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Development of a Local Government engagement package

Engagement Plan

Prepared by Urbaqua

For: Water Sensitive Cities Australia

November 2023



wscaustralia.org.au

Development of a Local Government engagement package Engagement Plan

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1 INTRODUCTION

This Engagement Plan aims to support the building of knowledge and support of water sensitive cities principles and practices among local governments, with specific focus on Elected Members (Councillors) and senior executives in Western Australia.

It is to be used by any engagement professionals and/or water sensitive city (WSC) practitioners including any members of the Perth Water Sensitive Transition Network, consistent with its intent.

Key aspects of this engagement plan are:

- Desired outcomes
- Target audience
- Key messages
- Communication channels
- Suggested program
- Evaluation.

1.1 Desired outcome

This program seeks to increase awareness across local government senior executives and Councillors of WSC principles and practices to achieve the following outcomes:

- Increased awareness and understanding of benefits of WSC practices for the organisation and the community
- An organisational culture that embraces the inclusion of WSC practices at all levels of planning and delivery
- Greater uptake of WSC practices in asset renewal and capital works projects
- Stronger advocacy for WSC performance-based planning and development outcomes
- Greater budget allocations for maintenance of WSC assets.

1.2 Plan preparation

Development of this engagement plan has been underpinned by input from the Project Steering Group as well as feedback from Local Government stakeholders via survey and from an in-person event, as well as the findings of the context analysis which outlined current local government capacity building activities in WA, and support for water sensitive cities principles and practices.

Thanks to the insight provided by the project steering group (PSG):

- Cr Peter Devereaux, Town of Victoria Park
- Rachel Williams, City of Canning
- Jade Mains and Niki Curtis, Western Australian Local Government Association
- Jeremy Maher and Antonietta Torre, Water Corporation
- Emma Monk, Department of Biodiversity, Conservation and Attractions
- Adele Gismondi, Department of Water and Environmental Regulation
- Chris Manning, Water Sensitive Cities Australia.

2 TARGET AUDIENCE

The target audience of this engagement plan are local government Councillors and senior executives in Western Australia. This generally includes:

1. Mayors and Councillors
2. CEOs
3. Directors of Infrastructure (Facilities, parks, drainage, waste)
4. Directors of Development (planning, compliance)
5. Directors of Community (safety, risk, community development)
6. Directors of Corporate Services (HR, Legal, finance, IT).

The following target audience characteristics are considered relevant to the development and delivery of the program:

- Local governments have a vested interest in creating sustainable and resilient communities.
- Many areas of local government decision making are generally not associated with water or the need to consider water resources.
- Existing training for Councillors is largely focussed on operations and procedures which ensure appropriate levels of transparency and accountability for decision making (rather than on content/topics).
- Councillors and senior executives may not possess specialist knowledge that would support delivery of water sensitive cities principles and practices.
- As potable water is planned for and supplied by the Water Corporation, water supply is generally not considered by local governments. In addition, the Government's commitment to the next desalination plant at Alkimos has relieved concerns regarding future drinking water supply. Accordingly, the management of water is generally not considered to be a local government priority. However, there is increasing awareness of limitations to the availability of groundwater resources for irrigation of open space.
- As sewerage services are planned for and provided by the Water Corporation, wastewater is generally not considered by local governments. A greater level of awareness may be found in local governments with unsewered industrial and peri-urban areas.

While the main area of focus is Perth and Peel, opportunities will also be identified for regional towns in the south and regional towns in the north, recognising the different environmental context of these regions. The Perth and Peel region includes the 33 local governments of:

- Armadale (C)
- Bassendean (T)
- Bayswater (C)
- Belmont (C)
- Cambridge (T)
- Canning (C)
- Claremont (T)
- Cockburn (C)
- Cottesloe (T)
- East Fremantle (T)
- Fremantle (C)
- Gosnells (C)
- Joondalup (C)
- Kalamunda (C)
- Kwinana (C)
- Mandurah (C)
- Melville (C)
- Mosman Park (T)
- Mundaring (S)
- Murray (S)
- Nedlands (C)
- Peppermint Grove (S)
- Perth (C)
- Rockingham (C)
- Serpentine-Jarrahdale (S)
- South Perth (C)
- Stirling (C)
- Subiaco (C)
- Swan (C)
- Victoria Park (T)
- Vincent (C)
- Wanneroo (C)
- Waroona (S).

C = City; S = Shire; T = Town

3 KEY MESSAGES

The key messages are intended to provide an evidence base for including water sensitive city actions and outcomes in business cases, policy, infrastructure investment and planning decision making by Local Government Councillors and senior executives.

The information is intended to provide an introductory level of WSC knowledge relevant to a range of disciplines, to provide senior executives and Councillors with sufficient knowledge to consider water as part of their decision making. They are not intended to replace specialist technical knowledge and should not be used in place of technical studies where these are required to provide local context to support site responsive solutions. Importantly, effective decision makers require a range of other expertise, including management skills to effectively deliver outcomes and outputs as well as influencing and change management (water leadership) skills.

The following key messages are proposed to support the delivery of the program outcomes. It is not anticipated that all messages would be used at one time; the choice of messages would align with the engagement opportunity.

3.1 The principles and practices of WSC

A water sensitive city is:

where communities care about and value water, while making best use of its various sources (groundwater, dams, stormwater, sea water and wastewater). The city serves as a catchment and provides healthy natural environments, supporting a range of cultural, social, ecological and economic benefits. A waterwise (water sensitive) community is sustainable over the long term, economically productive, highly liveable and resilient to extreme weather events. It is a vibrant community where our connection with water enhances our quality of life. By adopting waterwise (water sensitive) approaches, communities and the environment can become more climate resilient and make the Boorloo (Perth) and Bindjareb (Peel) region a sustainable and liveable place for future generations (Kep Katitjin – Gabi Kaadadjan, Government of WA, 2022).

Key outcomes are that:



Our city landscapes are liveable and adaptive



Our community values are supported



Our natural systems are healthy, and are resilient to climate change



Our water services are sustainable and efficient



We are collaborative, transparent and innovative

Principles of a water sensitive city

- Enhance community and system resilience, amenity and liveability.
- Mimic natural hydrological processes, using design based on local site conditions, and minimise changes to hydrology.
- Enhance natural systems, by managing, protecting and restoring wetlands and waterways.
- Provide protection from flooding in 1% annual exceedance probability (AEP) flood event and surface or groundwater inundation/waterlogging.
- Maximise water use efficiency and facilitate fit-for-purpose water sources including water reuse/recycling.
- Minimise pollution inputs and outputs in flows and in receiving environments.
- Create fit-for purpose, safe and sustainable water management systems that are integrated into the urban form.
- Enhance economic, social and cultural values of water resources and community water literacy.

Water sensitive urban design (WSUD) is a contemporary approach to managing the urban water cycle by integrating it into the natural and built landscape. It is a planning and design approach that incorporates the sustainable management and integration of stormwater, groundwater, wastewater and water supply into the built form to achieve water and environmental outcomes as well as aesthetic/urban amenity, liveability, and urban cooling outcomes.

Key water sensitive practices, often delivered through a commitment to WSUD include:

- retention of natural environmental features (landscape, vegetation, water, habitat)
- vegetated stormwater management infrastructure, such as kerb breaks, tree pits, raingardens, biofilters, swales, living streams, constructed wetlands
- permeable surfaces including deep soil areas and permeable paving
- green built form including green walls, roofs and facades
- multiple use public spaces that mitigate flood risks
- water conservation and efficiency, fit-for-purpose water use, water recycling and water reuse.

Local government activities and responsibilities provide many opportunities to deliver and support WSC outcomes.

Further, a lack of support for and implementation of water sensitive practices increases business risks for local governments:

- disruption of services from extreme events including flash flooding
- reduced access to water for irrigation of public areas
- economic and social impacts on the community from urban heat and reduced amenity
- reputational risks from reduced amenity and access to nature and green space
- costs associated with early replacement of infrastructure.

3.2 The benefits of WSC practices for local governments and the community

The benefits of WSC practices for local governments and the community include:



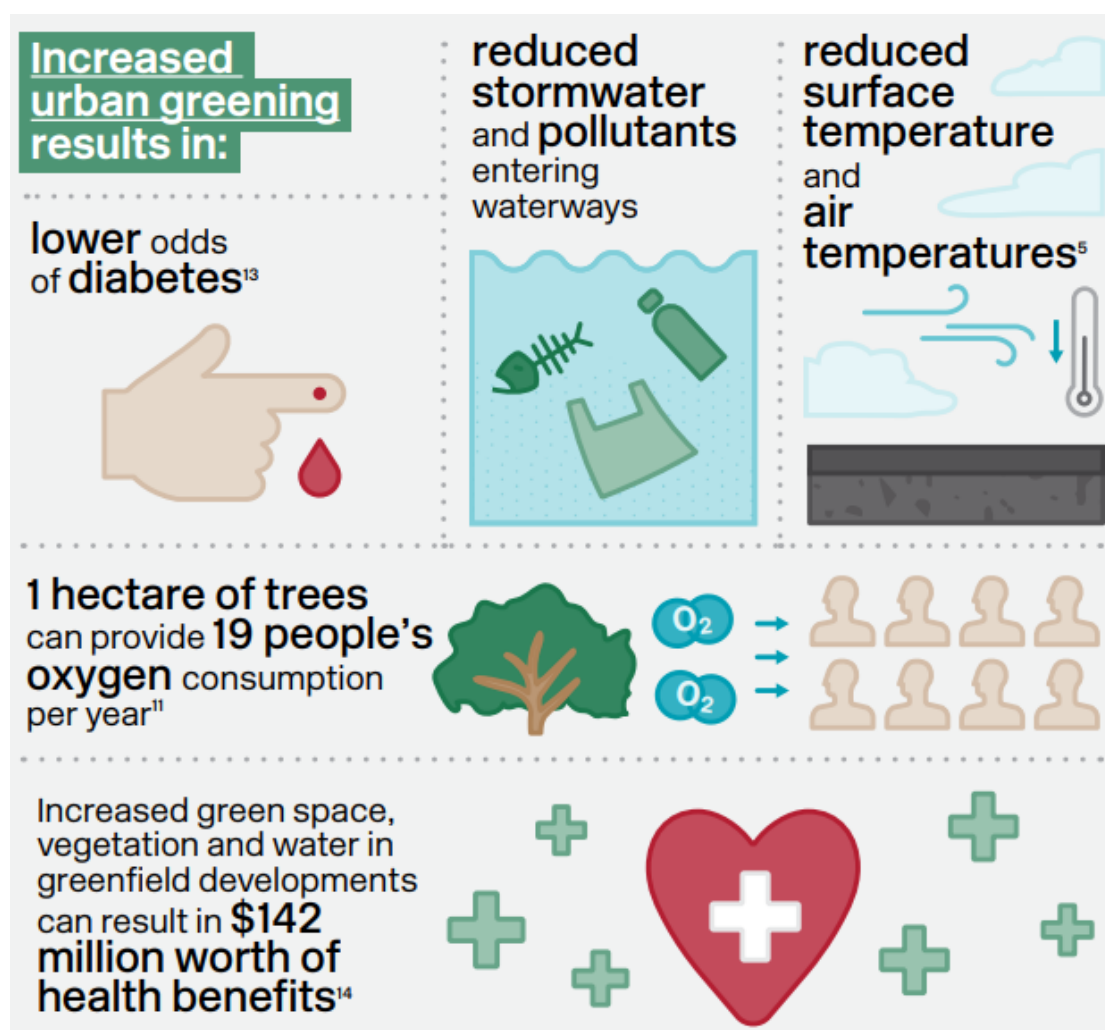
While not always obvious, access to and consideration of water is critical to achieving these benefits. Further, there are many interconnected relationships between the solutions and benefits; for example, trees provide shade, cooling and help water quality but we also need water to keep the trees alive, which may not be readily available or is considered more important to use for drinking water purposes only.

Research has quantified some of these benefits to the community:

- The median home within 200 m of an urban drainage restoration project in Perth (Bannister Creek) had increased in value by an additional \$12,053 to \$16,669 after 8 years. The study also found that the total benefit across all houses within 200 m of the project was more than enough to cover the cost of the restoration project (Polyakov et al, 2016).
- Street trees are beneficial in selling homes. The presence of trees on the street not only increases a home's sales price but reduces its time on the market (Donovan & Butry 2010). An assessment of 5606 single family homes sold in 2009 across 23 suburbs in Perth showed that large verge trees increase property value (+\$17,000)(Pandit et al, 2013).
- A one standard deviation increase in green infrastructure is associated with an increase in house prices of between AU\$37,019 and AU\$67,098 (Rossetti, 2013).
- A 1% increase in tree cover along the foot path, within 100 m of a property, results in an increase in property values of between 0.08% and 0.1% in Brisbane (Plant et al, 2017)
- A 10% increase in tree canopy cover on the adjacent public space was associated with an increase in property prices of approximately AU\$17,264 in Perth (Pandit et al, 2014).
- Households in Australian capital cities are willing to pay \$1,570 per annum for a 1% increase in public open space in their local area (Ambrey and Fleming, 2014).
- Those who perceived their neighbourhood as highly green had, respectively, a 1.4 and 1.6 times higher chance of having better physical and mental health compared with those who reported living in a neighbourhood with the lowest level of perceived greenness (Sugiyama et al, 2008).

- The presence of a rainwater tank on a property adds 0.04% to the median price of a typical house in Perth. This benefit is large enough to cover the total cost of installing and maintaining a tank (Zhang et al. 2015b).
- The potential benefits (including health benefits) of rehabilitating a 1.23 km stretch of upper Stony Creek in Melbourne are around \$77,000 per annum. The potential capitalised amenity benefit of the park was estimated at around \$4.03 million (Mekala et al, 2015).

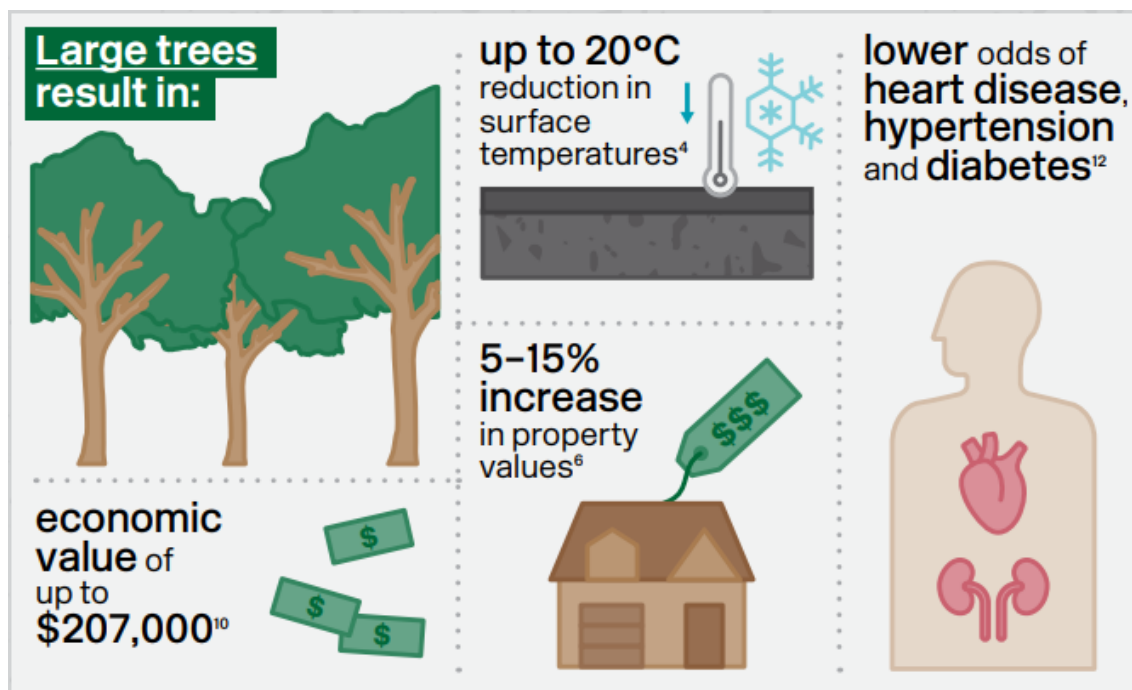
[Designing for a cool city](#) (CRCWSC, 2021) notes some additional benefits:



Research from the Cooperative Research Centre for Water Sensitive Cities (CRCWSC) also provides evidence of the cooling benefits and improved human thermal comfort derived from trees, irrigated turf, raingardens and water bodies:

- 10% increase in vegetation cover will decrease air temperature by about 0.2°C in a heatwave (Jacobs et al, 2017).
- 100% increase in vegetation cover will decrease air temperature by about 1.0°C in a heatwave (Jacobs et al, 2017).
- Air temperature will reduce by 1°C above and downwind of a wetland or waterway, by 1 x water body diameter width (Jacobs et al, 2017).
- Low to moderate irrigation of public open space/turf during a suburban heatwave can reduce air temperature by about 0.5°C (Broadbent, et al, 2017).
- Very heavy irrigation of public open space/turf during a suburban heatwave can reduce air temperature by about 2.5°C and surface temperature by up to 20°C (Broadbent, et al, 2014).

- Trees can lower the Urban Thermal Climate Index by up to 10°C, reducing heat stress from “very strong” to “strong”. Trees should be prioritised in wide, east–west oriented streets (Coutts, et al, 2014).
- Irrigating trees, including passive infiltration with stormwater runoff, can increase canopy cover by up to 80% (Hitchmough, 1994).



[Designing for a cool city](#) (CRCWSC, 2021),

3.3 Why local government culture should require WSC practices at all levels of planning and operation.

WSC practices result in clear environmental and social benefits to the community, clearly aligning with local government roles to provide services for the community and operate sustainably.

WSC outcomes are also generally strongly supported by the community and reflected in local government strategic community plans/council plans, which recognise the importance of the environment and the need for efficient and effective infrastructure and services. Adhering to WSC principles in day-to-day decision-making therefore help councils to successfully deliver commitments.

Importantly, a local government’s organisational culture must support implementation of actions that might not have the lowest financial cost where they benefit the environment and/or the community and align with WSC principles (and Strategic Community Plan goals). This requires WSC solutions to be seen as fundamental to the health and wellbeing of the community and the environment, rather than being a ‘nice to have’, ‘add on’ or unconventional solution. It can be achieved when senior management recognises ‘spending’ as an investment in the future of the community and local government. It is supported by increasing recognition of the economic value of the environment, as, according to the UN World Economic Forum, more than 50% of global Gross Domestic Product depends on nature (State of NSW, 2022).

