

Outcomes from the 'Cities of the Future' workshop held at Ozwater'10 in Brisbane 9-10 March 2010

Foreword

Communities value their cities highly, expecting that they will provide high quality, 'liveable' urban environments. But these expectations are challenged by the twin issues of burgeoning population driving urban crowding and climate change impacting on water resources.

In this context, we should expect that water will play an increasingly vital role in achieving sustainable, liveable cities. Optimising the management of water across the entire urban water cycle will be a prime consideration in developing sustainable Cities of the Future.

However, planning for water infrastructure has traditionally been an after thought with many planning decisions based on transport and other factors. This must change. The key to developing the sustainable and high quality urban environments that communities expect is the development of multidisciplinary planning frameworks, supported by robust stakeholder engagement processes.

The urban water industry is very much aware that water touches all aspects of a person's existence in a city - from the protection of public health through to walking along healthy waterways. The urban water industry recognises that the way we manage water in the urban environment will change in the future, recognising the community's desire for sustainable water solutions.

It is in this context that the urban water industry is taking a proactive and collaborative role in delivering sustainable cities of the future. The prudent management of water is pivotal to an attractive and liveable city.

In March 2010, the Water Services Association of Australia and Melbourne Water co-hosted a Cities of the Future workshop at the Ozwater 2010 conference to enable over 150 water and non-water sector professionals to determine the challenges and opportunities for the water sector in planning for the future sustainability of Australia's cities.

The workshop established 10 guiding principles for developing Cities of the Future that are more water sensitive and that meet the needs of a water literate community. The water industry has the potential to drive the delivery of this vision through application of these 10 principles. This will ensure that future urban planning will put in practice concepts that are both sustainable and liveable.

Rob Skinner and Ross Young

Contents

Foreword	1
Acknowledgements.....	2
Introduction - Ozwater'10 Workshop	2
A vision framework for 'Cities of the Future'	3
Ten principles for 'Cities of the Future'	4
Implementation challenges for the Water Sector.....	9
Next steps	10

Introduction - OzWater'10 Workshop

Australia's population is growing rapidly, with 42.5 million people (nearly double the current figure) projected for 2056.¹ Most of this growth will occur in the mainland cities, and most people will live in suburbs, either existing or newly created.

The current generation of leaders faces a tremendous opportunity and challenge to shape Cities of the Future as sustainable and liveable places.

If the water sector wants to play an active role in the creation of sustainable Cities of the Future, it will need to collaborate with other urban planning sectors for a united approach to influencing the function and form of our cities. This approach requires the development of a strategic decision-making framework based on a commonly agreed vision.

In March 2010, leaders from across the Australian water industry and other city stakeholders assembled at the Water Services Association of Australia and Melbourne Water co-hosted Cities of the Future workshop, conducted as part of the Australian Water Association's (AWA) Ozwater 2010 conference in Brisbane, Australia.

The workshop provided an opportunity for a diverse range of thought leaders to discuss a shared vision and establish principles to frame the future planning and development of sustainable cities.

This report summarises the workshop outcomes. It outlines 10 guiding principles and initial ideas for progressing these to achieve sustainable Cities of the Future. The report is intended for water and urban planning practitioners who have an interest in meaningful collaboration to ensure our future cities are more liveable and sustainable.

This document forms part of Australia's contribution to an international body of work aimed at developing a path forward for creating more sustainable cities. Although a City of the Future demands cross-sector collaboration, this report focuses primarily on water and the water industry's role – and how it fits into the work of other sectors.

The ongoing conversations and consultations prompted by this document will form the basis for a workshop at the AWA and Waste Management Association of Australia's Enviro 2010 conference in Melbourne in July, and will culminate in a report by the International Water Association following the World Water Congress in Montreal in September 2010.

Acknowledgements

This report is the synthesis of the Cities of the Future workshop conducted at the Ozwater 2010 conference.

The workshop was hosted by the Water Services Association of Australia and Melbourne Water. It was designed, facilitated and documented by Howard Nielsen (NACC partnering with EcoSTEPS), Julian Crawford (EcoSTEPS) and Tim Orton (The Nous Group).

A significant contribution to the workshop was made by the panel speakers:

Gordon Price (Simon Fraser University, Vancouver),
Professor Peter Newman (Curtin University),
Peter Seamer (Growth Areas Authority),
Stuart Morris QC,
Ramana James (Stockland Residential),
Professor John Quiggin (University of Queensland),
Shaun Cox (South East Water),
Professor John Thwaites (Monash Sustainability Institute),
Julie McLellan (Brisbane City Council),
Warren Rowe (Gold Coast City Council) and
Ken Mathews (National Water Commission).

The contribution of all organisers and participants in the workshop is gratefully acknowledged.

¹ Australian Bureau of Statistics, Series A 3222.0 – Population, Projections, Australia, 2006-2101

A Vision Framework for Cities of the Future

Defining the characteristics of a sustainable city forms the basic building block for mapping the way forward and measuring success.

