WATER SERVICES
ASSOCIATION OF AUSTRALIA

11 August 2021

Susan Lengyel
Senior Policy Officer, Alternative Water I Reform Projects I Catchments, Waterways, Cities and Towns
E: susan.lengyel@delwp.vic.gov.au

Re: MUSIA review of stormwater arrangements in Melbourne

Dear Susan,

We are pleased to have the opportunity to participate in the review of the Melbourne Urban Stormwater Institutional Arrangements (MUSIA), being led by the Department of Environment, Land, Water and Planning (DELWP) and partners Melbourne Water (MW) and the Municipal Association of Victoria (MAV) (ie, Melbourne local councils).

The Water Services Association of Australia is the peak industry body representing the urban water industry in Australia. Our members are water utilities and councils who provide water and sewerage services to over 24 million customers in Australia and New Zealand. Based around our vision of 'customer driven, enriching life' WSAA facilitates collaboration, knowledge sharing, networking and cooperation within the urban water industry.

We are proud of the collegiate attitude of our members which has led to industry-wide approaches to national water issues. We feel that the water industry is uniquely positioned to improve the liveability of our places, and the resilience of our communities and the environment, all while supporting adaptation to a changing climate.

This review provides a critical opportunity to address a complex issue that has been identified as important for a long time. We commend all involved in the review for tackling it. We are confident that it will produce worthwhile long term outcomes.