In another example, the presence of quality trees encourages shoppers to spend more time at a business district, and they will travel a greater distance to visit that centre. Further, shopping areas with trees are more likely to be ranked as being more comfortable and having better upkeep, friendlier staff and higher quality products (Laverne & Winson-Geideman, 2003).

An organisational culture underpinned by Aboriginal values also supports WSC outcomes. In many instances, places of water including the groundwater are significant to Aboriginal culture and the commitment of Aboriginal people to being a custodian of Country supports local government investment in maintaining natural systems and processes.

Governments are moving towards greater transparency around environmental performance. For example, the Western Australian Government has committed to continuous improvement in environmental, social and governance (ESG) outcomes. Demonstrating progress towards ESG outcomes is attributed as the success factor behind the recent successful launch of the State's inaugural green bond – raising \$1.9 billion for eligible government projects that deliver environmental outcomes (Government of WA, 2023). Implementing WSC principles and practices aligns with government ESG outcomes and will help to deliver outcomes that can be reflected in ESG reporting.

Further, mandatory sustainability reporting is on the horizon, as the Commonwealth Government moves towards requiring listed companies to disclose climate related financial impacts (The Treasury, 2022). While this does not apply to local governments, it is likely other climate change-related reporting will be required in the near future, and tracking and reporting progress towards WSC goals will help.

Implementing WSC principles also supports delivery of the United Nations Sustainable Development Goals, particularly:

- Goal 6. Clean Water and Sanitation
- Goal 9. Industry, Innovation and Infrastructure
- Goal 11. Sustainable Cities and Communities
- Goal 12. Responsible Production and Consumption
- Goal 14. Life Below Water
- Goal 13. Climate Action
- Goal 15. Life on Land
- Goal 1. No Poverty

3.4 How WSC practices improve asset management

Local government has a substantial role to maintain and operate assets and services including roads (and road reserves), community facilities including public open space, and environmental health, drainage and waste management services. These roles provide significant opportunities to achieve WSC outcomes, such as:

- revitalising drainage infrastructure (pipes, channels, basins and/or sumps) to enhance biodiversity, provide additional areas of public open space and/or increase community access to nature
- enhancing streetscapes using passively watered trees or vegetation (tree pits and rain gardens connected to the stormwater system) that improves amenity and creates shade and cooling, improving community physical and mental health and wellbeing. These projects are generally focussed on activity centres or lower socio-economic areas to create nice places for people, but could also be driven by road upgrades, road re-surfacing, drainage upgrades or urban forestry projects.
- upgrading public open space - these projects are generally delivered by the asset management team in line with a scheduled program of upgrades and maintenance and provide an opportunity for water efficiency, water capture and reuse, greening, cooling and creation of habitat
- upgrading road and car park - these projects are generally delivered by the asset management team in line with a scheduled program of upgrades and maintenance and should all include

WSUD solutions (Table 1) to optimise the achievement of multiple benefits and outcomes. Carparks are one of the easiest spaces to implement WSUD due to the low traffic loads and generally limited conflict with underground services.

- improving drainage capacity and mitigating floods - these projects generally arise from the need to address drainage system capacity, maintenance issues or water quality issues and should increase catchment permeability (if appropriate) and incorporate vegetation where possible.
- upgrading or constructing building and facilities - these projects are generally delivered by the asset management team in line with a scheduled program of upgrades and maintenance.

Table 1: Opportunities for WSUD solutions by project opportunity type

	Rainwater capture/ reuse/ efficiency	Treepit/ raingarden	Biofilter	Swale	Dry detention basin	Infiltration/ retention basin	Constructed wetland / living stream	Permeable paving	Soakwells/ underground cells
Drainage upgrade	✓	✓	✓	✓	✓	✓	✓	✓	✓
Streetscape enhancement		✓	✓	✓				✓	✓
Road/car park upgrade		✓	✓	✓	✓			✓	✓
Building/ facilities upgrade	✓	✓	✓					✓	✓
POS upgrade	✓	✓	✓	✓	✓	✓	✓	✓	✓
New development (planning)(see next section)	✓	✓	✓	✓	✓	✓	✓	✓	✓

Some of these outcomes are substantiated by research papers or projects:

- Permeable paving and other WSUD practices can manage frequent rainfall events and mitigate local flood risks. Permeable pavement is an effective tool for hydrologic mitigation of storms from ‘every day events’ up to the 10-year, 24-h average recurrence interval or 10% AEP (Fassman & Blackburn, 2010).
- Using kerb breaks to passively water street trees reduces local flooding and improves tree growth and long term health (Grey et al, 2019). Irrigating trees, including passive infiltration with stormwater runoff, can increase canopy cover by up to 80% (Hitchmough, 1994). This reduces tree watering and maintenance costs.
- Infiltrations systems and permeable paving can help to keep trees healthy. Permeable paving with a gravel base deters tree root growth near the ground surface which reduces the risk of pavement heave, avoiding costly pavement repairs and associated trip hazards (Johnson et al, 2019).
- Case study: [Kegworth Road, Melrose Park](#) permeable paving project cost \$30,000 more than resurfacing the road with asphalt. The project cost \$200,000 in total, including permeable paving, leaky wells, and soakage and distributions systems in the nearby reserve. By

comparison, upgrading the conventional pit and pipe network to address a local flooding issue had an estimated cost of \$1.2 million (Johnson and King, 2020).

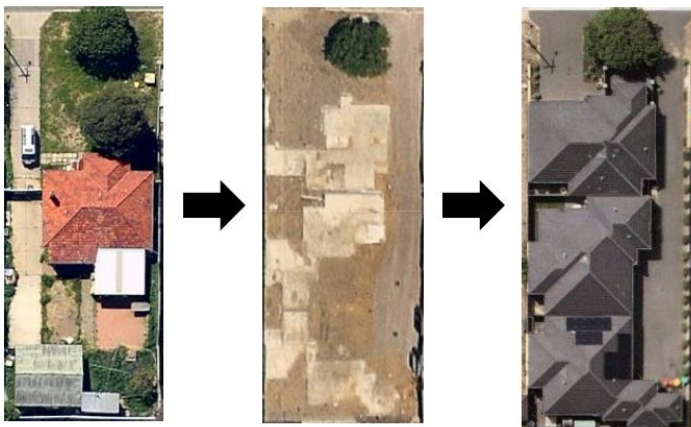
- Every dollar invested annually in tree planting and maintenance in 5 major cities generated a return of \$1.37–\$3.09, based on the benefit of trees (i.e. energy savings, atmospheric CO₂ reductions, stormwater runoff reductions, etc.) (McPherson and Muchnick, 2005).
- Trees can save money on road maintenance. The shade from trees can protect roadways, reducing the need for asphalt re-sealing over a 30-year period and saving money (McPherson and Muchnick, 2005).

3.5 WSC planning and development outcomes support resilient communities

The death toll from heatwaves in Australia has exceeded that for any other environmental disaster, including floods, bushfires and cyclones, and the same is true for Europe and the USA (Doctors for the Environment Australia). In Victoria, in early 2009 the heatwave that preceded the Black Saturday bushfires resulted in 374 more deaths than would otherwise be expected (excess deaths), while 173 people perished in the fires themselves (State of Victoria 2009).

There is increasing awareness that without significant intervention, 'business as usual' redevelopment will have a considerable negative influence on urban hydrology, resource efficiency, urban heat, liveability and amenity (London, et al, 2020a). Research for the WA Department of Planning, Lands and Heritage indicated that every new medium-density infill dwelling constructed using business-as-usual approaches imposes an additional \$1,460 per year in costs to the wider community (\$29,200 capitalised cost) (SGS, 2020).

poorly designed development comes at a cost...



Impact	Cost
Storm water runoff	\$4,400
Loss of private open space	\$5,800
Loss of trees	\$7,300
Active heating & cooling	\$600
Urban heat island effect	\$8,000
Embodied energy	\$1,600
Social isolation	\$1,500
TOTAL	\$29,200

Source: SGS Economics and Planning

Costs to the broader community is **\$29K**
 for every new business-as-usual dwelling
 over 20-year lifecycle or **\$1,460 / yr**
 Estimated cost to state **\$117M / yr**

We need urban landscapes that are cooler, greener and climate resilient. WSUD features such as raingardens, infiltrations systems, permeable paving, swales and wetlands can deliver these outcomes, sustain urban landscapes and enhance the overall liveability of communities. This need is recognised and required in some jurisdictions (e.g. the WA State Planning Policy 2.9: Planning for Water (draft, 2021) and the Design WA policy suite).

Good design that integrates stormwater and other green infrastructure into landscaped areas can address some of the challenges presented by increased density of housing from urban infill and is achievable and affordable. It also reduces house and property running costs. The estimated economic benefit of urban greening at a household level in Melbourne is estimated at just over \$1,500, with the majority of the benefit associated with improved resident health (decreased mortality) and reduced costs of electricity (Whiteoak and Saigar, 2019). In Perth, Duncan et al. (2019) investigated the relationship between urban vegetation types and land surface temperatures, finding on average, an approximate 1km² increase in shrub (tree) cover within a location reduces surface temperatures by 12°C.

There are also quantifiable benefits for the developer. The CRC for Water Sensitive Cities' *Infill typologies catalogue* (London, et. al. 2020b) demonstrated that taking a new approach to the built form for urban infill, can increase dwelling yield, while still maintaining urban green cover and stormwater runoff at existing levels. The Knutsford infill development case study (London, et. al., 2020c) estimated water sensitive infill development substantially reduces stormwater runoff while maintaining current infiltration levels (29–30% of rainfall). By comparison, business-as-usual infill increased stormwater runoff from 25% pre-(re)development to 62%. The benefit for the developer was achieved through the increased number of dwellings sold, as well as a slight premium in house prices for net zero energy dwellings and lifestyle, achieving a benefit-cost ratio of 1.49 (New WAter Ways, 2021).

Local government planning strategies, schemes and policies could consider opportunities to include incentives to deliver WSC outcomes beyond those required under current planning arrangements. Examples include relaxing a particular planning/design requirement or offering a bonus for implementing WSC principles and WSUD solutions such as retaining canopy trees, retaining locally important vegetation, revegetating wetlands and waterways, increasing landscape treatments (including green facades and roofs), installing rainwater tanks plumbed into toilets, using greywater systems, permeable paving and vegetated stormwater treatments, and creating additional public space. Additional benefits of WSC practices include the following:

- An appropriately sized rainwater tank could supply up to 20% of a household's total water needs in Perth (WA Government, 2020), delaying the costs of constructing new desalination plants.
- Access to high-quality green space also improves the physical and mental wellbeing of the community. Wood et al. (2012) investigated the relationship between POS attributes (i.e. quantity and quality) and better mental health (i.e. low risk of psychological distress) in residents of new housing developments in the Perth metropolitan area. They found:
 - Residents of neighbourhoods with high quality POS had higher odds of low psychosocial distress than residents of neighbourhoods with low quality POS, regardless of whether or not they used POS. However, the quantity of neighbourhood POS was not associated with low psychological distress.
 - Residents near medium- or high-quality POS have twice the odds of better mental health as those near low-quality POS.
 - POS quality appears to be more important for mental health than POS quantity. Residents may not need to use POS to benefit from it.

3.6 Maintaining WSC assets requires funding

The perceived increased cost of maintaining vegetated assets is often raised as a barrier to WSUD solutions. However, investigations by New WAter Ways in 2020 and 2021 found that while costs may be higher in the short term, the lifecycle costs of vegetated stormwater assets would likely be lower than conventional drainage assets (Figure 1). Further, this result did not account for other outcomes and non-monetary benefits.

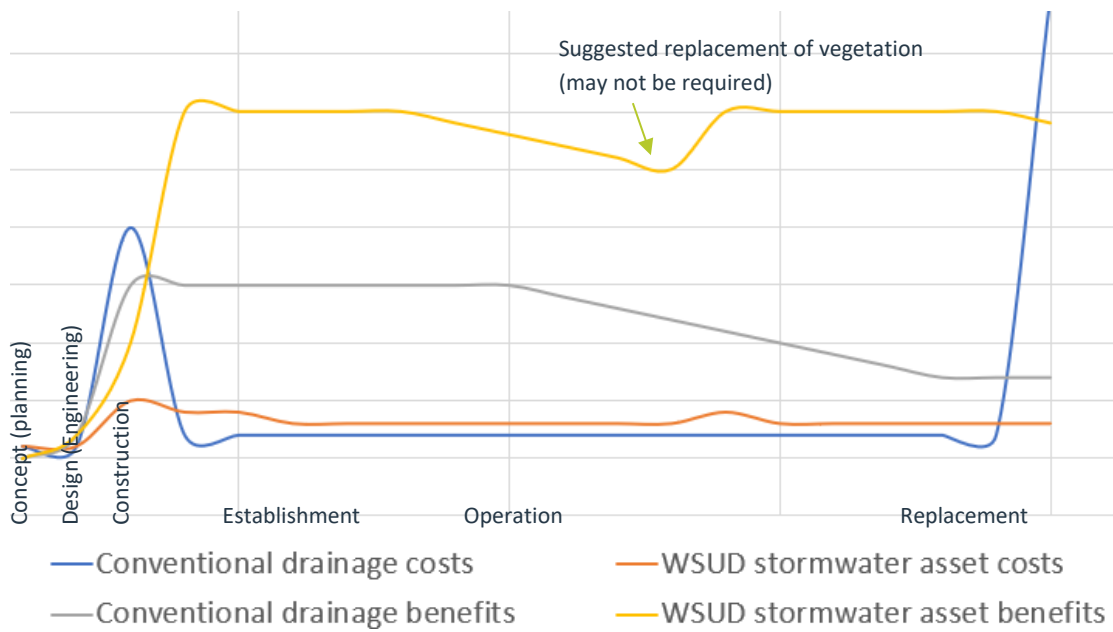


Figure 1: Indicative lifecycle costs and benefits of conventional drainage assets and WSUD stormwater assets (costs are not cumulative)

This research showed the costs of planning and designing both types of drainage systems are comparable. Construction costs of conventional systems at a catchment level are higher than vegetated assets, due to the large underground, concrete pipe and pit networks. Reducing this pipe network through on-site management and use of vegetated, surface systems (i.e. WSUD approaches) produces significant cost savings. However, the cost of constructing a living stream is greater than the cost of a piped solution when considered at an individual asset level (New Water Ways, 2020).

The operational costs of WSUD stormwater assets are perceived to be higher than conventional pit and pipe systems, largely reflecting the more regular requirements to remove litter and weed surface systems. However, New Water Ways (2020) found the costs may be more comparable. For example, the cost of cleaning pits at \$88 per pit per year, is comparable with the cost of 1m² of swale and a third of the cost of 1m² of biofilter per year (although it is recognised that this is not comparing ‘like with like’ costs as the number of assets will depend on catchment size and characteristics). The high cost of cleaning gross pollutant traps (GPTs) is noted, as is the cost of sump maintenance, although the significant cost occurs only every few years (New Water Ways, 2020).

The notable difference is associated with replacement costs. There are significant replacement costs associated with conventional systems (Figure 2) (although usually recognised as a 50-year cost); WSUD systems do not require complete replacement. This difference was highlighted by Indigo Shire in Victoria, in their drainage asset management plan (Figure 3).

Asset type	Quantity	Replacement cost as at 30 June 2018
Drainage pipes	740 km	\$292.5M
Drainage nodes, structures and gross pollutant traps (GPTs)	29,814 No.	\$155M
Sumps and underground tanks	217 No.	\$21.5M

Figure 2: Excerpt from City of Stirling Drainage Asset Management Plan 2019-2029

Drainage Asset	Quantity	Replacement Value 2011 (\$)
Pipes	60,439 m	9,401,983
Pits	1,859 no.	2,567,951
Inlets/ Outlets	468 no.	321,706
Open Channels	1,658 m	* n.a.
Storage Basins: Retention Basins	2 no.	* n.a.
Wetlands	3 no. (total 8 no. Ponds)	* n.a.
TOTAL		\$12,291,640

* These assets do not require periodic renewal (only maintenance) and have not been assessed for replacement value

Figure 3: Excerpt from Indigo Shire Drainage Asset Management Plan (2012)

Funding for WSUD-related projects is often limited, so the greatest opportunity to fund WSUD is through existing asset renewal and capital works budgets (see section 3.4).

Budget allocations to maintain vegetated stormwater assets and other WSUD solutions can be justified by the additional benefits of these assets (described in section 3.2) or the arguments that WSC principles support the strategic goals of the organisation (section 3.3). Other successful strategies for additional budget include synergies with delivering other strategies such as biodiversity, net zero, urban heat, public open space and/or urban forest strategies, particularly where these outcomes were also strongly supported by the community.

The following findings also support budget for maintenance:

- Proactive maintenance is more cost effective than reactive maintenance. Maintenance activities should be planned in accordance with levels of service agreed before approval.
- Maintenance costs are lower for assets that are well designed and constructed. WSUD systems with trees are cheaper to maintain than systems with understorey plants alone.
- Maintaining vegetated systems requires regular (almost monthly) visits and this is (generally) a lower cost than rectification. Maintenance during establishment is 2–5 times the routine cost when the asset is functioning.
- A range of skills is required to maintain WSUD assets beyond traditional park and street maintenance skills. Options for maintenance delivery include skills-based or location based, although cross-disciplinary teams are likely to be the most effective.
- Retrofitting drainage assets into WSUD assets by local government as an in-house project is considered to provide the greatest opportunity for learning and ownership. A coordinated plan of civil and landscape works optimises financial and staff resources.
- Asset management systems improve delivery, particularly where they are integrated with financial systems that track value, as well as maintenance and renewal costs. This allows budgets for maintenance to be incorporated into future business plans.

3.7 Local government decision making for WSC outcomes

Applying WSC principles and practices can achieve outcomes beyond the traditional water services of water supply, wastewater management and stormwater management. The following section highlights how considering water is applicable across all local government responsibilities.

Corporate services decisions should:

- ensure WSC is incorporated into strategy and policy and include performance targets
- ensure procurement decisions account for non-financial benefits consistent with Strategic Community Plan goals
- require cross-agency collaboration to deliver multiple outcomes
- look for opportunities for collaboration with other organisations, universities and the community.

