Urgent action is needed to ensure IWM opportunities are taken up.

The Strategy should clearly state that potable reuse of recycled water should enable the return of more water to these waterways. In some cases, this will determine whether they survive existing over-allocation and ongoing climate-driven declines in inflows.

FUTURE OPTION: Plan for and Invest in Manufactured Water

> *"Plan for and invest in manufactured water. Return more water to Traditional Owners and the environment."*

This topic is so important it should be elevated from a *Future Option* to a **Recommendation**. The urgency is already here: southern Victoria's waterways are experiencing rapid declines in inflows, and population growth is already intensifying demand.

The Central and Gippsland Region Sustainable Water Strategy, referenced in the Draft Strategy, clearly spells out that 30% of Melbourne's water will need to come from manufactured sources by 2040. Yet the government has been slow to release the Water Grid Plan that is intended to identify potential projects and establish a pathway to meeting this need. The Grid Plan is already 18 months overdue despite the urgency of the situation.

While conservation and efficiency measures have successfully reduced per capita water use, these gains are nearing their limits and are now being outpaced by population growth. Further delaying investment in climate-independent water sources would be short-sighted. A secure, manufactured water supply is essential—not only to meet future demand but to relieve pressure on rivers and protect their long-term health. Strengthening river resilience in the face of climate change is not optional; it is critical.

The push towards greater use of manufactured water requires co-ordinated central funding for the reuse of stormwater. The capture and reuse of stormwater is a critical element of reducing the amount of (expensive) manufactured water to be found from highly treated effluent or desalination. The current lack of investment in planning and implementation of infrastructure to facilitate stormwater capture at a local and precinct scale is leading to missed opportunities and will increase future costs. No-one is taking the lead or investing in the development of stormwater reuse schemes.

The capture and reuse of stormwater is an important part of trying to get some balance back into urban waterways and not only mitigating against future flood events but preventing the creeks and rivers becoming concrete channels. For example, it is understood that a reduction in hard surfaces of more than 30% is required in the Gardiners Creek catchment to revert the creek to a manageable level.

RECOMMENDATION 26: Better Use Government Land for Open Space and Greenery

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Fund actions to better connect open spaces to each other and plant more trees and shrubs in urban areas. Give Victorians access to more public land in fast growing suburbs. Target at least 30% tree canopy and shrub cover on public land."

Urban waterways are uniquely positioned to provide green, connected, shaded public spaces and biodiversity refuges—but only if protected with adequate development setbacks. Wider riparian zones (50–100+ metres) are essential to deliver the multiple ecological and public health benefits outlined in this recommendation. These include:

- Biodiversity protection: Riparian zones support wildlife movement, provide habitat for threatened species like platypus and rakali, and maintain critical ecological corridors.
- Water quality and pollution control: Vegetated buffers filter out nutrients and sediments before they enter waterways.
- Climate resilience and canopy cover: Riparian vegetation shades waterways, mitigates urban heat, and sequesters carbon.
- Flood mitigation and erosion control: Healthy riparian corridors act as natural floodplains, reducing downstream flood risks and stabilising riverbanks.

Additionally, extensive global and Australian research confirms that access to green and blue spaces—including waterways, wetlands, and shaded parklands—improves both mental and physical health outcomes. These environments reduce stress, anxiety, and depression, and are associated with increased physical activity, social connection, and overall wellbeing.

Investment must be prioritised in areas with low existing canopy cover, where poor shading and a lack of accessible green space are having a disproportionately negative impact on both local biodiversity and community wellbeing. As highlighted in the *Greening the West* strategy[5], these areas—particularly in Melbourne's west—face heightened vulnerability to the impacts of urban heat, air pollution, and climate stress.

This evidence demonstrates that investing in riparian corridor protection and vegetation delivers cross-cutting benefits relevant to multiple parts of the strategy

RECOMMENDATION 27: Better Prepare Infrastructure for Climate Change

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"Fund high-priority, cost-effective infrastructure adaptation actions when climate adaptation action plans are updated in 2026. Produce an energy sector adaptation plan."

Whole of catchments should be included in climate adaptation planning. We need to strengthen and make greater use of water supply protection areas to preserve resources for both potable water extraction and the environment in the face of declining inflows. The protection and restoration of upper catchments is crucial to retaining water in the landscape and mitigating the impacts of both droughts and floods.

[5] https://greeningthewest.org.au/

RECOMMENDATION 28: Use New Flood Maps to Revise Planning Schemes

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"Produce a common set of flood projections based on the latest climate data. Use this information to update flood studies and maps and apply them in planning schemes. Minimise building in areas at high risk of flooding."

Updated flood planning is essential but must also account for the increasing intensity of rain events. Infrastructure responses should include:

- Ensuring that urban consolidation and densification does not exacerbate the deficiencies of aged infrastructure and increase overland flows paths. There is a danger of increasing the number of properties already subject to overland flow path flooding, particularly in the older suburbs of Melbourne, Geelong, Ballarat, and Bendigo. Many systems are already subject to increased flooding risk with changes in Intensity, Frequency and Duration (IFDs) due to climate change. The ability to retrofit large conveyance systems or retarding basins in these densely settled areas is almost impossible and prohibitively expensive, so great care needs to be taken in avoiding potential upstream increases in runoff.
- Integrated Water Management (IWM), including the requirement to that the Fraction Imperviousness of the catchments are maintained at historical levels and that onsite retention capacities are included in intensification developments
- Revegetation across catchments
- Planning for more public lands
- Understanding the soil profile and capacity to retain water, and then increasing soil and landscape interventions to retain water and reduce flash flooding.

RECOMMENDATION 30: Improve Environmental Assessments and Site Selection for Energy Projects

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"Reform environmental assessments and help energy project proponents select good sites."

This is especially relevant for waterways. *The Dammed Future of the Moorabool River* (People for A Living Moorabool, 2023) documented the construction of large dams by wind farm developers to extract hardstand material. These dams capture runoff and reduce flows in Victoria's most stressed river system. This practice must be addressed through restrictions on windfarm operators, more robust environmental assessments and stricter controls on dam construction.

Finally, we support the observation in the strategy document (p. 86) that many Victorians do not yet fully understand the pressures on water resources and the need for greater education and engagement. This is a critical gap. Public understanding and support will be essential to secure investment in smarter water management solutions and avoid worsening degradation of our waterways under climate change.

Conclusion

We thank Infrastructure Victoria for elevating the conversation around climate-resilient water infrastructure and the future of potable reuse. These discussions are vital, not only for future water security but for the survival of Victoria's rivers as living entities.

We urge you to more explicitly connect the dots between urban water cycles, wastewater infrastructure, and the ecological integrity of our rivers. A truly integrated water management approach must not only create new sources,it must also relieve pressure on the natural systems that have borne the brunt of extraction and pollution for too long.

The Concerned Waterways Alliance looks forward to ongoing engagement on these issues and will continue to advocate for infrastructure decisions that protect and restore our most vital ecosystems.

28 April 2025

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Members of the Concerned Waterways Alliance include Friends of the Barwon, Friends of Latrobe Water, Environment Victoria, Environmental Justice Australia, First Friends of Dandenong Creek, Friends of Gippsland Lakes, Friends of Steele Creek, Gippsland Environment Group, Kooyongkoot Alliance, Maribyrnong Rivers and Waterways Association, People for a Living Moorabool, The Waterways Network, Werribee River Association, Yarra River Keeper Association