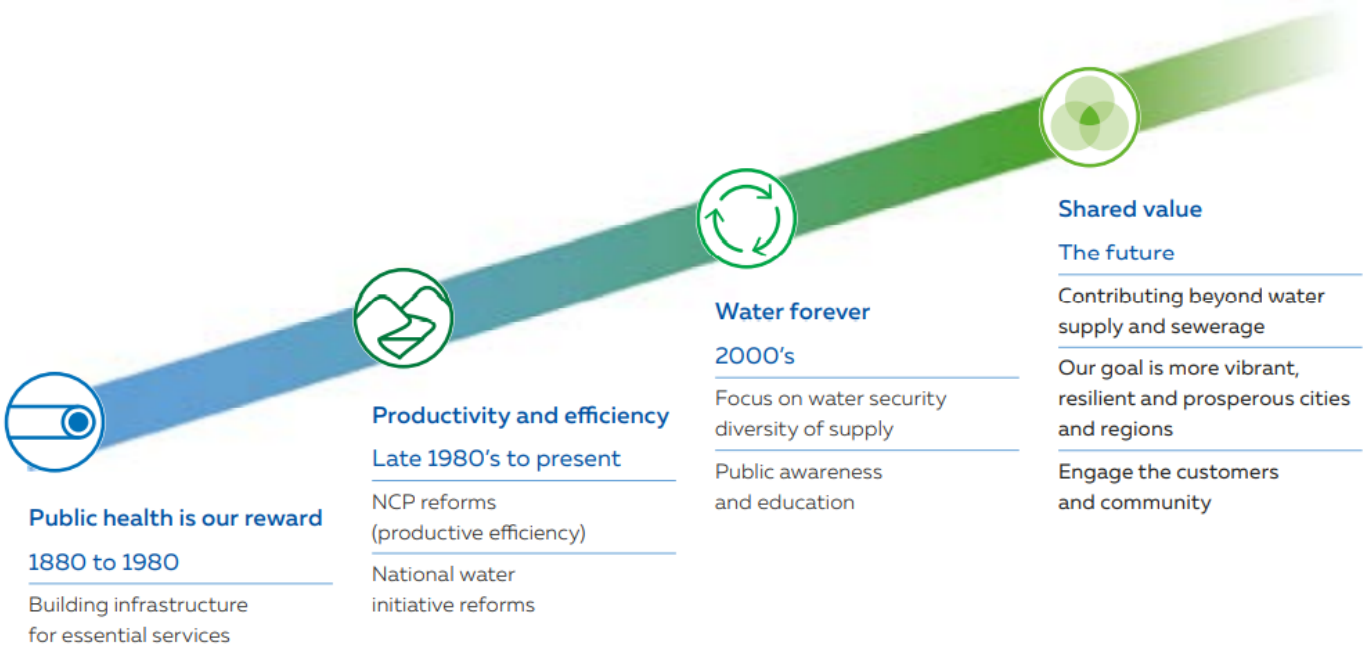
The water industry's historical context

Many Australian cities were designed around two hundred years ago, in keeping with the recognised water servicing arrangements of early colonial eras. In those times, one of the most important achievements was to separate the transport and distribution of drinking water, wastewater and stormwater. This was done to separate drinking water which was relatively clean, from other types of water that were used as part of sanitation (wastewater) or could be impacted by their exposure to the environment (stormwater).

That was, at the time, a great step forward in terms of public health. Since there was little actual treatment of drinking water, separating the source water from used water was key, as contact between the different types of water could lead to spread of waterborne illness.

Over the centuries however, the way we seek to provide and use water within our cities has revolutionised. Today's engineering practices, water treatment and scientific knowledge are very different. It has long been recognised that if we were to design cities today, we would not do so in the same way as in our colonial past.

Figure 1: The next era for the water industry

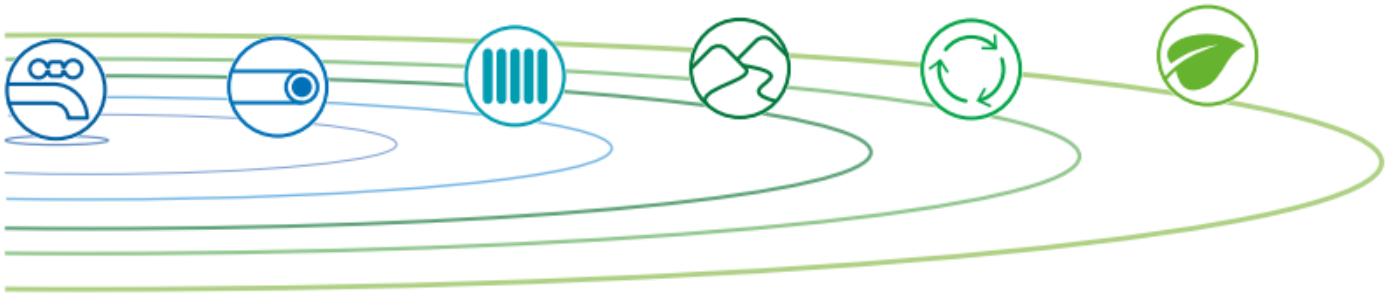


Next Gen Urban Water: The role of urban water in vibrant and prosperous communities. WSAA, 2017, p6

Nonetheless, the original institutional arrangements are generally still in place. It is often acknowledged that having divided institutional responsibilities for drinking water, wastewater and stormwater among different entities (such as water utilities and councils) can inhibit delivering desired outcomes.

The outcomes these water assets can provide are wide ranging. These days we look to water infrastructure to provide more than the basic services of safe drinking water, sanitation and flood protection. 'Onewater' concepts – which recognise that all forms of water are simply water, which can be treated and used more than once – can lead to valuable liveability outcomes like greening, cooling, well irrigated public places, regenerated erosion and water quality protection. We now know that stormwater in particular can play a great role in achieving these outcomes.