Community education and engagement decisions should:

- provide authentic opportunities for community input
- support community education about WSC practices and principles and explain the community's role in helping to achieve these outcomes.

Strategic and statutory planning and development decisions should:

- support the early consideration of site context
- require decisions to be supported by appropriate levels of information
- look beyond boundaries to seek strategic outcomes (consider catchment boundaries)
- support installation of rainwater tanks plumbed into toilets and use of greywater systems (consider incentives)
- enforce delivery of landscape outcomes and support tree retention rather than replacement
- consider alternative servicing options including small-scale wastewater treatment plants or other options for water harvesting and reuse that local government could operate
- recognise and plan for the likely impacts of climate change, particularly relating to mitigating urban heat and planning for safe passage of flood flows
- require buffers around conservation-value wetlands and foreshore areas of waterways.

Infrastructure planning and management decisions should:

- support use of technology to improve operational efficiency, monitoring and reporting
- be based on good data including asset registers that include green infrastructure and monitoring of condition and performance
- be guided by long-term asset management plans that include replacement costs
- optimise use of resources including reuse and recycling
- support proactive management approaches to reduce higher costs usually associated with reactive approaches
- recognise and plan for the likely impacts of climate change, particularly related to declining access to groundwater for irrigation of public open space; impacts on the health of natural areas; and management of extreme rainfall events.

4 PRIORITISING COMMUNICATION CHANNELS

There are many available channels for capacity building. The delivery channels explored by this project include:

- Seminars and breakfast/lunch/evening events (including networking)
- Face-to-face professional development sessions
- Online professional development sessions
- Online webinars
- Short videos (interview/speaking, cartoon, images with voice over)
- E-learning modules (own pace)
- Executive-level bus trips
- Fact sheets
- Case studies
- Delivery as part of existing RTO programs
- Presentations to six (6) WALGA Perth and Peel zone meetings (which contain local government Mayors and CEOs)
- Bespoke approaches including inter-organisation and intra-organisation workshops
- Linkages with events arranged by industry associations.
- Conference presentations (LGPro, WALGA, IPWEA).

Considering the appropriate communication channel recognises the need to act and connect at (i) individual (ii) organisational and (iii) institutional levels. Further, a range of context specific communication and adoption pathways will be required over time to facilitate lasting change.

The Project Steering Group discussed the indicative cost, level of difficulty, time required to develop the output and likelihood of attendance/use by our target audience of each of the identified channels (as shown in Table 2), noting variability associated with the scope, duration, partnership potential and desired level of production of each of the channels. It was agreed that the pilot project to test some of the messages with the target audience would be a breakfast event, targeted at Elected Members, in partnership with the Elected Member Sustainability Network.

Table 2: Indicative time, difficulty, cost and reach of delivery channels

Delivery channel	Time required	Level of difficulty	Likely cost	Level of attendance / use
1. Seminars and breakfast/lunch/evening events (including networking)	Yellow	Yellow	Green	Green
2. Face-to-face professional development sessions	Yellow	Red	Red	Yellow
3. Online professional development sessions	Yellow	Red	Yellow	Yellow
4. Online webinars	Green	Green	Green	Yellow
5. Short videos (interview/speaking, cartoon, images with voice over)	Yellow	Red	Yellow	Red
6. E-learning modules (own pace)	Red	Red	Red	Yellow
7. Executive-level bus trips	Yellow	Green	Green	Yellow
8. Fact sheets	Green	Green	Green	Red
9. Case studies	Green	Green	Green	Red
10. Delivery as part of existing RTO programs	Red	Red	Red	Yellow

Delivery channel	Time required	Level of difficulty	Likely cost	Level of attendance / use
11. Presentations to six (6) WALGA Perth and Peel zone meetings (which contain local government Mayors and CEOs)	Red	Yellow	Green	Green
12. Bespoke approaches including inter-organisation and intra-organisation workshops	Red	Yellow	Green	Green
13. Linkages with events arranged by industry associations.	Red	Red	Green	Yellow
14. Conference presentations (LGPro, WALGA, IPWEA)	Green	Green	Green	Red

Other channels supported by the Project Steering Group included:

1. Presentations to 6 WALGA Perth and Peel zone meetings
2. Breakfast event (including networking)
3. Strategy assistance provided to an individual local governments
4. Presentation to South East Councils Climate Change Alliance (SECCCA)
5. Councillor bus trips
6. Online webinars
7. Online modules.

The Project Steering Group also supported the use of a survey of local government people to further test their preferences for channels and topics. The outcomes of both are summarised below.

4.1 Pilot engagement event

The Pilot engagement activity was a breakfast event titled “Fostering water sensitive communities”, delivered by New WAtEr Ways Inc in partnership with the Elected Members Sustainability Network.

Key features of the event were:

- It was free, to maximise the number of registrations.
- It included presentations from 3 perspectives: a councillor (Giorgia Johnson, City of Bayswater), a senior executive (Martyn Glover, City of Gosnells) and a sustainability officer (Lisa Brideson, City of Cockburn). Their presentations are provided in Attachment 2.
- It was advertised via WALGA and New WAtEr Ways communications channels, as well as via the Water Sensitive Transition Network, the Waterwise Councils program and other local government contacts. The flyer is provided in Attachment 1.
 - As the initial response to the WALGA LG news promotion and invitations from the Elected Members Sustainability Network was low, the Urbaqua office manager sent a personal (individual) invitation to all 265 Local Government Councillors in Perth and Peel.
- The venue was donated by the City of Canning.
- 15 people registered and 9 people attended:
 - Discussions with the panel emphasised the need to better link WSC principles and practices with community engagement and education activities (e.g. citizen science), budgets and KPIs.
 - 7 people completed feedback forms, indicating they supported the event topic, format and time, and that they would pay for such an event in the future.

During the planning phase, it was noted that the timing of the event was during the caretaker period for local government elections. Advice from WALGA regarding the correct protocols and the likely impact indicated caretaker laws do not come into effect until next year, so any Council position on attendance at events during caretaker period is guidance only. Further, holding an event during caretaker period had not been an issue in the past and only 50% of Councillors were up for election. Given these factors, the event proceeded.

Fifteen registrations were received and a further 6 responses indicated people were interested but couldn't make it. Nine people attended on the day, plus the 3 speakers, the Mayor from Canning (who opened the event) and the New WATER Ways facilitator. Seven feedback forms were completed, and the results are provided in Attachment 3. The feedback indicated participants supported the event topic, format and time, as well as that they would pay for such an event in the future.

With regard to questions about how to better engage Councillors in WSC as part of the panel discussion, the commentary included the need to make a stronger link with people (community) and opportunities for citizen science and increasing community water knowledge; for Councillors to ask for briefings from their officers regarding what is being done; better links with the Strategic Community Plan and CEO KPIs; providing support for officers to act; and the need for good strategic planning linked to budgets.

4.2 Survey findings

Like the pilot engagement activity, the survey was advertised via the WALGA and New WATER Ways eNews emails. It was also included in all the emails sent to the 265 local government Councillors, the local government contacts on the Water Sensitive Transition Network and Waterwise Councils program, and Urbaqua contacts.

The survey elicited 21 responses, including 1 CEO, 11 Elected Members, 3 Executive / Senior Management, 2 Managers and 4 Officers. With the exception of the Elected Members and CEO, the main areas of responsibility were for Infrastructure (facilities, parks, drainage, waste) and Development (planning, compliance). No responses were received from people working in Community or Corporate Services roles.

Eight responses were received from regional local governments. This included Waroona, Augusta Margaret River, Busselton, Bunbury, Tammin and Cuballing. The metropolitan responses were received from Mundaring, Gosnells, Nedlands, Perth, Bayswater, Cottesloe, Rockingham and Stirling.

The most preferred methods of professional development were face-to-face training / workshops, followed by eLearning modules (pre-recorded, at own pace) and WALGA training or conferences. The least popular method was short online videos (Figure 4).

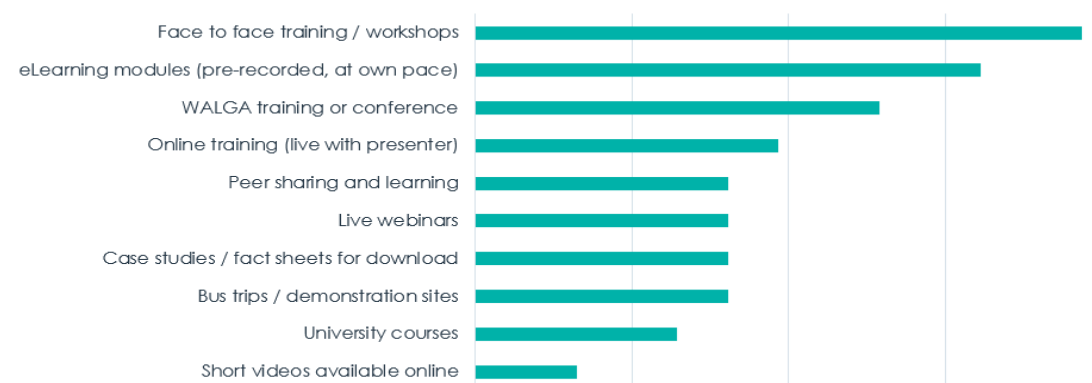


Figure 4: Top 3 preferred methods of professional development

In terms of topics of interest, community safety, health and wellbeing were ranked the highest priority for local governments. Addressing climate change risks, urban greening / environmental restoration, sustainable urban development and economic sustainability were also ranked highly, while supporting industry growth was ranked lowest (Figure 5).

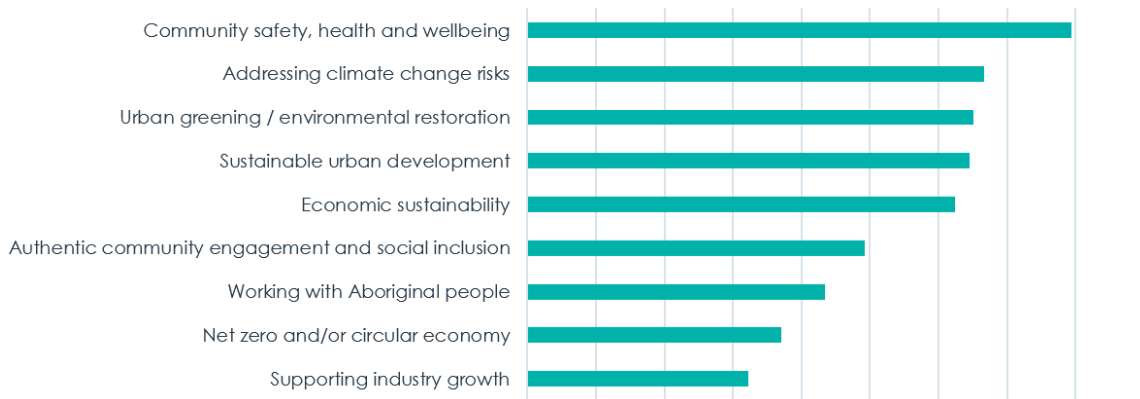


Figure 5: Level of interest to respondent's local government

Individual preferences were higher for urban greening / environmental restoration and addressing climate change risks than community safety, with economic sustainability also ranking lower (Figure 6).

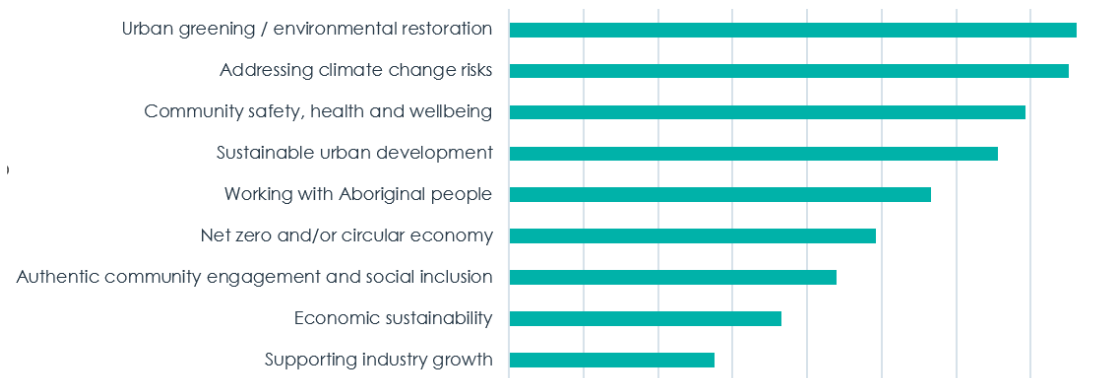


Figure 6: Level of interest to respondent

4.3 Key findings

The key findings from the pilot activity and local government survey are:

- Current commitments of Elected Members and Senior Executives are likely to reduce the ability to engage this audience in building capacity and support for WSC principles and practices.
- WSC messages should focus on the connections with local government priority action areas such as community safety, health and wellbeing; addressing climate change risks; urban greening / environmental restoration; sustainable urban development; and economic sustainability.
- The high level of survey responses from regional local governments suggests that online activities may have greater uptake/attendance.
- Longer lead times may be required to ensure advertising is effective.
- Support from WALGA is likely to increase legitimacy of the activity.

5 RECOMMENDED ENGAGEMENT PLAN

The following program has been developed based on the pilot activity and survey, and advice from the Project Steering Group. It aims to provide linkages to local government roles, responsibilities and decisions, and includes a diverse suite of opportunities for engagement and professional development that will also help to form community of practice relationships and partnerships. It will be supported by the evidence-based messages in section 3 and examples of local government successes and learnings.

The recommended activities are:

1. Presentations to WALGA Perth and Peel zone meetings
2. Networking breakfast event
3. Tailored inter-organisation and intra-organisation workshops
4. Presentations to regional councils or groups of local governments
5. Online webinars with opportunities for peer sharing/learning
6. Online modules
7. Councillor bus trips
8. Fact sheets and case studies
9. Participation at WALGA conference
10. Short videos.

These are described in more detail below.

5.1 Presentations to WALGA Perth and Peel zone meetings

The WALGA Zones are groups of geographically aligned local government members who meet regularly. The Zones are a key player in developing policy and legislative initiatives for local government by taking relevant local and regional issues to the State Council. Zone meetings generally include the Mayor and CEO of each local government in the zone. The Perth and Peel region contains 6 zones:

- [Central Metropolitan Zone](#)
- [South Metropolitan Zone](#)
- [East Metropolitan Zone](#)
- [South East Metropolitan Zone](#)
- [North Metropolitan Zone](#)
- [Peel Country Zone](#)

Deputations can be made to the zone meetings and must be approved by the Zone's executive officer.

New WAtEr Ways presented to the zone meetings in 2016 and 2017, highlighting the water resource issues facing each local government and showcasing WSC benefits. While each presentation was noted and responses were positive, it is unclear whether any lasting impact resulted. Therefore, presentations via this channel must clearly demonstrate how WSC principles and practices are able to address the latest concerns and strategic goals of each local government. This is likely to require advice from the executive officer of each Zone to understand recent areas of focus so messages can be tailored appropriately. It will also require contacting each local government before the presentation, to better understand individual practices, challenges and contexts. Case studies of leading local governments are also recommended, to support cross-agency learning and potentially some healthy competition.

5.2 Networking breakfast event with “draw card” speaker

To maximise exposure and likely attendance, it is recommended that this activity is delivered via an existing organisation. Those most likely to be connected with local government Councillors and

executives are the Western Australian Local Government Association (WALGA, Local Government Professionals Australia WA (LGPAWA), Local Government Planners Association (LGPA) and the Institute of Public Works Engineers WA (IPWEA WA).

WALGA presents the best opportunity for partnering, for example, weaving WSC messaging into an event that is highlighting critical requirements for local government in line with State Government priorities (which are often associated with funding). Initial discussions with WALGA suggested they would support an event on the State's Climate Change Program in partnership with the Department of Water and Environmental Regulation. This could include a request for participation by the Minister for Local Government, Water and/or Environment, to provide an incentive for Councillors and Executives to attend. Other topics could include energy and decarbonisation solutions, changes to the Local Government Act, public health planning, or Aboriginal Cultural knowledge.

IPEWA events are not usually attended by local government Councillors or senior executives and WSC is not currently considered to be a priority for the planning industry. An opportunity to work with LGPA will exist in future, however, when the revised *State Planning Policy 2.9: Planning for Water* is gazetted, hopefully in early 2024. This is already part of the New Water Ways work program for 2023-24.

As noted in the context analysis, the LGPAWA program focusses strongly on the operational aspects of local government such as financial management, procurement and governance, rather than technical skills and understanding. Webinars tend to provide information on new government initiative or programs. Similarly, a recent forum focussed on topics such as workforce retention, team building, community safety, managing unconscious bias and time management.

While conversations with the LGPAWA CEO suggest it is unlikely they would support an event around water sensitive cities, there may be an opportunity to develop guidance for elected members to set appropriate environmental policy around more visible topics such as climate resilience, cultural knowledge, circular economy and/or net zero. This option would require partnering with the agency with carriage of the topic to give sufficient validity to the presentation to generate interest from participants.

5.3 Tailored inter-organisation and intra-organisation workshops

Given time and resource constraints, it is often difficult for local government executives to allocate time for professional development or activities that are outside their direct responsibilities. Given that, one option is to deliver bespoke workshops on site that demonstrate how WSC principles and practices can align with corporate priorities.

This delivery channel is likely to be more appropriate for local government executives rather than councillors, due to the linkage with corporate priorities.

Examples include workshops on:

- opportunities for WSC principles and practices to underpin climate action
- contribution of water resources and WSUD to council strategies and plans (e.g. Emergency Management Strategy, Environment and Sustainability Strategy, Infrastructure Strategy, Economic Development Strategy, Community Plan, Corporate Plan)
- technical issues.

The WALGA WA Sustainability and Climate Action network (WASCA) provides opportunities for local governments to host cross-agency workshops; such workshops could include WSC practices and principles.

Another opportunity is for an expert to present at individual council meetings, like the briefings proposed for WALGA zones. Such presentations would need to be tailored to reflect local context. This channel would involve considerable effort to obtain support and prepare and deliver presentations. Given there

are 33 local governments in Perth and Peel, such presentations would also need to be prioritised, possibly by local government size, degree of water resource constraint and opportunities and/or likely level of receptiveness.