Figure 2: Illustration of the relationships between city states and societal urban water needs (Johnstone et al, 2012)



Water supply city	Sewered city	Drained city	Waterways city	Water cycle city	Water-sensitive city
Water for potable use	Wastewater management	Stormwater disposal	Stormwater hydrology and quality	Total water cycle management	Thermal comfort
Water for non-potable use		Pluvial flood risk reduction	Improved habitat	Integrated water systems	Identity and vision
			Ecological health		New hydro-social contract
			Places for social interaction		Engagement
			Recreational opportunities		Inter-generational equity
			Aesthetic (beauty)		

Existence	Relatedness	Growth
Secure water supplies	Recreation	Achievement
Public health	Social cohesion	Identity
Public safety	Beauty	Purpose
Property protection	Comfort	Control and independence
Economic activity	Ecological health	Equity and social justice
		Intergenerational equity

Next Gen Urban Water: The role of urban water in vibrant and prosperous communities. WSAA, 2017, p14

The challenge of moving past legacy arrangements

Working out how to enable these valuable outcomes, is often discussed within the water industry. Across Australia, there are ad-hoc examples[1] of innovative approaches to the design and ownership of stormwater assets or outcomes, that lead to fantastic projects which are valued by the community. But enabling these outcomes on a more systemic scale is still quite hard, partly due to lack of clarity and consistency around who owns particular assets or delivery of outcomes.

[1] For a list of case studies see p6 and Appendix 1 of WSAA's Next Gen report.

Melbourne can be rightly proud of some shining examples of attractive, environmentally beneficial stormwater projects that are contributing to a more liveable Melbourne:

- Greening the Pipeline
- Greening the West.

It is true that these have come about under the current institutional arrangements, through a collaborative approach. However, they require a significant investment of time, resources and an open attitude among many stakeholders to working across geographical boundaries and embracing new arrangements for investing in creating and managing assets. So, while a collaborative approach can work, without significant commitment, such approaches often fall in the 'too hard basket'. Currently these projects are the exception, and they don't occur without individual champions who need a lot of persistence to overcome institutional hurdles.

Whereas if a generational change in institutional arrangements can be made once, it will be easier for opportunities like Greening the Pipeline and Greening the West to become business as usual, rather than the exception.

Sydney, Australia is in a similar situation. Reviews over many years, consistently identify fragmentation of stormwater ownership/administrative arrangements as a key barrier to unlocking benefits from integrated water cycle management and water sensitive urban design. The reviews often come to the conclusion that better outcomes could be achieved if we were to 'take a blank page' and work out how best to design water servicing arrangements for cities from the outset.

This would mean setting aside the question of 'what rules are in place now' and instead, considering how best to design our places, using today's knowledge, practices, growth projections and awareness of the need for resilience to the impacts of climate change, flooding, heat island and other challenges. And then, working out how to update the institutional arrangements accordingly.

It is often noted that optimal stormwater design takes a whole of catchment perspective. Local government area boundaries are usually not the same as hydrological or catchment boundaries. Planning services across a broader geographic area, may lead to doing things in a different way, and potentially get better outcomes through integration, economies of scale, and planning with the natural features of the area in mind. For example, if there is a natural stormwater catchment that crosses three local government areas, there may be opportunities to plan flood mitigation in a holistic way that is sensitive to and utilises those geographic features. This may reduce costs too.

Capturing such opportunities seems common sense, but can be quite challenging to implement when responsibilities are allocated along delineations like the 60 hectare rule, or the geographic boundaries of local government areas. Even where there is goodwill and alignment on objectives, different entities have separate governance structures, budgets, priorities and personnel. When the legislative framework isn't set up to easily enable such approaches, opportunities can be missed.

Sydney Office
Level 9 | 420 George Street | Sydney | NSW | 2000
GPO Box 915 | Sydney | NSW | 2001
P +61 (0) 3 8605 7666

Melbourne Office
Level 8 | Suite 8.02 | 401 Docklands Drive |
Docklands | VIC | 3008
P +61 (0) 3 8605 7666

WATER SERVICES
ASSOCIATION OF AUSTRALIA

The Productivity Commission highlighted some of the challenges in its 2020 report, *Integrated Urban Water Management — Why a good idea seems hard to implement*:

- **Roles and responsibilities for providing enhanced amenity are unclear:** In some areas, urban water utilities have been pushing the boundaries of their mandated roles and obligations. They have been showing, through pilot projects and partnerships with local governments, the feasibility and benefits of alternative IWCM approaches in providing enhanced amenity. (p2)
- **Statutory land planning and water planning are not well linked:** At the city scale, this could influence the urban form and the area, type, quality and connectivity of public open space and urban habitat to make best use of water flows within catchments. (p3)
- **Stormwater planning and management is not integrated into general water planning:** stormwater management in major cities is generally undertaken by local governments, while water utilities supply water and undertake wastewater management. This gives rise to very different management arrangements across these elements of the urban water cycle. Stormwater management was not part of past COAG water reforms, and is not subject to the same level of detailed, consistent policy direction and economic and environmental regulation as other parts of the urban water sector. These factors have acted to effectively silo these functions. Despite tentative steps to break down these silos in different jurisdictions, nothing systematic is in place. (p3)
- **There are barriers to effective collaboration:** Many IWCM projects are at the boundaries of water utility or local government roles and it is not always clear which entity should lead. Implementing IWCM may require better on-ground arrangements between organisations covering operational decision-making, risk sharing, land management and project governance, with agreed accountabilities for monitoring, ongoing maintenance and stakeholder engagement. There are examples of IWCM projects that have floundered because these implementation arrangements were not sufficiently considered at the outset and were not able to be agreed to later. (p4)
- **Current arrangements can impede the delivery of an integrated approach: While** the concept of IWCM is generally supported by all governments at a broad policy level (chapter 2), water service providers and industry experts are united in the view that the current operating arrangements do not enable an integrated approach to the management of water supply, wastewater and stormwater to be properly taken (WSAA 2017a, pp. 22–24). Their concern is that, as investment continues to occur, opportunities to provide enhanced community benefits are being lost. (p25)
- …the provision of water supply and wastewater management is largely siloed from the provision of stormwater services and the policy and regulatory frameworks governing them are completely different. (p27)

Sydney Office
Level 9 | 420 George Street | Sydney | NSW | 2000
GPO Box 915 | Sydney | NSW | 2001
P +61 (0) 3 8605 7666

Melbourne Office
Level 8 | Suite 8.02 | 401 Docklands Drive |
Docklands | VIC | 3008
P +61 (0) 3 8605 7666

Making change a reality

Clearly, making changes that are worthwhile in the long term, is not a quick and easy task. It takes effort to look at arrangements and reimagine them in a way that will optimise outcomes for present and future communities. Many reviews have tried to progress this. What seems to be strongly recognised as 'worth doing', often falls into inaction at the 'how to implement' stage. Sadly, many reviews make good recommendations but trigger little actual progress in grappling with these complex problems.

Moving forwards will require time, addressing complex issues rooted in historical documentation and allocation of responsibilities, and it will require multiple stakeholders to take a holistic view of the best interests of the city, with openness to potential significant change if this is warranted. We note that the Melbourne water retailers do not appear to be part of the current review, and we urge their inclusion. They have been part of many great stormwater projects to date and will add valuable insights, knowledge and ideas to this review.

The importance of the involvement of Melbourne water retailers is highlighted by Melbourne Water's Healthy Waterways Strategy and the EPA's urban stormwater management guidance (Publication 1739.1). These guidance documents provide stormwater harvesting and infiltration targets for new developments across Melbourne.

Retailers are expected to play a key role in planning for stormwater reuse, and even delivering infrastructure and supplying harvested stormwater to end users, in pursuit of these targets. To play the best supporting role in achieving the objectives of the EPA guidance, and the Healthy Waterways Strategy which also includes harvesting and infiltration, the retailers should be engaged in the review process.