5.4 Presentations to regional councils or groups of local governments

Inter-organisational workshops are an effective way to build support, particularly where a project or issue crosses local government boundaries. For example, bringing together all local governments affected by the Gngangara Groundwater Allocation Plan could help develop effective partnerships for better groundwater management solutions while still supporting liveable communities and the economic prosperity.

Another approach would be working with existing Regional Councils or alliances, and facilitate a workshop that helps progress their actions, underpinned by WSC messages. This could target the Eastern Metropolitan Regional Council (Bassendean, Bayswater, Kalamunda, Mundaring, Swan), Perth South West Metropolitan Alliance (Cockburn, East Fremantle, Fremantle, Kwinana, Melville and Rockingham) or the South East Corridor Councils Alliance (Armadale, Canning, Gosnells and Victoria Park), as these have a broader focus than the remaining regional organisations, which just deliver waste management services.

And as noted above, delivering bespoke inter or intra-organisational workshops or meetings requires considerable engagement with the target group or individual local government to identify the opportunity; obtain support for some form of intervention; and then develop and deliver the event, potentially with a range of technical professionals. The key benefit would be the attendance and participation of senior executives.

5.5 Online webinars with opportunities for peer sharing/learning

Live webinars provide an opportunity for information transfer with minimal effort from the attendee. This can be optimised where the event includes opportunities for peer-to-peer learning and sharing such as relatable case studies, panel discussions and questions from attendees. Factors to consider to maximise uptake include the following:

- **Topic** – Frame WSC messages within other agendas that resonate with senior local government stakeholders, such as climate resilience, community health and wellbeing, environmental health, cultural knowledge, circular economy and net zero outcomes.
- **Speaker** – Organise a recognised expert. Webinars are also an opportunity for international speakers or multiple speakers followed by a panel discussion and/or questions from attendees via chat functions.
- **Timing** – Select a date that does not clash other industry events, school and public holidays and other factors that influence availability such as Council meeting dates. Lunch is often a preferred time, to avoid clashes with other meetings during the day; breakfast and evening sessions are better for face-to-face activities. Another aspect of timing is to consider policy and/or planning cycles and deliver a topic when there is broader industry interest, or it is linked to related actions of other stakeholders.
- **Marketing** – Advertise the event across multiple networks and newsletters to maximise exposure and attendance. This should include requests for sharing internally through key organisations as well as from a range of associations, and easy registration that includes a meeting invitation with the platform link. Likely partner organisations include Australian Institute of Landscape Architects, Planning Institute of Australia (WA), IPWEAWA, LGPAWA, Engineers

Australia, Urban Development Institute of Australia, Parks and Leisure Association, Waterwise Council program, and WALGA EcoNews/LG News.

The choice of topic and speaker is often opportunistic, in response to a current media topic or political position. However, as the amount of work required to set up and run a Webinar is not significant, Webinars are often a good option.

5.6 Online modules for professional development

Most local governments have a budget for staff to undertake professional development. In addition, most senior executives and some councillors are likely to belong to institutions or associations that have professional development requirements. This presents an opportunity for education about WSC practices and principles through on-line and/or face-to-face events, provided they contribute towards professional development.

WALGA is likely the most appropriate provider of professional development for councillors and senior executives, and they already have a module on water within their Environment and Sustainability eLearning course. Given that, it is unlikely WALGA will support an additional or separate professional development course in WSC principles and practices.

Similarly, it is unlikely LGPAWA would create an eLearning course on WSC principles and practices, as their program focusses primarily on operational aspects (as noted above).

A second option is for industry associations to develop an eLearning module or face-to-face event, which would be recognised as professional development. This option would require engagement with each association to determine the level of interest, identify the appropriate topic, and develop and deliver the agreed event or resource. Associations that may consider offering accreditation include:

- Planning Institute of Australia (WA)
- Institute of Public Works Engineers (WA)
- Australian Institute of Landscape Architects (WA)
- Engineers Australia.

Other associations to consider include the Australian Institute of Company Directors, the Institute of Public Administration and the Australian Institute of Management, although they are more likely to support administrative training rather than issues-based topics.

A third option may be developing an on-line module that is provided 'open source' for any organisation to incorporate into their own professional development programs. An eLearning module takes the viewer through information and questions and provides a 'Certificate of completion' after it has been satisfactorily completed. The module could be assigned for particular roles and/or provided for selection by interested individuals.

Suggested topics include:

1. the principles and practices of WSC (being developed by New WAter Ways)
2. how WSC practices deliver organisational goals, local government decision making for WSC outcomes, and supporting a culture of experimentation
3. how WSC practices improve asset management (including messages about the need for funding for maintenance)
4. how WSC planning and development outcomes support resilient communities.

5.7 Councillor bus trips

Bus trips are a useful mechanism to generate support for WSC principles and practices, particularly when they showcase industry-leading outcomes that have been delivered by local governments (demonstrating the outcome can be delivered by a local government, rather than the development industry). Demonstration sites can also generate friendly competition between local governments which then drives improved practices. Bus trips are also a great opportunity for networking and peer-to-peer support.

Examples sites include:

- Wharf St basin transformation in the City of Canning
- Peters Place micro-wetland in the City of Bayswater
- Park and sump retrofits in the City of Joondalup
- Hartfield Park Managed Aquifer Recharge scheme in the City of Kalamunda
- City of Mandurah MAR schemes
- Robinson Park and subdivision in the City of Gosnells
- Open space irrigation management in the City of Perth
- WGV in the City of Fremantle
- Permeable paving in the City of Belmont.

A difficulty with field trips is likely to be the value proposition for attendance. Options to increase the value proposition include presenters at CEO-level, guaranteed attendance by a Minister or celebrity and/or recognised professional development points.

5.8 Fact sheets and case studies

Short fact sheets and case studies can easily convey information on new ideas, clarifying 'what, why, who and how' the idea has been implemented elsewhere. Such documents are often available on websites and therefore easily searchable.

New WAtEr Ways already has a range of fact sheets and case studies that are available on their website, however more case studies could easily be added to the map and/or website. New WAtEr Ways is also preparing simple fact sheets on how WSC supports climate action. Other fact sheets could include urban heat mitigation and recent restoration projects.

5.9 Short videos

Short videos that contain a personality or genuine enthusiast could help 'convert the unconverted'. They can be shared across several platforms and social media, increasing exposure to a wider audience. Videos also help people to understand things they are unfamiliar with more quickly – if you see it, you can believe it.

Suggested topics include how WSC principles and practices:

- support community safety, health and wellbeing
- address climate change risks
- support urban greening / environmental restoration
- create sustainable urban development
- underpin economic sustainability.

6 DELIVERY

The Project Steering Group agreed to deliver the presentations to the 6 WALGA Perth and Peel Zones, deliver 2 webinars and develop an online module as part of the remaining project budget.

The Project Steering Group also emphasised the importance of identifying an avenue to fund the ongoing delivery of the recommended activities. Delivering many of the activities is often a long-term investment, because it takes time to engage with individuals who then often need to lobby senior management for an activity to occur. Further, planning and meeting schedules and timing must also be considered, as well as many other pressing issues.

6.1 Evaluation

As the WALGA zone meetings are targeted at CEOs and Elected Members, it is not considered appropriate to use conventional evaluation methods such as surveys to measure the effectiveness of the outcome post-activity. Accordingly, the evaluation will rely on anecdotal evidence which may include questions and discussions at each meeting, as well as conversations with local government officers after the event.

It will not be possible to evaluate the impact of the recorded module within the delivery timeframe. Participation in the webinars will be measured by registration and attendance numbers, as well as a short on-line survey at the end of the webinar.

New WAtEr Ways will continue to engage with local government at all levels and seek to understand the impact of this program, should more activities be funded and delivered. This information will be shared with the Perth Water Sensitive Transition Network through the Technical Capacity and Partnerships sub-committee as appropriate.

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ATTACHMENT 1: PILOT EVENT FLYER



Breakfast event: Fostering water sensitive communities

7.15-9.00 am Thursday 14 September 2023,
CREEC, Kent St Wilson



A water sensitive city is:

...where communities care about and value water, while making best use of its various sources (groundwater, dams, stormwater, sea water and wastewater). The city serves as a catchment and provides healthy natural environments, supporting a range of cultural, social, ecological and economic benefits. A waterwise (water sensitive) community is sustainable over the long term, economically productive, highly liveable and resilient to extreme weather events. It is a vibrant community where our connection with water enhances our quality of life. By adopting waterwise (water sensitive) approaches, communities and the environment can become more climate resilient and make the Boorloo (Perth) and Bindjareb (Peel) region a sustainable and liveable place for future generations

(Kep Katitjin – Gabi Kaadadjan, Government of WA, 2022).

This breakfast event will encourage discussion about how (and why) Councillors can assist in the delivery of a water sensitive community. We will hear from three perspectives: a Councillor, Senior Executive and Officer who will share their journey and engage the room in some great discussion.

When: 7.15am – 9.00am Thursday 14 September, 2023

Where: Canning River Eco Education Centre, Kent St, Wilson

Cost: Free, but Registration is essential to ensure appropriate catering.



Click [here](#) to register or scan the QR code.

This event is being delivered by the Water Sensitive Transition Network and New Water Ways, with the assistance of the Elected Members Sustainability Network, WALGA and the City of Canning.

While this event is targeted at Elected Members, we would welcome any CEOs or Senior Executives to also attend.



ATTACHMENT 2: PILOT EVENT PRESENTATIONS

Fostering water sensitive communities

Breakfast event for Elected Members
CREEC, 14 September 2023

Welcome

City of Canning Mayor,
Mr Patrick Hall



Why are you here?

- To encourage discussion about how (and why) Councillors can assist in the delivery of a water sensitive community
- Brief introduction to water sensitive cities
- **7.45am:** Buffet breakfast thanks to the Water Sensitive Transition Network
- **8.00am:** Starting the conversation – brief presentations from Councillor Giorgia Johnson from Bayswater, Martyn Glover – Director Infrastructure at Gosnells and Lisa Brideson, Sustainability and Water Officer from Cockburn
- **8.40am:** Panel Session
- **9.00am:** Close



WHAT IS A WATER SENSITIVE CITY?

And why should Elected Members be involved?

What are the watery challenges facing local government?

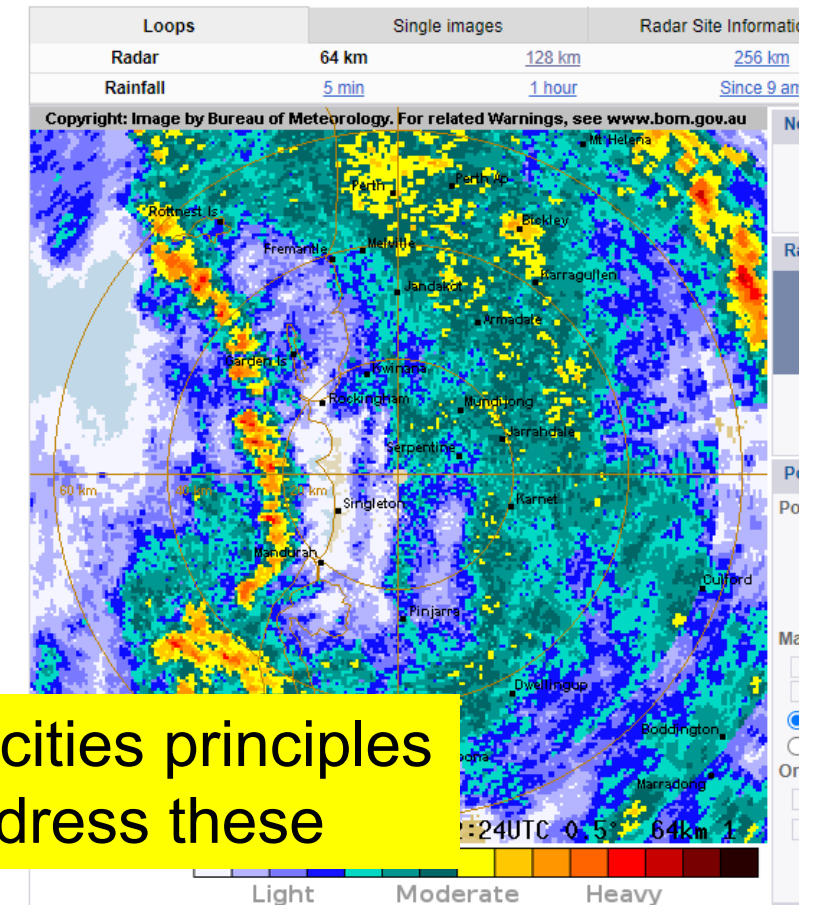


- Hotter temperatures
 - Significant community and environmental health impacts
 - Increased energy required for air conditioning
 - Plants requiring more water due to increased evapotranspiration
- Less water available for irrigation of ovals and landscape
- More frequent high intensity storms – potential for flash flooding and damage to infrastructure
- Increased bushfire risks

Applying water sensitive cities principles and practices can address these

64 km Perth (Serpentine) Radar Loop

[View the current warnings for Western Australia](#)



What is a water sensitive city?

A place where communities care about and **value water**, while making best use of its various sources (groundwater, dams, stormwater, sea water and wastewater).

The city serves as a catchment and provides **healthy natural environments**, supporting a range of cultural, social, ecological and economic benefits.

A waterwise (water sensitive) **community is sustainable** over the long term, economically productive, highly liveable and **resilient** to extreme weather events.

It is a vibrant community where our connection with water **enhances our quality of life**.

By adopting waterwise (water sensitive) approaches, communities and the environment can become more climate resilient and make the Boorloo (Perth) and Bindjareb (Peel) region a sustainable and liveable place for future generations.

(Kep Katitjin – Gabi Kaadadjan, Government of WA, 2022)

Water sensitive cities principles –

they go beyond managing water supply, wastewater, stormwater and groundwater

1. Enhance community and system **resilience, amenity and liveability**
2. **Mimic natural hydrological processes** - design based on local site conditions and minimise changes to hydrology
3. Enhance natural systems - manage, protect and **restore wetlands and waterways**
4. Provide **protection from flooding** in 1% annual exceedance probability (AEP) flood event and surface or groundwater inundation/waterlogging
5. Maximise **water use efficiency** and facilitate fit-for-purpose water sources including water reuse/recycling
6. **Minimise pollution** inputs and outputs in flows and in receiving environments
7. Create fit-for purpose, **safe and sustainable water management systems** that are **integrated** into the urban form
8. Enhance **economic, social and cultural values** of water resources

Recognising barriers

“Applying WSC approaches will cost more”

“We don’t need to worry about water as it is managed by the Water Corporation”

“We don’t have the resources to manage distributed or vegetated infrastructure”

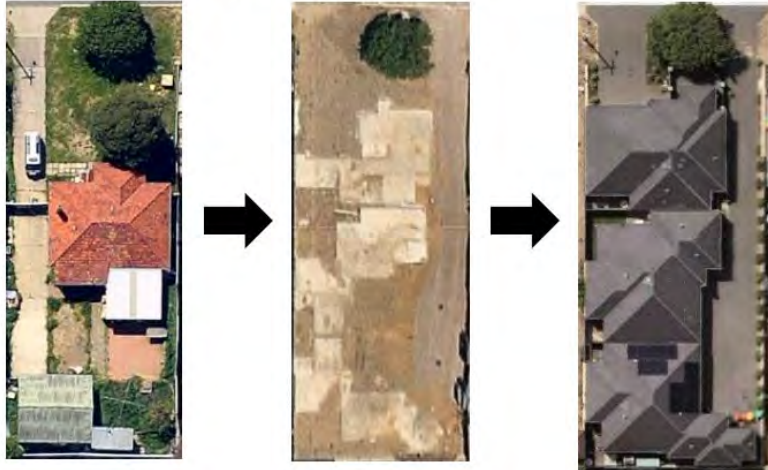
“Water and roads don’t go together”

“We can’t retrofit WSC approaches because there is no room”



There is evidence to support all the benefits

poorly designed development comes at a cost...