Any city that can put in the hard work needed, will make a generational step forward that will set it up for the future. It can then move forward from a contemporary standpoint, able to take advantage of opportunities for better service provision on a more systematic and less ad-hoc basis. This can lead to outcomes like:

- Greater liveability (attractive places to live, work and spend time in, that deliver more than minimum outcomes such as flood prevention)
- Flow-on benefits to public health, and mental health – WSAA's Blue + green = liveability report quantified the economic value provided by water. Residents gain an estimated $94/year value from liveability features, in addition to public health and tourism benefits
- Integrated water management opportunities being easier to identify in the first place, and then attract funding, and implement
- These outcomes will better reflect modern expectations from communities of sustainable services and urban development, which in turn affects property values
- Increased tourism attraction for sites with attractive blue and green features and landscapes
- Ensure consistent approaches to respecting and preserving areas of cultural heritage, management of sensitive waterways and land, development approvals, weed and vegetation management, and consistent levels of service
- Resilience to climate change, flooding, urban heat island, and other aspects.

Sydney Office
Level 9 | 420 George Street | Sydney | NSW | 2000
GPO Box 915 | Sydney | NSW | 2001
P +61 (0) 3 8605 7666

Melbourne Office
Level 8 | Suite 8.02 | 401 Docklands Drive |
Docklands | VIC | 3008
P +61 (0) 3 8605 7666

National advocacy on clarifying stormwater roles

At a national level WSAA has recommended that all states and territories commit to a new National Water Initiative (NWI) to assist the urban water sector to deliver water security and healthy, liveable communities for its customers, in the face of challenges including population growth and climate change. WSAA has long advocated that integrating stormwater into the urban water cycle is fundamental to good water security and liveability outcomes, yet, as noted above, success on this front is characterised by ad hoc collaboration rather than a systematic approach.

Given the widely disparate institutional arrangements more urgency is now required to bring stormwater into the urban water portfolio. In our submission to the Productivity Commission's 2020 Inquiry into National Water Reform we included this recommendation for stormwater:

> *Recommendation 6*
>
> *That stormwater be fully incorporated into the new NWI, reflecting that little progress that has been made in managing this important and valuable area. Consideration should be given to the development of single waterway managers with responsibilities to include stormwater in the water security and liveability outcomes being sought.*

Across Australia, current institutional arrangements have resulted in complicated governance arrangements where no one party has full responsibility for managing all aspects of the urban water cycle. A number of organisations are involved in decision-making for the urban water cycle, including water utilities, local governments, stormwater managers and urban land use planning authorities. Clearer governance principles that confirm roles and responsibilities and collaborative frameworks would assist in improving liveability outcomes.

The Federal Government will respond to the Productivity Commission's Final Report in the coming months. Regardless, WSAA will continue to advocate for improved institutional arrangements for stormwater for the benefit of all communities.

Consideration of the options

WSAA has considered the MUSIA options in light of the dialogues we hear in different parts of Australia, in which many cities are trying to break through legacy structural arrangements to enable better outcomes in future.

It is difficult for WSAA to express a clear preference for one of the outcomes, having not been involved in the detailed workshops. Overall, we see benefit in options that give:

- more clarity and certainty on responsibilities, from the outset
- clarity and certainty on when and how exceptions from the default arrangements could be sought
- greater ability to adopt integrated or water sensitive urban design approaches that can produce liveability outcomes.

We note that:

Option 1 in its currently drafted form, seems to represent a slight improvement in clarity and certainty, from the current situation. However, it was designed in a different era and may not be entirely fit for purpose to capture today's opportunities, particularly in relation to stormwater harvesting and integrated water cycle management across multiple jurisdictions, particularly in new developments or redevelopments.

Sydney Office
Level 9 | 420 George Street | Sydney | NSW | 2000
GPO Box 915 | Sydney | NSW | 2001
P +61 (0) 3 8605 7666

Melbourne Office
Level 8 | Suite 8.02 | 401 Docklands Drive |
Docklands | VIC | 3008
P +61 (0) 3 8605 7666

Option 2 seems to replace the existing delineation with another delineation, based on asset size and class. Again, this adds slightly to certainty and clarify but it is not clear whether this would make it any easier to systemically capture opportunities for stormwater harvesting, integrated water cycle management across multiple jurisdictions, or other liveability outcomes.

Option 3 seems conceptually closest to modern best practice, as it allocates assets to whichever entity is best placed to deliver beneficial outcomes via those assets. However, in practice, assessing the best owner on a case-by-case basis may not be optimal as it leaves participants across the industry without clarity or certainty about who to liaise with in the first instance. To give liveability outcomes a chance of becoming more 'business as usual' than they are now, people need to know who to liaise with. The rules, triggers and thresholds need to fleshed out; to be set and communicated in advance, and pathways for pursuing them, and criteria for decisions, well communicated and understood by all parties including developers.

In its currently drafted form, Option 3 may not give greater certainty and clarity. But if the detailed work to establish triggers, thresholds and decision-making processes and criteria can be done, working with all relevant parties including the water retailers, Option 3 could be a positive way forward. While it would be time-consuming, it represents an opportunity to resolve lingering issues and set Melbourne up for a future of beneficial outcomes from water assets.

There is an interesting case study for integrated urban water and stormwater management arising in Sydney at the moment. As part of developing the Western Parkland City (home to the new aerotropolis), in a precinct called Mamre Road, Sydney Water has worked work Councils to develop a consensus proposal whereby Sydney Water will be the waterway manager instead of the local Councils. In this case Sydney Water has proposes to take on the stormwater responsibilities that would normally sit with the various Councils.

A one-pager about this precinct is attached. Sydney Water has indicated they would be happy to outline the Mamre Road plans on a virtual call with those involved in this review, as an information-sharing exercise. We will follow up in a couple of weeks to see if this is of interest.

Once again, WSAA commends the Municipal Association of Victoria for bringing forward this proposal. We encourage all involved to take a 'blank page' approach, ie identify what outcomes are desirable, and the arrangements that would best enable them; and then work out how to overcome any institutional constraints. Such an approach would encourage a solutions-focus and help to put in place institutional arrangements that can enable Melbourne to lead the way in stormwater management, liveability and sustainable urban design.

We thank you for the opportunity to contribute to this worthwhile review. Please contact me if you would like any further information, on adam.lovell@wsaa.asn.au or 0417211319.

Kind regards

Adam Lovell
Executive Director
Water Services Association of Australia

Sydney Office
Level 9 | 420 George Street | Sydney | NSW | 2000
GPO Box 915 | Sydney | NSW | 2001
P +61 (0) 3 8605 7666

Melbourne Office
Level 8 | Suite 8.02 | 401 Docklands Drive |
Docklands | VIC | 3008
P +61 (0) 3 8605 7666

Excerpt's from WSAA's [Blue + Green = Liveability report](), 2019

The urban water industry contributes

Key services

$135/person The benefits of providing safe drinking water per year[2]

$446 million The broader value to society of Yarra Valley Water providing essential water and wastewater services to 1.8 million Melburnians (2014-15)[3]

Opportunities for active, healthy lifestyles and promotes walking and cycling and access to nature and open space

≤$94/person Liveability-related benefits per person per year attributable to integrated water management[4]

- **≤$28** Benefits from increased activity
- **≤$48** Increased well being from exposure to green space
- **≤$14** Benefits from reduced urban temperatures
- **≤$4** Benefits from increased air quality

31% Lower odds of developing psychological distress for Australian adults with 30% or more of their neighbourhood covered in some form of tree canopy[5]

£950 million London residents avoid in health costs per year due to public parks[6]