Impact	Cost
Storm water runoff	\$4,400
Loss of private open space	\$5,800
Loss of trees	\$7,300
Active heating & cooling	\$600
Urban heat island effect	\$8,000
Embodied energy	\$1,600
Social isolation	\$1,500
TOTAL	\$29,200

Source: SGS Economics and Planning

Costs to the broader community is **\$29K** for every new business-as-usual dwelling over 20-year lifecycle or **\$1,460 / yr**
 Estimated cost to state **\$117M / yr**

- Study by SGS Economics 2020 for DPLH

Increased urban greening results in:

lower odds of diabetes¹³

reduced stormwater and pollutants entering waterways

reduced surface temperature and air temperatures⁵

1 hectare of trees can provide 19 people's oxygen consumption per year¹¹

Increased green space, vegetation and water in greenfield developments can result in **\$142 million worth of health benefits¹⁴**

There is evidence to support all the benefits

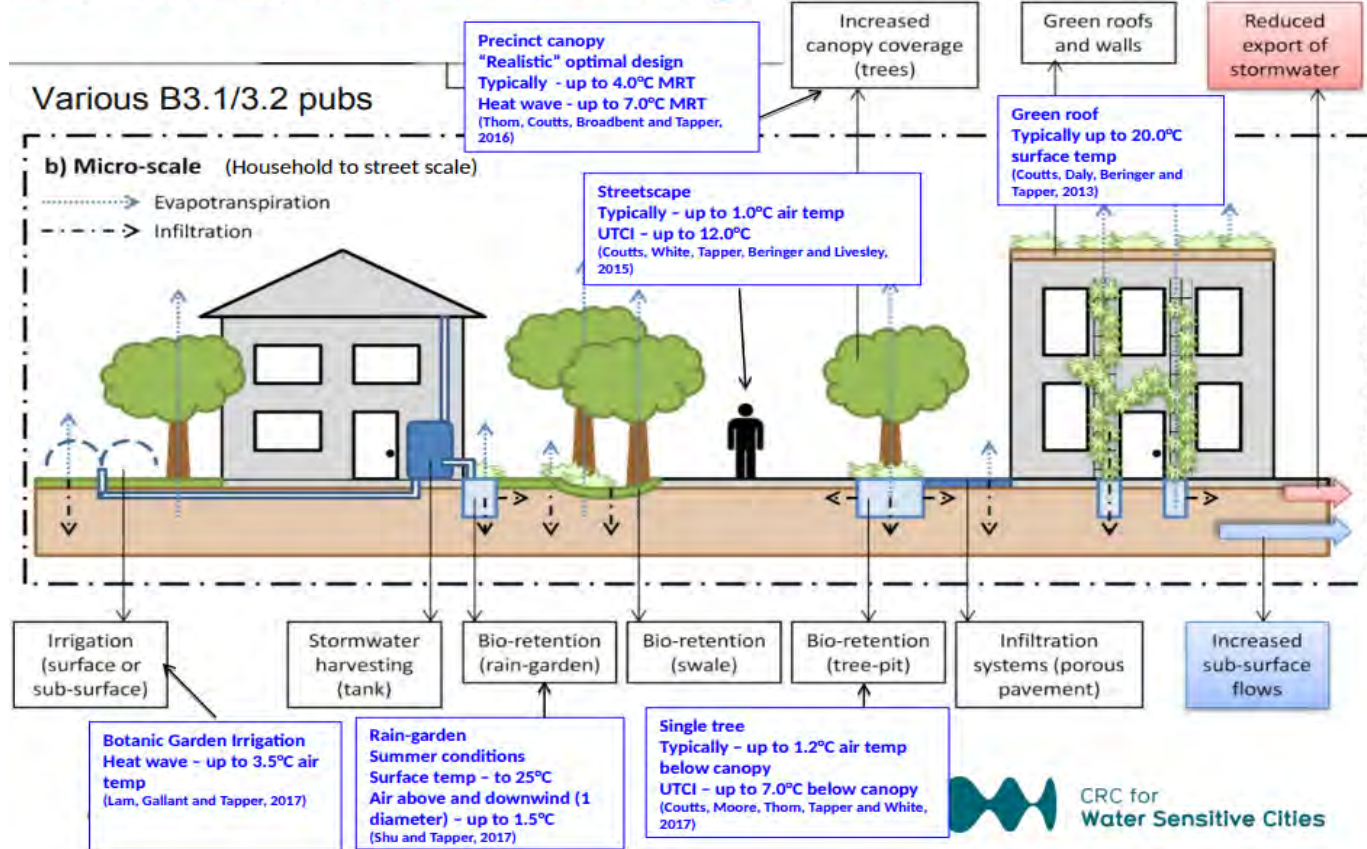
“Large verge trees increase property values”

+\$14,000 based on an assessment of 5606 single family homes sold in 2009 in Perth

Trees with adequate soil volume and soil moisture have:

- Doubled growth rate², canopy can be 8-10 times larger
- reduced cost from pavement uplift and root intrusion⁷
- remove 60 to 70 times more air pollution¹⁵
- 13 to 50 years increased lifespan³

Summertime WSUD Cooling



These outcomes are what we are all striving for



Our city landscapes are liveable and adaptive



Our community values are supported



Our natural systems are healthy, and are resilient to climate change



Our water services are sustainable and efficient



We are collaborative, transparent and innovative



Department of **Biodiversity, Conservation and Attractions**
Department of **Planning, Lands and Heritage**
Department of **Water and Environmental Regulation**



Breakfast is served

We will commence the discussion at 8.00am

THE ELECTED MEMBER PERSPECTIVE

Cr Giorgia Johnson, City of Bayswater

City of
Bayswater

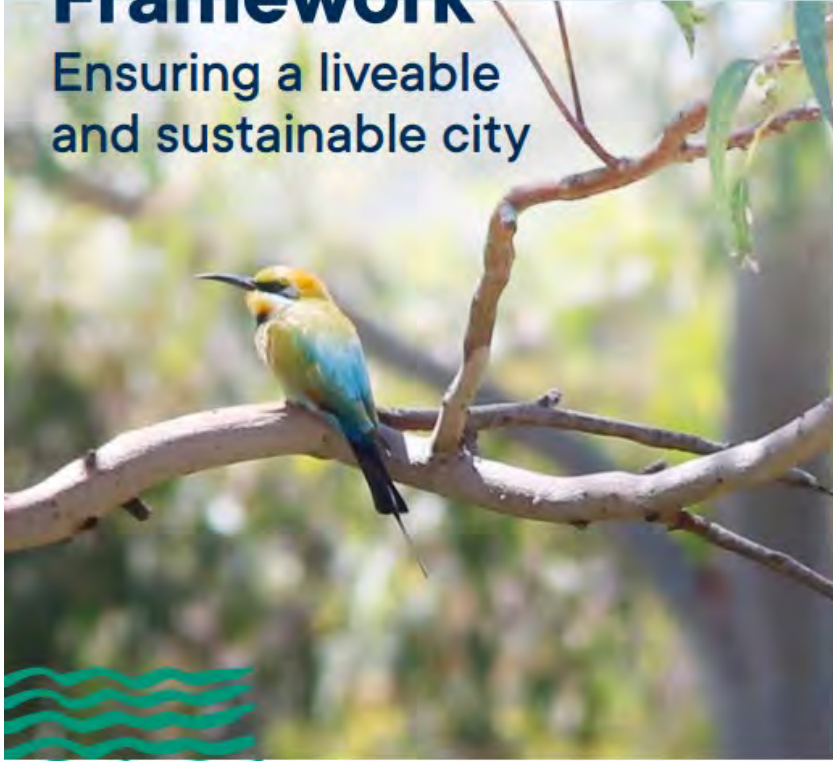


Waterwise Bayswater 2030



Environment and Liveability Framework

Ensuring a liveable and sustainable city



bayswater.wa.gov.au



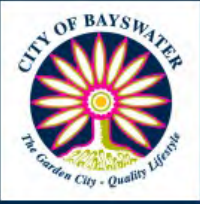
1. THE NATURAL ENVIRONMENT
2. THE ENVIRONMENT WE CREATE
3. LIVING IN THE ENVIRONMENT



BANDICOOT
LIGHTNING SWAMP, NORANDA



LIGHTNING SWAMP IN SUMMER, NORANDA



Waterwise Bayswater

A strategy to 2030

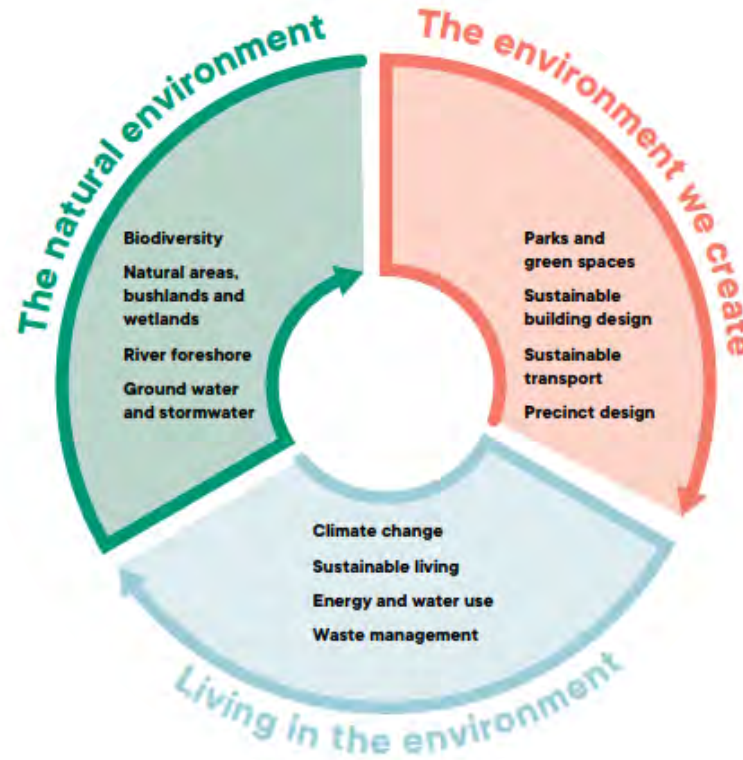
Prepared for the City of Bayswater

By Urbaqua

April 2020

urbaqua
land and water solutions

City of
Bayswater



11 Priority Strategies
43 Actions

1.2 Waterwise Vision for Bayswater

The Vision for a Waterwise Bayswater is...

Working together to care for the water sources that give life to our river, green places and the community.

My Waterwise Journey



Action 1.3 – Collaborate with local Aboriginal people to gather water stories and information to assist with the planning and management of the City’s environmental assets



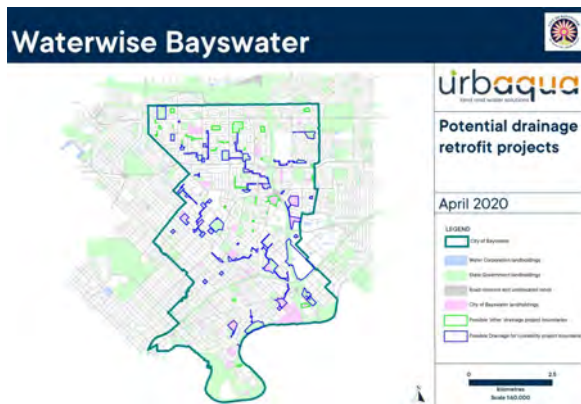
Action 1.5 – Continue to support the Drainage for Liveability program



Peter's Place micro-wetland



2019

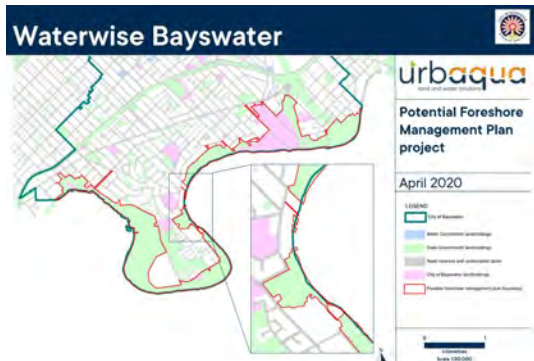


2022

Action 2.4 – Identify foreshore restoration projects



Urban Rivers and Catchment Program



Tranby foreshore, Maylands

Action 4.1 – Actively promote good design outcomes across the City that reduce/reuse water and/or improve water quality and liveability

1989



2010



2015



2023

2023



Preserving Urban Wetlands



Action 8.3 – Identify local natural areas where some management could be undertaken by the community and facilitate action by locals



Bardon Park – Malgamongup



Maylands Samphire Flats



Cloughton Reserve

Action 8.3 – Identify local natural areas where some management could be undertaken by the community and facilitate action by locals



Action 8.3 – Identify local natural areas where some management could be undertaken by the community and facilitate action by locals



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Action 8.3 – Identify local natural areas where some management could be undertaken by the community and facilitate action by locals



Bardon Park



Before



After



Action 8.3 – Identify local natural areas where some management could be undertaken by the community and facilitate action by locals



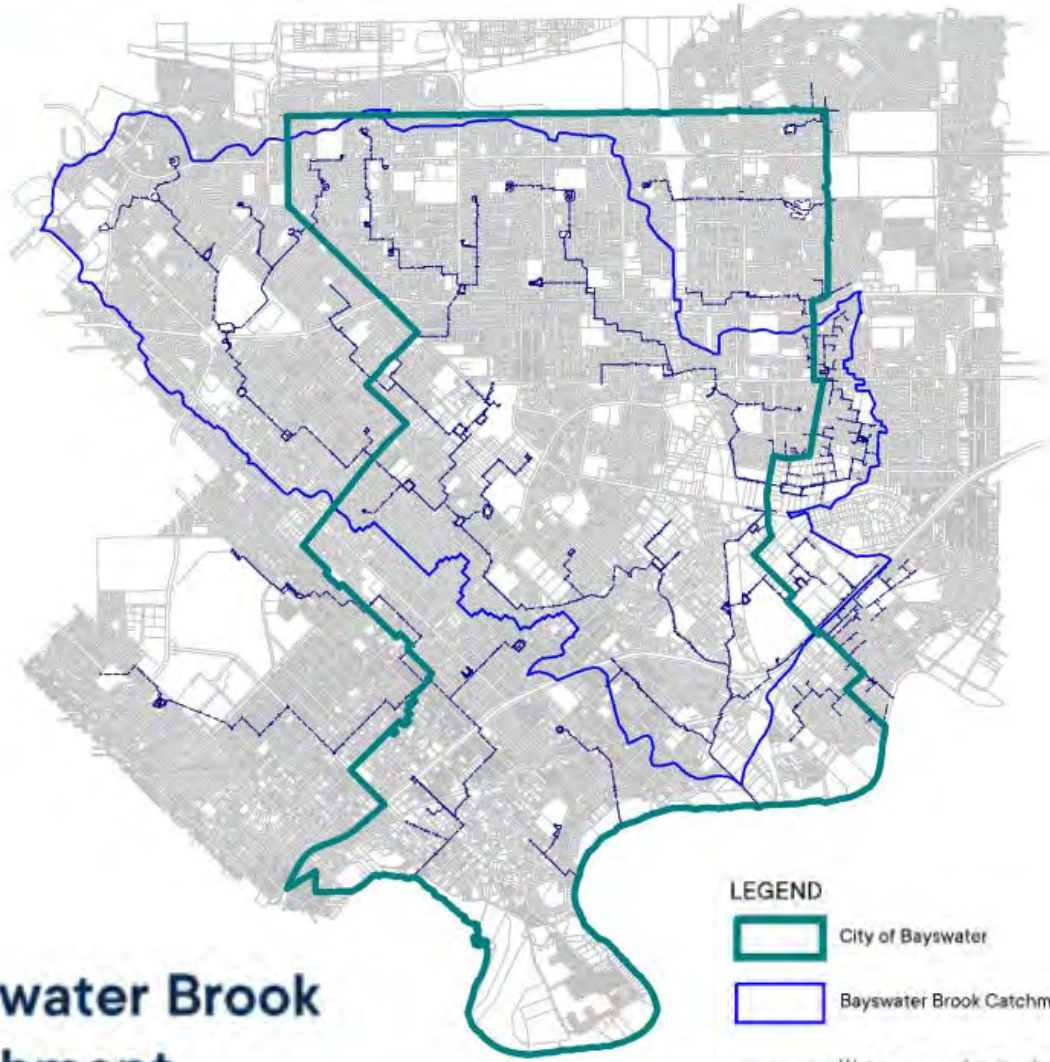
Action 11.1 – Increase availability and access to waterwise plants and trees by working with nursery and landscape industry – scope ideas and develop options



Verge Greening Guidelines

The City has developed verge greening guidelines and Waterwise Verge Best Practices to empower its residents to green their verges in a safe and sustainable way.

Waterwise Bayswater



**Bayswater Brook
Catchment**



THE SENIOR EXECUTIVE PERSPECTIVE

[Mr Martyn Glover](#), Director Infrastructure, City of Gosnells



Water Sensitive City

14 September 2023





What is a Water Sensitive City?

- Provides water security essential for economic prosperity
- Enhances and protects the health of waterways and wetlands
- Mitigates flood risk and damage
- Creates public spaces that collect, clean and recycle water

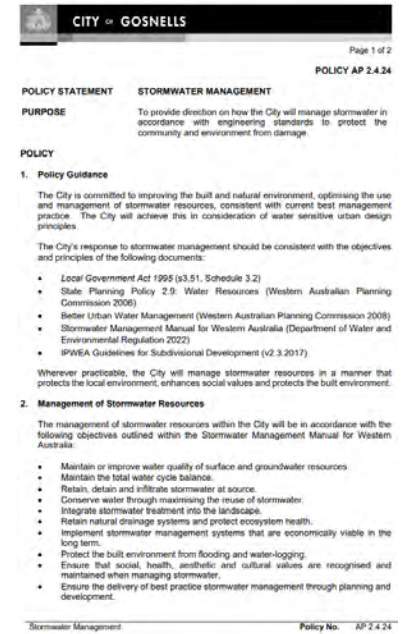
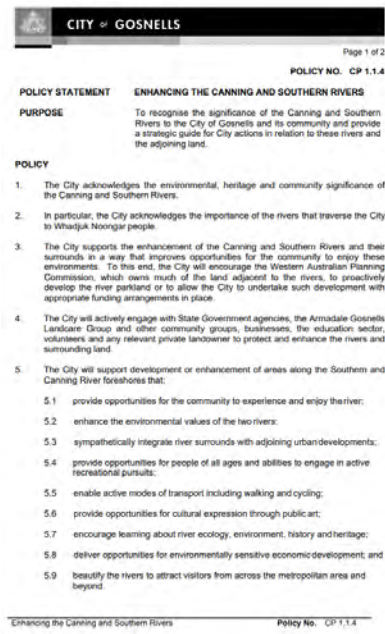
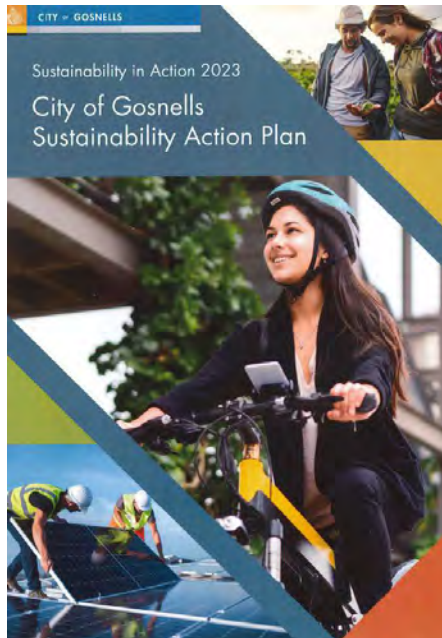




Water Sensitive Gosnells

• Guiding Documents

- Sustainability Action Plan, Enhancing the Canning and Southern Rivers Policy, Greening Gosnells Public Tree Strategy, Stormwater Management Policy





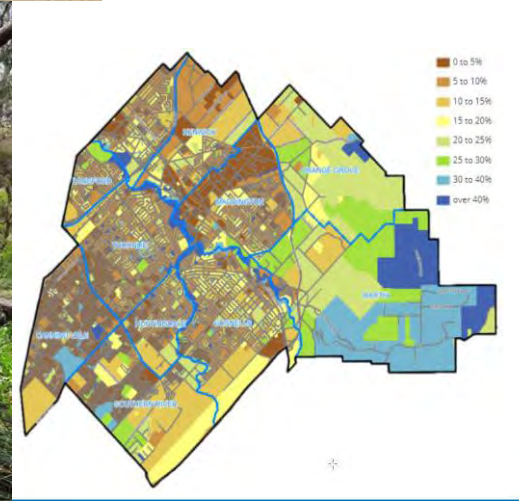
Water Sensitive Gosnells

- Programs and personnel
 - Greening Gosnells, Smart reticulation, Green Space Planning, Gold Waterwise Council and aquatic centre, Community tree planting, wetland renovation, Master Planning, Managed Aquifer Recharge, Clean Up the Canning Program, gross pollutant trapping retro-fit, Smart drainage, Blue/Green Developments.
 - Senior Sustainability Officer, Senior Drainage Engineer, Environmental Technical Officers, Irrigation Officers.





Greening Gosnells (160,000)

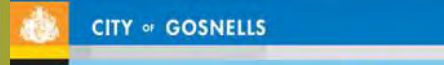




Green Space Planning



GLYNDEBOURNE AVENUE RESERVE - PROPOSED LANDSCAPE PLAN



GLYNDEBOURNE AVENUE RESERVE
PROPOSED LANDSCAPE PLAN



Wetlands, Master Planning, MAR





Smart Drainage





Robinson Park

CITY OF GOSNELLS

Robinson Park STORMWATER MANAGEMENT

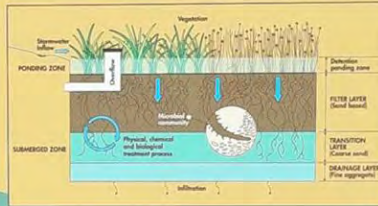
The City of Gosnells manages over 900km of drainage – equal to the distance from Gosnells to Carnarvon – and much of it has historically been directed into our river system.

Since the year 2000, the City has been implementing urban stormwater management with a 'treatment train' approach, which manages water before it is discharged into waterways. Stormwater runoff ends up in waterways and wetlands, such as the nearby Mary Carroll Wetlands.

Biofiltration basins, as shown in this diagram, are one way that the City is working to improve the quality of water that ends up in our wetlands and river systems.

A biofiltration basin is typically constructed with porous material and planted with vegetation, to retain and treat stormwater from the surrounding urban area. The soil acts as a filter to trap sediment and pollutants, while the vegetation uses nutrients transported through the system.

It is a simple approach to improving our environment and has the benefit of providing habitat for birds and small mammals.





Thank-you

CITY OF GOSNELLS
Sustainability in Action 2023
City of Gosnells
Sustainability Action Plan



THE SUSTAINABILITY OFFICER PERSPECTIVE

Lisa Brideson, Sustainability and Water Officer, City of Cockburn

Decorative green wavy lines are positioned at the bottom of the slide, mirroring the blue wavy lines at the top.



Water Sensitive Urban Design

Perspectives of a Sustainability Officer

Lisa Brideson



City of
Cockburn



wetlands to waves

Water: the heart of the City of Cockburn

WHY?

- Environment
- Community
- Economic
- National & Global



WHAT?

Water
sensitive
Communities,
what do they
deliver?

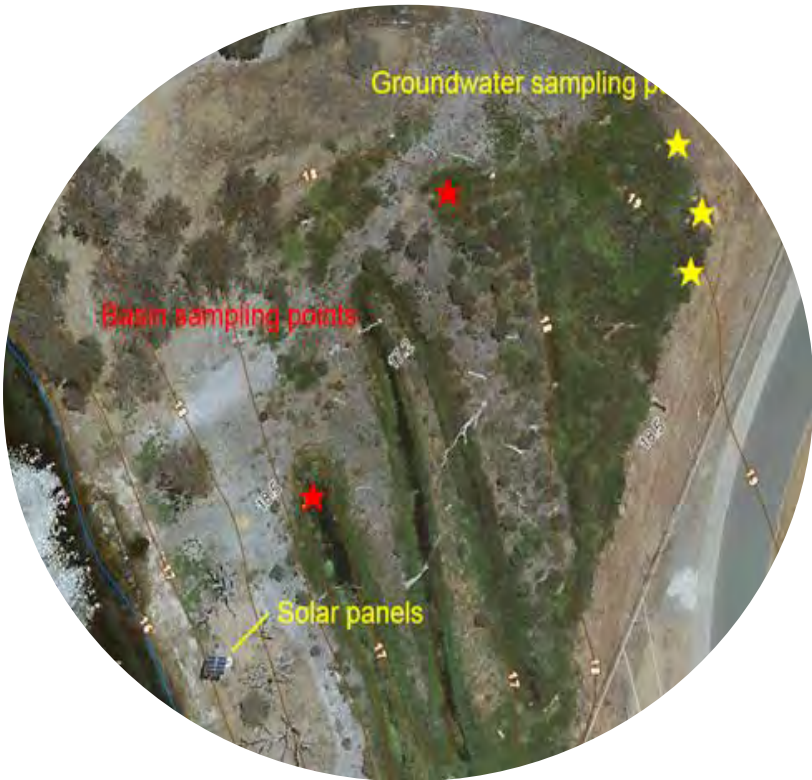


City of
Cockburn



wetlands to waves

Improve Ecological Health



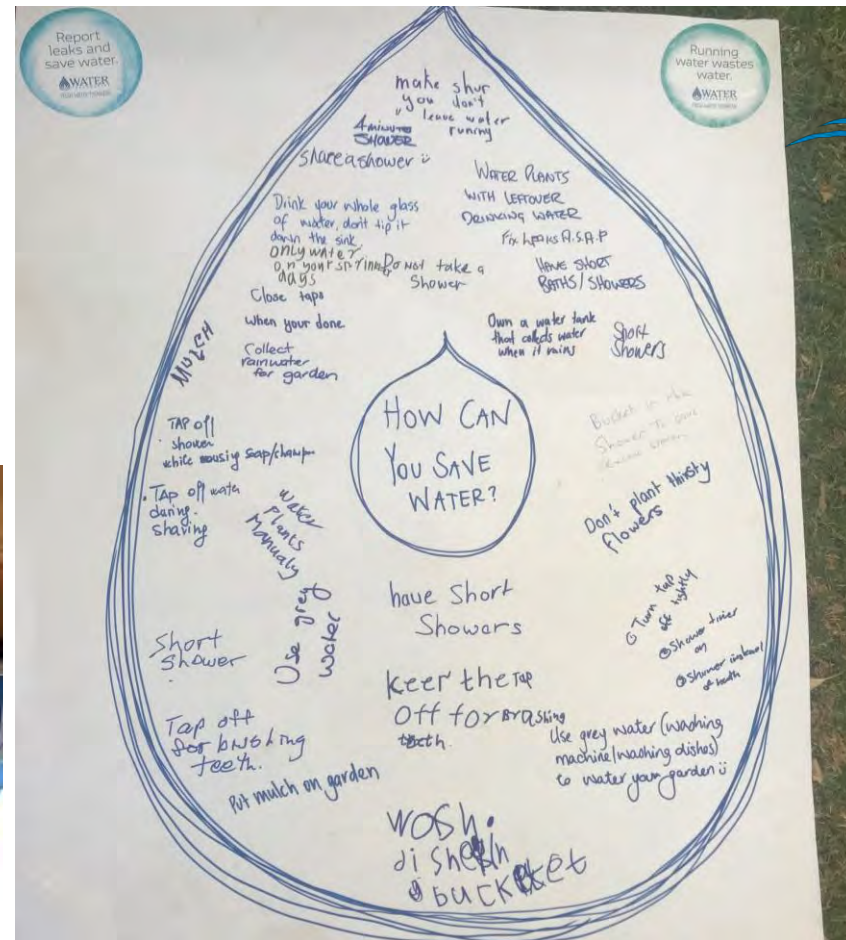
Lake Yangebup
Nutrient Stripping Basin



Bibra lake turtle nest
protection



Revegetation at Lake
Yangebup



Water, Water, Everywhere

Saturday 14 March | 2-4pm | \$5

Beeliar Community Centre 33 Lakefront Avenue, Beeliar

Register online: ticketbooth.com.au/CityofCockburn
or call the City on 08 9411 3444

Do you worry about water availability in the future? Would you like to learn more about saving water in your home?

Shani and Tim, from Ecoburbia, have created this engaging workshop about our water concerns. The workshop will cover rainwater and greywater systems, what you need to know to install a bore, and how to install drip irrigation. Plus easy water saving tips you can apply in your home.

You'll leave inspired!

Community Capital and Water literacy



Irrigation upgrade to improve water efficiency

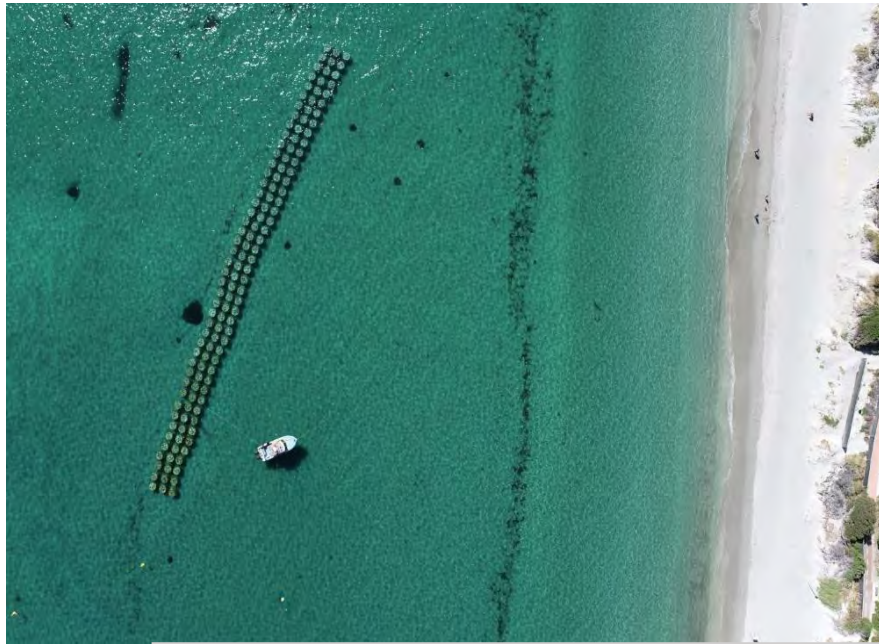
Economic Benefits

Tree Pits /rain gardens in new developments

Road Drainage Upgrade -
Gabion cages max infiltration



Global Coastal Erosion monitoring & Engineering



HOW?

- Listening
- Leading
- Lobbying





HOW?

Leading Lobbying

Your Councillors



Cr Kevin Allen
West Ward



Cr Michael Separovich
West Ward



Cr Phoebe Corke
West Ward



Cr Phil Eva, JP
Central Ward



Cr Chontelle Stone
Central Ward



Cr Tom Widenbar
Central Ward



Deputy Mayor
Lara Kirkwood
East Ward



Cr Lee-Anne Smith, OAM
East Ward



Cr Dr Chamonix Terblanche
East Ward



Greenslade Pop Up Urban Forest



Before and after: The car park has been converted to include a water sensitive urban designed garden and mixed use space.

Greenslade Pop Up Urban Forest



Lisa Brideson

T 08 9411 3444

E lbrideson@cockburn.wa.gov.au

www.cockburn.wa.gov.au



Please welcome our panel

Please raise your hand with any questions

Thank you!

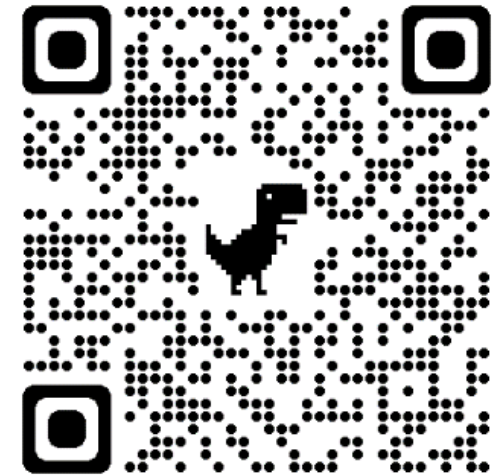
- Speakers – Giorgia, Martyn and Lisa
- Elected Members Sustainability Network, particularly Cr Peter Devereux
- Water Sensitive Transition Network – project support and catering
- City of Canning - venue
- New Water Ways – promotion and organisation
- WALGA – promotion and support

Next steps – what do you think?

- How can we continue discussion about how (and why) Councillors can assist in the delivery of a water sensitive community?

Please scan the QR code to complete a quick, 3 minute survey

<https://www.surveymonkey.com/r/YXMWGM>



Thank you for attending!

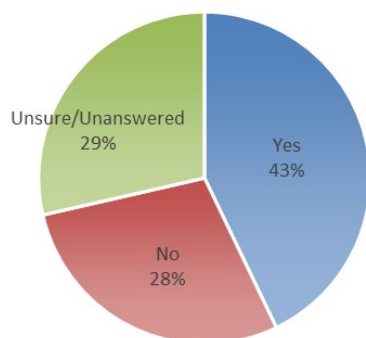
Please share any additional feedback with Shelley Shepherd,
shelley@urbaqua.org.au or 0403 170 040

ATTACHMENT 3: PILOT EVENT FEEDBACK

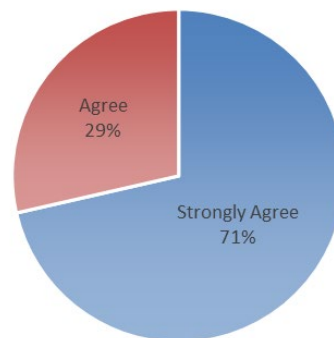
Elected Member Sustainability Network

Breakfast event	Fostering water sensitive communities
Date:	Thursday 14 September 2023
Time:	7.15am – 9.00am
Presenters:	Martyn Glover <MGlover@gosnells.wa.gov.au>; Giorgia Johnson <giorgia.johnson@bayswater.wa.gov.au>; Lisa Brideson <lbrideson@cockburn.wa.gov.au>
Number of filled out feedback forms:	7

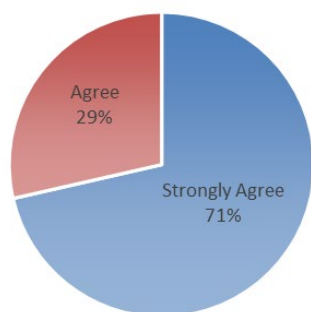
1. Have you previously been involved in the delivery of water sensitive cities solutions and/or water sensitive urban design?



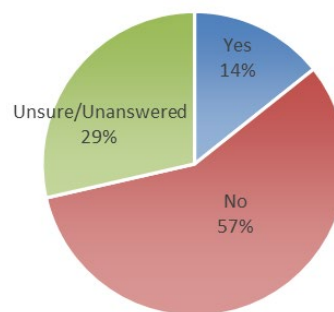
2. The event was able to showcase key issues and opportunities associated with the delivery of water sensitive cities.



3. The information provided today will assist me to consider urban water management and water sensitive cities outcomes as part of my role in Local Government.



4. Are there any considerations, improvements or suggestions you would make regarding today's event including format, time, venue, content etc?

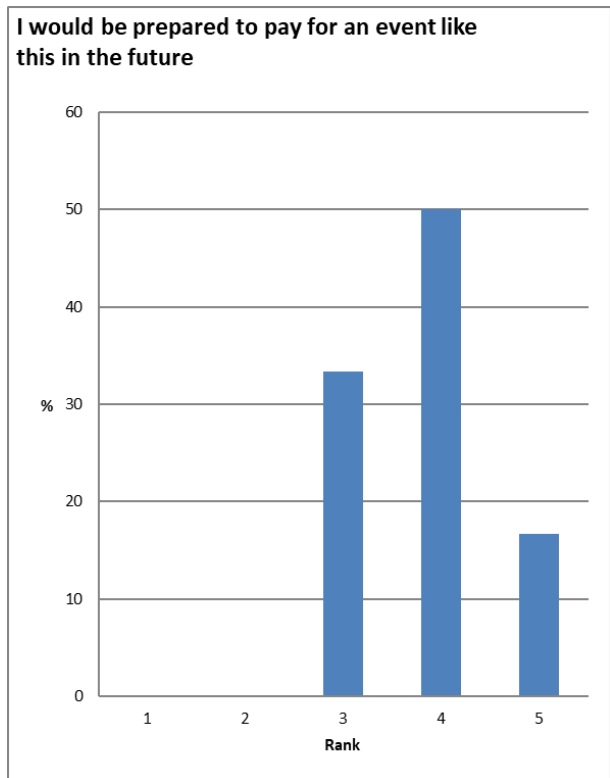
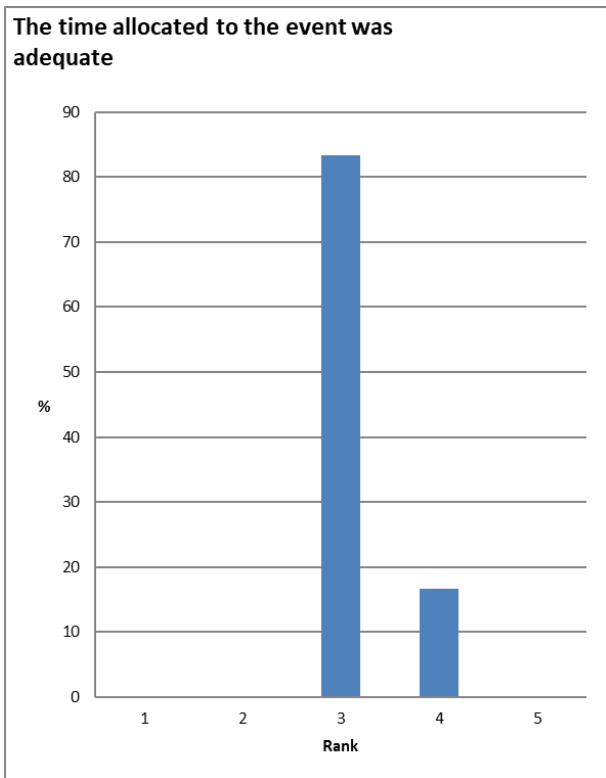
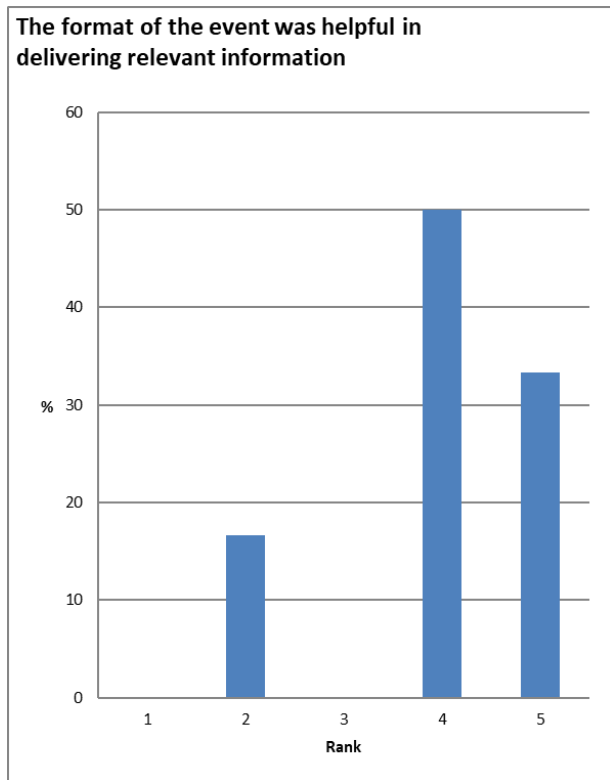
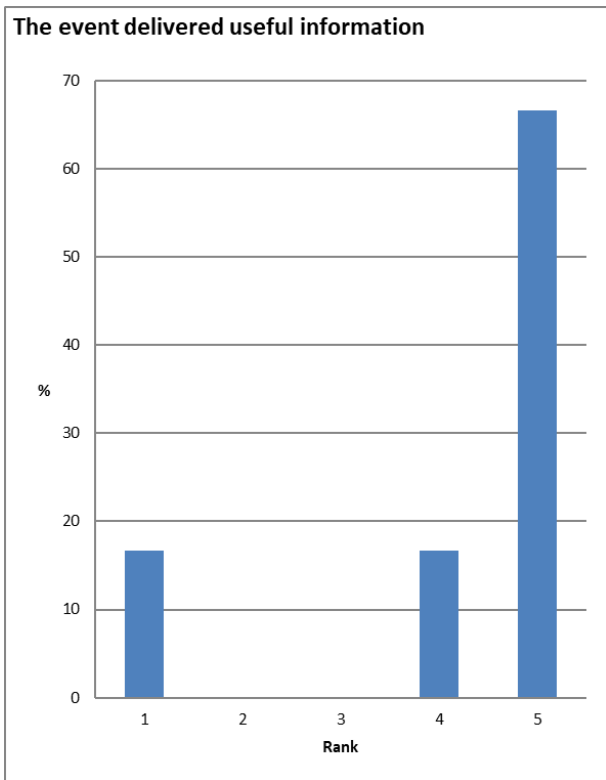