- **£580 million** Physical health costs
- **£370 million** Mental health costs

2 Tooth, R and Zhang, H. (2018). 'Benefits of water quality in Sydney'. Sapere Research Group prepared for the Independent Pricing and Regulatory Tribunal of New South Wales. 11 October 2018
3 Pamminger, F., Sukhdev, P. and Baldock, C., (2017), A new way to measure the value a company creates, Water e-journal, Vol. 2(3)
4 Water Services Association of Australia (2019), Health benefits from Water Centric Liveable Communities.
5 Astell-Burt, T. and Feng, X. (2019), Association of Urban Green Space with Mental Health and General Health Among Adults in Australia. JAMA Netw. Open, 2(7):e198209.
6 Vivid Economics (2017), Natural capital accounts for public greenspace in London, report perpared for Greater London Authority, National Trust and Heritage Lottery Fund

Continues to focus on resilience to climate change and future challenges and shocks

$30 billion Value the urban water utilities across Australia invested to diversify and secure water supplies for the future in response to the Millennium Drought.

$1.8 billion Economic cost to Melbourne community due to hot weather. Of this, urban heat island effect contributes about $300 million in present value terms.[7]

A combination of water, greenery and cool materials in western Sydney[8] can lead to

-2.5°C Reduction in average peak ambient temperature

-5% Reduction in peak energy demand

Protects environmental values and biodiversity by supporting clean, healthy beaches and waterways with community and ecosystem benefits

The value of Sydney beaches[9]

$137 million Value of coastal beach water quality per year for Sydney residents

$332 million Value to the economy due to tourism

Rehabilitating a constructed waterway in an area lacking open space can provide[10]

$75,000 Public benefits of avoided health costs per annum

$3.9 million Private benefits

Supports economic development

0.75% Value of Australia's Gross Domestic Product (GDP) the urban water industry directly accounts for[11]

30x Annual revenue generated by urban water in Australia is 30 times more than rural water[12]

7 AECOM (2012). Economic Assessment of the Urban Heat Island Effect, prepared for City of Melbourne.
8 Sydney Water Corporation (2017), Cooling Western Sydney. A strategic study on the role of water in mitigating urban heat in Western Sydney.
9 Deloitte Access Economics (2016), Economic and social value of improved water quality at Sydney's coastal beaches
10 Mekala, G.D., et al. (2015). Valuing the benefits of creek rehabilitation: building a business case for public investments in urban green infrastructure, Environmental management 55(6): 1354-1365.
11 Water Services Association of Australia and Infrastructure Partnerships Australia (2015), Doing the important, as well as the urgent: Reforming the urban water sector, Sydney.
12 Water Services Association of Australia and Infrastructure Partnerships Australia (2015), Doing the important, as well as the urgent: Reforming the urban water sector, Sydney.

Mamre Road Precinct Integrated Water Service Planning

The Mamre Precinct is located approximately 40 km west of the Sydney CBD in the Western Sydney Aerotropolis Growth Area and is expected to support employment numbers of 16,000 by 2041. Sydney Water has completed planning for Mamre that has looked at innovative options for integrated water cycle management (IWCM). This approach supports the Western Parkland City's vision of water supply in ensuring liveability including cooling and greening for western Sydney. A key focus of our work has been exploring better integration of all servicing options and included:

- Consideration of growth and market drivers, balancing the need for essential and innovative supply options
- Comparison of on-lot and precinct scale stormwater management options with treated stormwater blended with recycled water for non-potable use, including collaboration that would be required to deliver IWCM across multiple accountable parties.
- Identifying the role for alternative non-drinking water supplies for greening
- Embedded circular economy thinking, and consideration of the potential of purified recycled water supporting the bulk water system in the future.
- Finding better funding opportunities based on economic analysis that considered financial and non-financial benefits of options considered.

Sydney Water delivered this planning through an adaptive, agile approach with constantly evolving intelligence. Engagement with the Department of Planning, Industry and Environment, local Councils and the development community has been overwhelmingly positive, and we are currently proposing a precinct scale IWCM option that integrates stormwater and recycled water using three combined storages.