5. If you answered yes to question 5, please provide more information below:

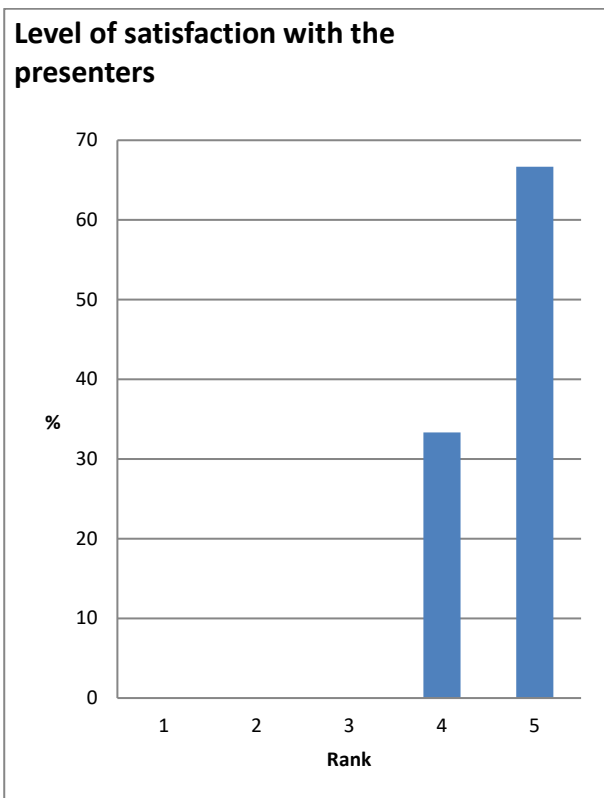
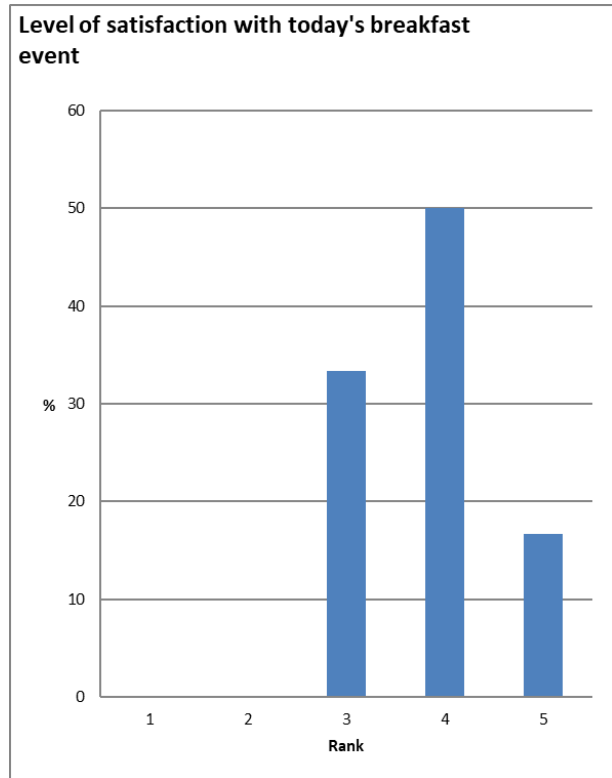
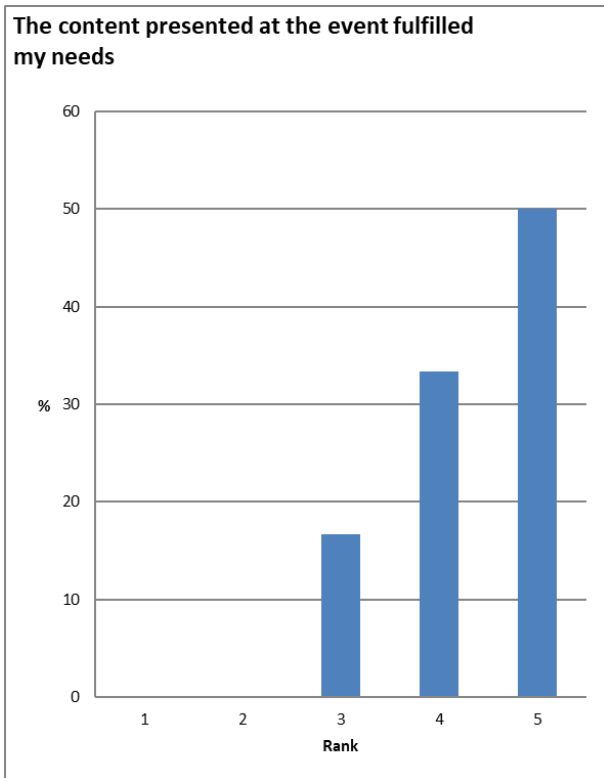
- Lovely venue, people and food
- Start on time, the blowout is not a good look
- I love the topics. Time and length of content needs review
- Fab event, maybe more central venue but unlucky clash with waste conference and cons council conference

Elected Member Sustainability Network

6. Please rate the following on a scale of 1-5 (5 being the highest/best)



Elected Member Sustainability Network



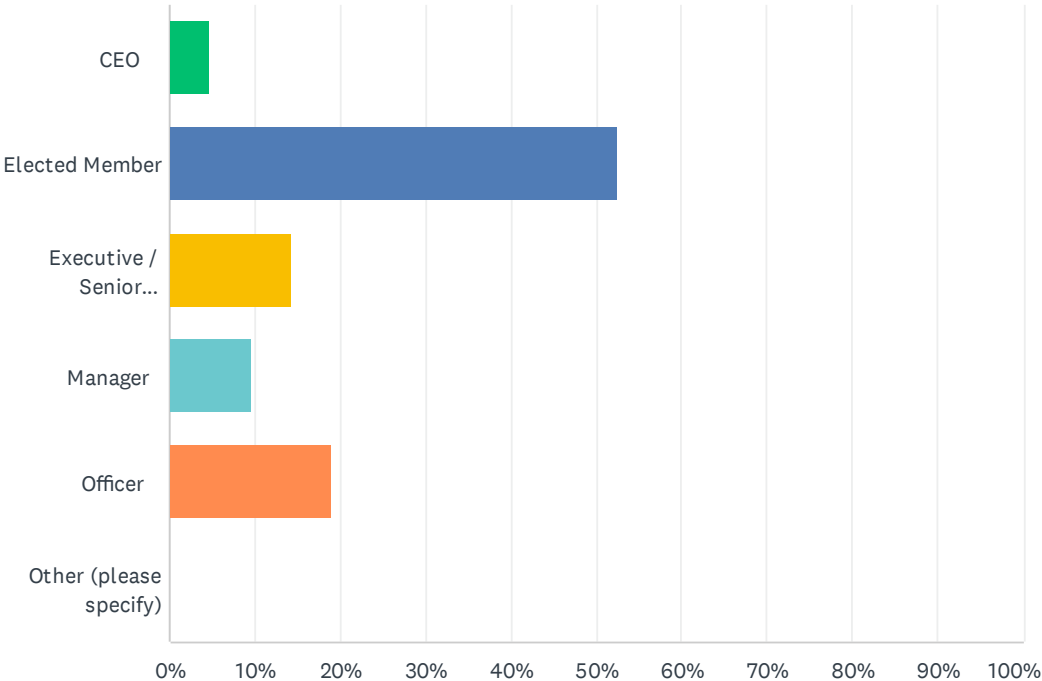
7. Is there anything else you 'd like to share about the event or topic:

- I liked Martyn's approach to what Councillors can do
- Speakers need to stick to timetable
- A great thing was done in partnership with EM sustainability network
- More time needed

ATTACHMENT 4: SURVEY RESULTS

Q1 What is your role in Local Government?

Answered: 21 Skipped: 0

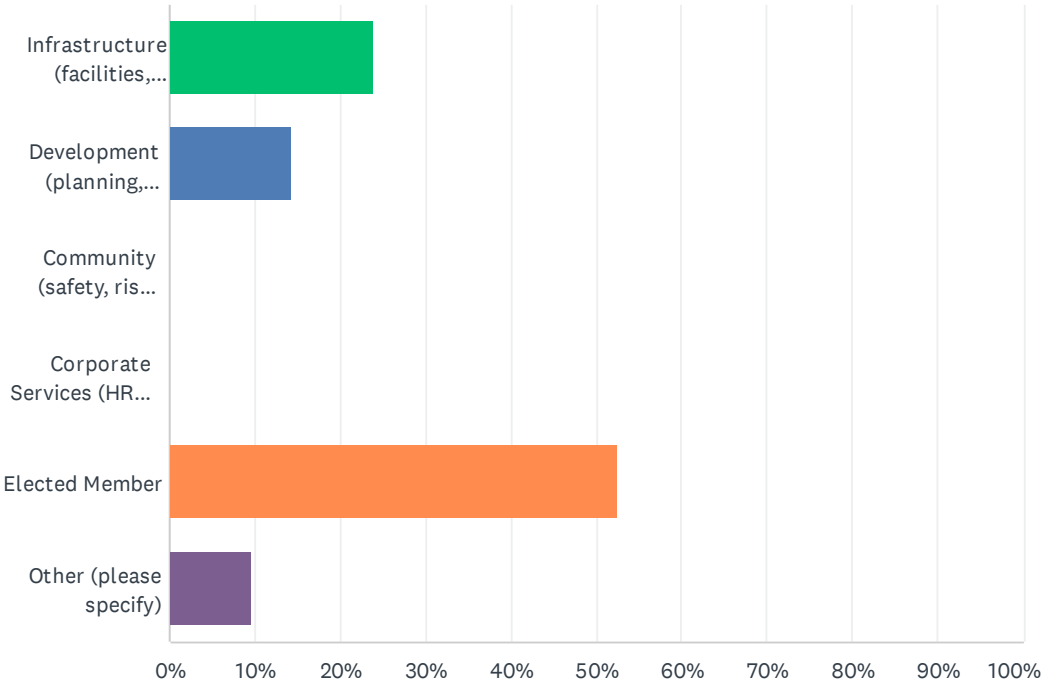


ANSWER CHOICES	RESPONSES	
CEO	4.76%	1
Elected Member	52.38%	11
Executive / Senior Management	14.29%	3
Manager	9.52%	2
Officer	19.05%	4
Other (please specify)	0.00%	0
TOTAL		21

#	OTHER (PLEASE SPECIFY)	DATE
	There are no responses.	

Q2 What is your main area of responsibility?

Answered: 21 Skipped: 0

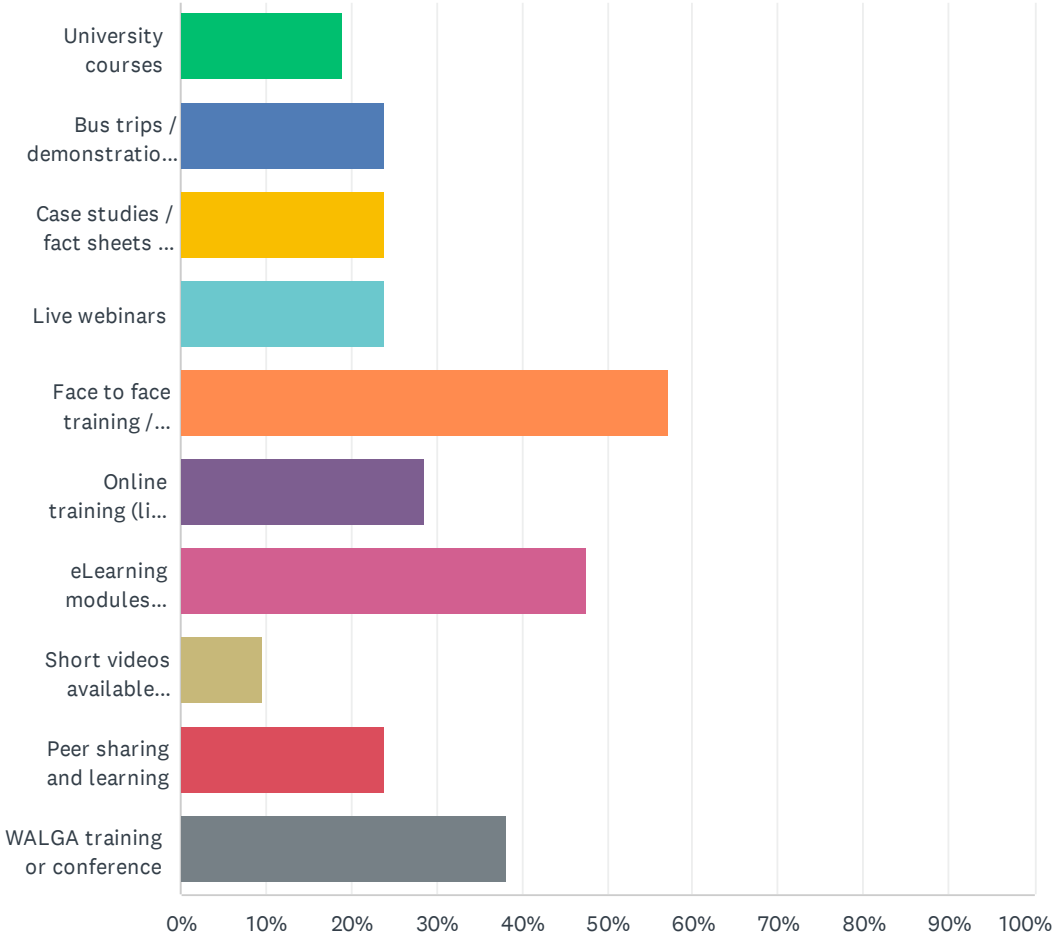


ANSWER CHOICES	RESPONSES
Infrastructure (facilities, parks, drainage, waste)	23.81% 5
Development (planning, compliance)	14.29% 3
Community (safety, risk, community development)	0.00% 0
Corporate Services (HR, finance, IT, legal)	0.00% 0
Elected Member	52.38% 11
Other (please specify)	9.52% 2
TOTAL	21

#	OTHER (PLEASE SPECIFY)	DATE
1	All of the above.	9/5/2023 9:38 AM
2	Environment	8/30/2023 11:42 AM

Q3 What is your preferred method of professional development? (Choose top 3)

Answered: 21 Skipped: 0

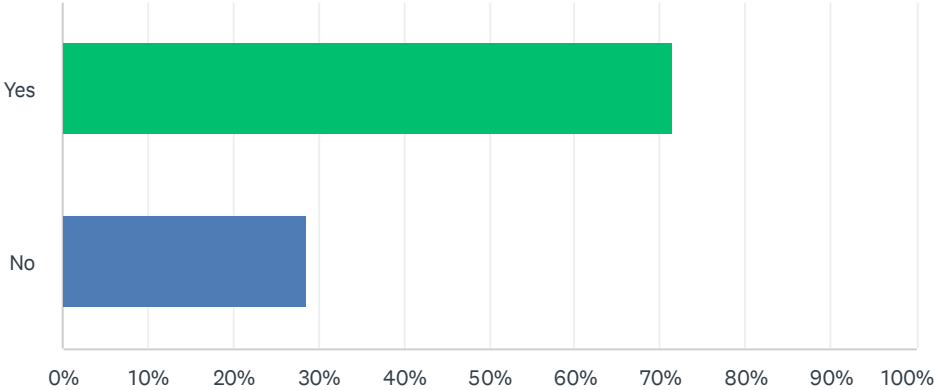


Seeking input on how to build knowledge and support of water sensitive cities principles and practices among local governments, with specific focus on Councillors and senior executives

ANSWER CHOICES	RESPONSES	
University courses	19.05%	4
Bus trips / demonstration sites	23.81%	5
Case studies / fact sheets for download	23.81%	5
Live webinars	23.81%	5
Face to face training / workshops	57.14%	12
Online training (live with presenter)	28.57%	6
eLearning modules (pre-recorded, at own pace)	47.62%	10
Short videos available online	9.52%	2
Peer sharing and learning	23.81%	5
WALGA training or conference	38.10%	8
Total Respondents: 21		

Q4 Have you undertaken any professional development in the last 6 months?

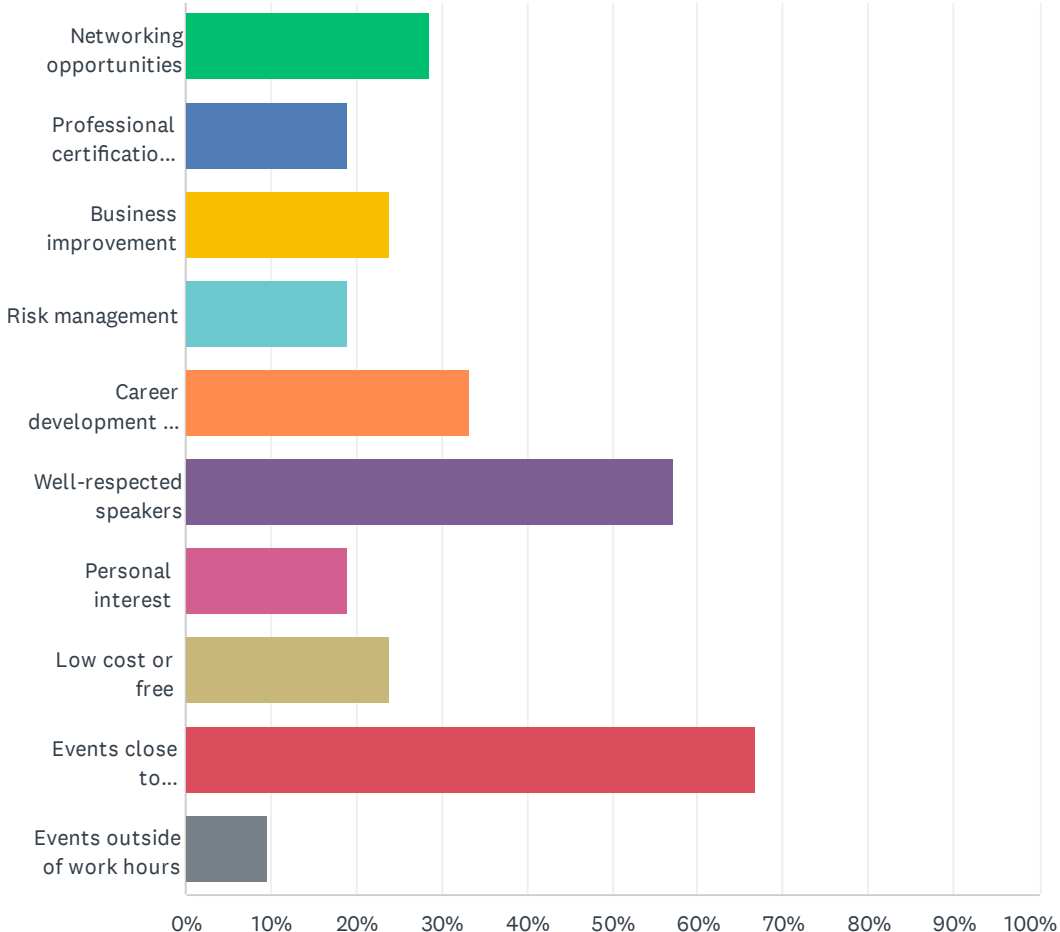
Answered: 21 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	71.43%	15
No	28.57%	6
TOTAL		21

Q5 What would most entice you to seek professional development (PD)? (Choose top 3)

Answered: 21 Skipped: 0

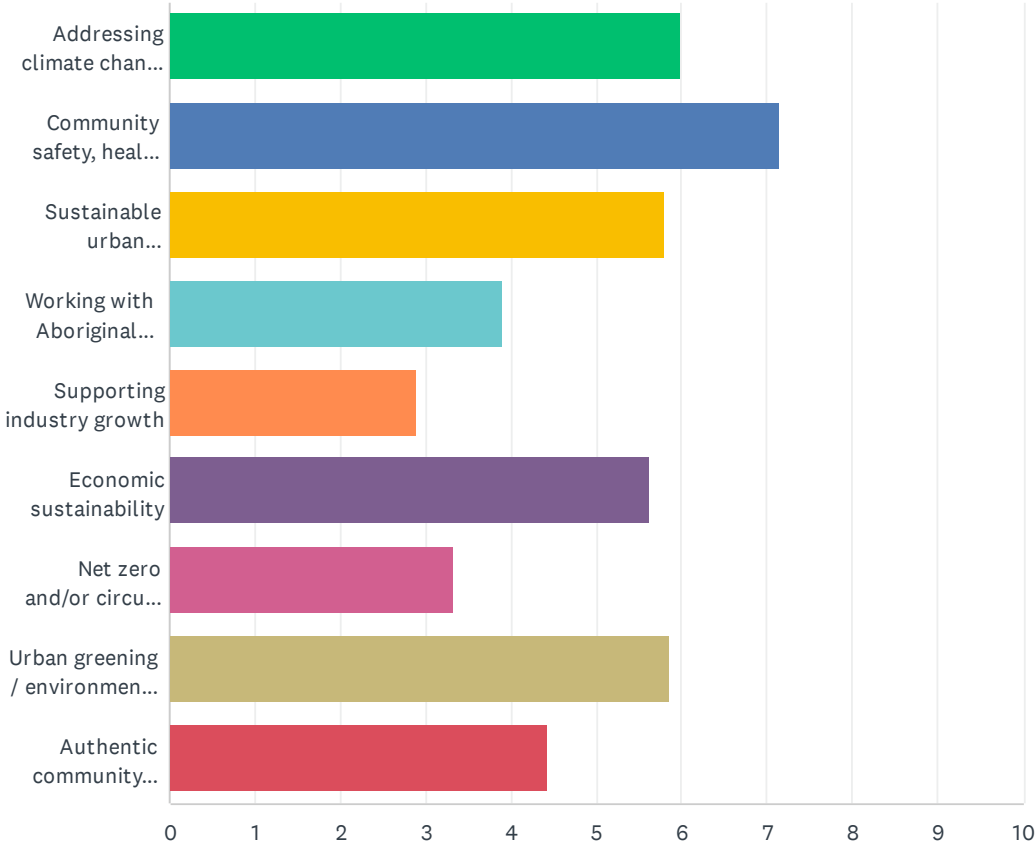


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ANSWER CHOICES	RESPONSES	
Networking opportunities	28.57%	6
Professional certification (PD points)	19.05%	4
Business improvement	23.81%	5
Risk management	19.05%	4
Career development / advancement	33.33%	7
Well-respected speakers	57.14%	12
Personal interest	19.05%	4
Low cost or free	23.81%	5
Events close to you/involving your local government or local region	66.67%	14
Events outside of work hours	9.52%	2
Total Respondents: 21		

Q6 Please rate the following topics in order of importance to your Local Government (1 being the most important)

Answered: 21 Skipped: 0

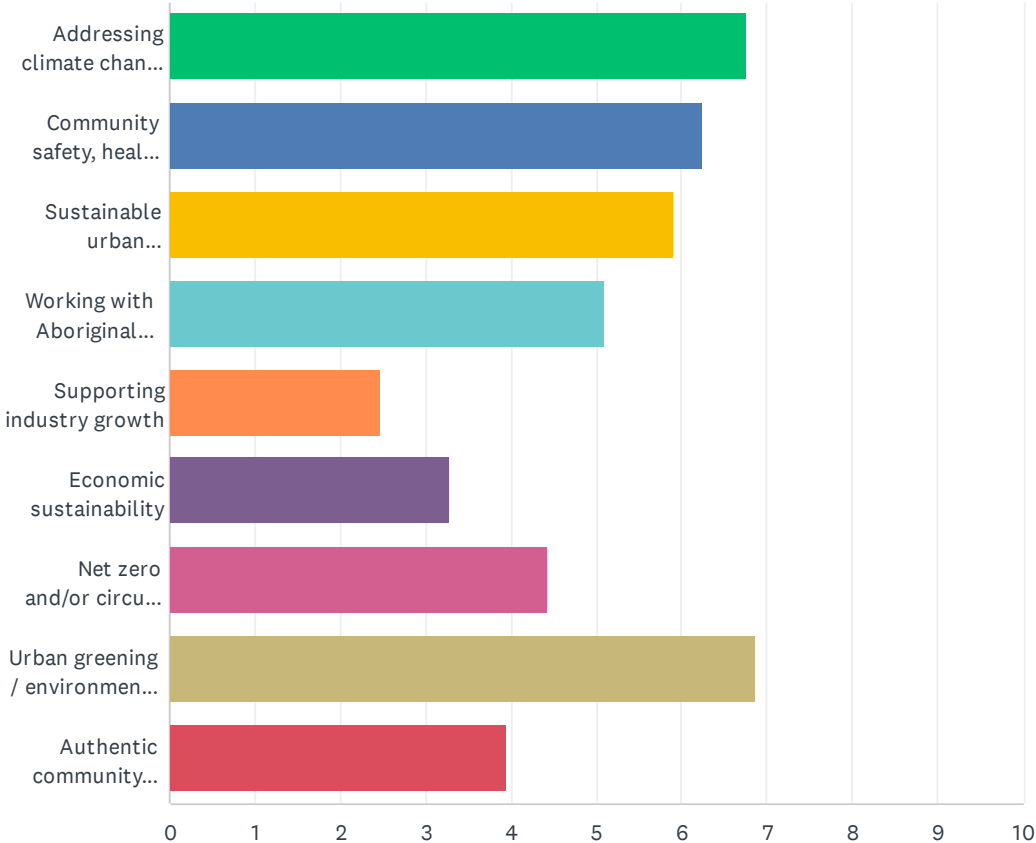


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	1	2	3	4	5	6	7	8	9	TOTAL	SCORE
Addressing climate change risks	23.81% 5	9.52% 2	9.52% 2	9.52% 2	14.29% 3	14.29% 3	19.05% 4	0.00% 0	0.00% 0	21	6.00
Community safety, health and wellbeing	38.10% 8	9.52% 2	23.81% 5	9.52% 2	4.76% 1	9.52% 2	0.00% 0	4.76% 1	0.00% 0	21	7.14
Sustainable urban development	19.05% 4	14.29% 3	4.76% 1	19.05% 4	4.76% 1	19.05% 4	14.29% 3	0.00% 0	4.76% 1	21	5.81
Working with Aboriginal people	4.76% 1	0.00% 0	4.76% 1	19.05% 4	9.52% 2	9.52% 2	23.81% 5	14.29% 3	14.29% 3	21	3.90
Supporting industry growth	4.76% 1	0.00% 0	4.76% 1	0.00% 0	9.52% 2	14.29% 3	9.52% 2	23.81% 5	33.33% 7	21	2.90
Economic sustainability	4.76% 1	28.57% 6	19.05% 4	4.76% 1	9.52% 2	4.76% 1	9.52% 2	14.29% 3	4.76% 1	21	5.62
Net zero and/or circular economy	0.00% 0	4.76% 1	9.52% 2	4.76% 1	9.52% 2	14.29% 3	9.52% 2	19.05% 4	28.57% 6	21	3.33
Urban greening / environmental restoration	4.76% 1	23.81% 5	19.05% 4	14.29% 3	14.29% 3	4.76% 1	9.52% 2	4.76% 1	4.76% 1	21	5.86
Authentic community engagement and social inclusion	0.00% 0	9.52% 2	4.76% 1	19.05% 4	23.81% 5	9.52% 2	4.76% 1	19.05% 4	9.52% 2	21	4.43

Q7 Please rank the following topics in order of interest to you (1 being the most interesting)

Answered: 21 Skipped: 0



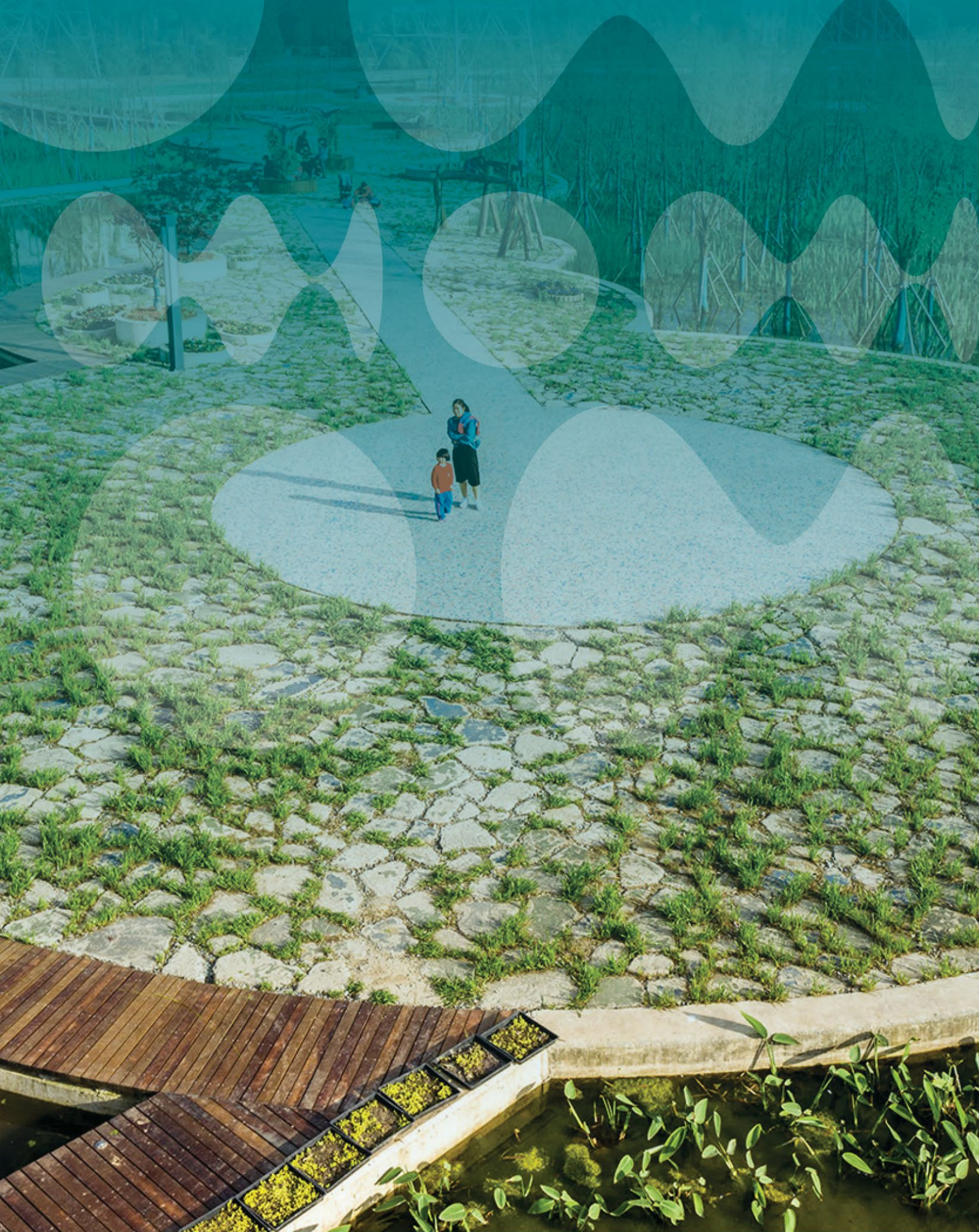
Seeking input on how to build knowledge and support of water sensitive cities principles and practices among local governments, with specific focus on Councillors and senior executives

	1	2	3	4	5	6	7	8	9	TOTAL	SCORE
Addressing climate change risks	33.33% 7	14.29% 3	14.29% 3	4.76% 1	14.29% 3	9.52% 2	4.76% 1	4.76% 1	0.00% 0	21	6.76
Community safety, health and wellbeing	9.52% 2	14.29% 3	14.29% 3	33.33% 7	14.29% 3	9.52% 2	4.76% 1	0.00% 0	0.00% 0	21	6.24
Sustainable urban development	23.81% 5	14.29% 3	9.52% 2	4.76% 1	14.29% 3	9.52% 2	14.29% 3	4.76% 1	4.76% 1	21	5.90
Working with Aboriginal people	4.76% 1	14.29% 3	14.29% 3	9.52% 2	14.29% 3	14.29% 3	14.29% 3	9.52% 2	4.76% 1	21	5.10
Supporting industry growth	0.00% 0	0.00% 0	4.76% 1	4.76% 1	0.00% 0	4.76% 1	23.81% 5	33.33% 7	28.57% 6	21	2.48
Economic sustainability	0.00% 0	4.76% 1	4.76% 1	9.52% 2	0.00% 0	14.29% 3	28.57% 6	19.05% 4	19.05% 4	21	3.29
Net zero and/or circular economy	4.76% 1	14.29% 3	4.76% 1	0.00% 0	19.05% 4	23.81% 5	9.52% 2	9.52% 2	14.29% 3	21	4.43
Urban greening / environmental restoration	23.81% 5	23.81% 5	19.05% 4	19.05% 4	4.76% 1	0.00% 0	0.00% 0	0.00% 0	9.52% 2	21	6.86
Authentic community engagement and social inclusion	0.00% 0	0.00% 0	14.29% 3	14.29% 3	19.05% 4	14.29% 3	0.00% 0	19.05% 4	19.05% 4	21	3.95

Q8 Which Local Government are you from?

Answered: 21 Skipped: 0

#	RESPONSES	DATE
1	Shire of Mundaring	9/8/2023 1:23 PM
2	City of Gosnells	9/8/2023 1:21 PM
3	City of Nedlands	9/7/2023 3:42 PM
4	City of Perth	9/6/2023 12:22 PM
5	Waroona Shire Council	9/5/2023 2:13 PM
6	Shire of Waroona	9/5/2023 11:51 AM
7	City of Bayswater	9/5/2023 9:38 AM
8	Town of Cottesloe	9/4/2023 7:24 AM
9	Augusta Margaret River	8/30/2023 4:03 PM
10	City of Bayswater	8/30/2023 12:32 PM
11	Busselton	8/30/2023 11:42 AM
12	City of Rockingham	8/30/2023 10:56 AM
13	Shire of Mundaring	8/29/2023 5:06 PM
14	Cottesloe	8/29/2023 6:10 AM
15	City of Bayswater	8/23/2023 1:07 PM
16	Shire of Waroona	8/23/2023 9:12 AM
17	Tammin	8/22/2023 11:30 PM
18	Cuballing	8/22/2023 10:56 PM
19	City of Bayswater	8/22/2023 3:24 PM
20	City of Stirling	8/20/2023 8:08 PM
21	Bunbury	8/18/2023 2:58 PM



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