The workshop participants interpreted the sustainable cities notion using a mix of themes. These included sustainability and liveability, the way in which we value natural resources, options for water pricing and consumption, and water governance and management.

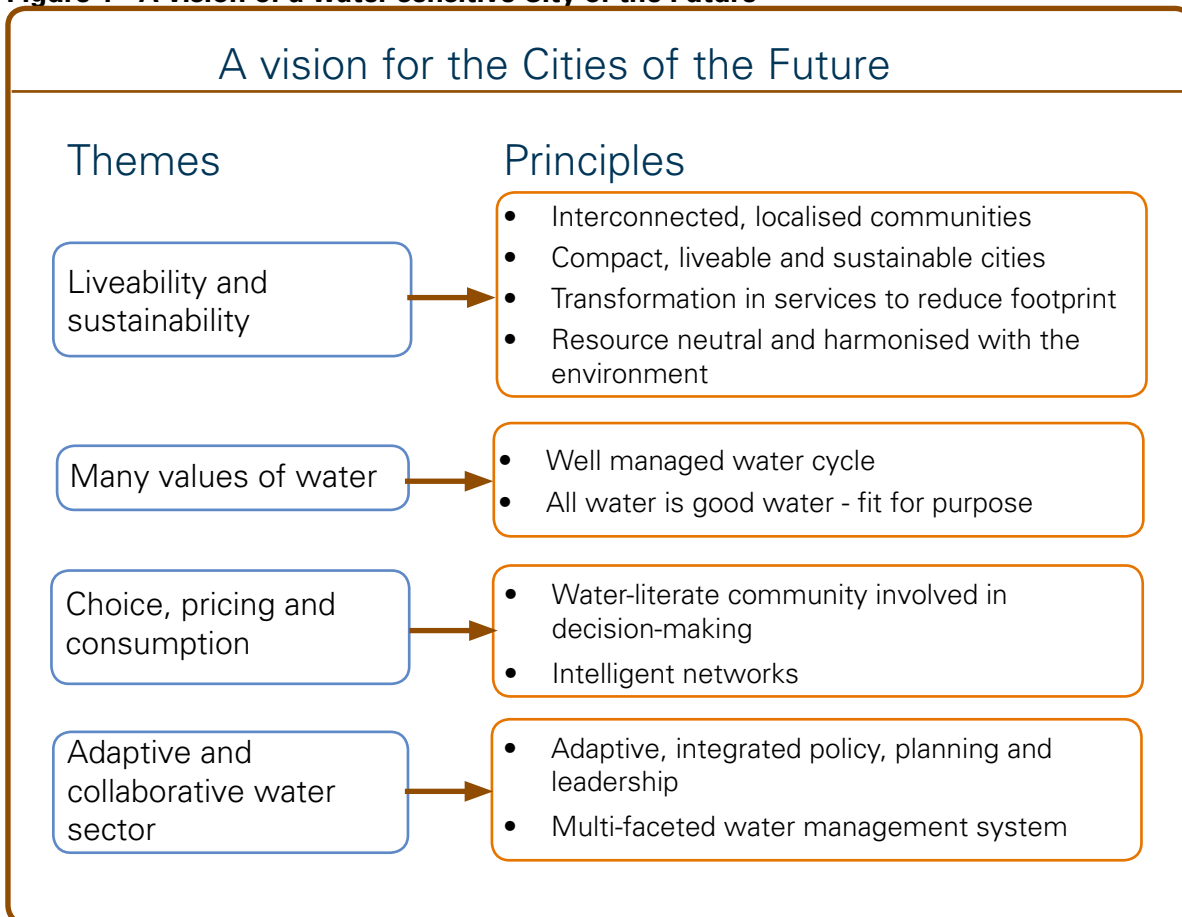
The central elements of a City of the Future are shown diagrammatically in Figure 1 below. Using these themes, participants drafted a list of principles to shape the vision for a city of the future.

In response to these principles the workshop developed a range of 'initial ideas'.

While there was strong agreement around the principles reported in this paper, the initial ideas represent a starting point for identifying actions.

They will be the subject of more detailed development at future forums, including the Australian Water Association and Waste Management Association of Australia's Enviro 2010 conference in Melbourne in July and the International Water Association's World Water Congress in Montreal in September 2010.

Figure 1 - A vision of a water sensitive City of the Future



Ten Principles for Cities of the Future

The principles below are a synthesis of the Cities of the Future workshop outputs.

Theme 1: Liveability and sustainability

Principle 1

Cities will continue to grow in population but will be increasingly localised. A feature of cities will be more interconnected communities.

Cities are complex, dynamic systems that are likely to become more complex over time. Cities will continue to offer lifestyles – jobs, cultural attractions, recreation and sporting attractions – that will attract people in abundance.

Principle 1 recognises that people value the diversity and scale of cities while wanting to maintain local connections and communities.

Principle 2

Sustainable cities will combine a compact footprint with sustainability and 'liveability'.

Sustainable Cities of the Future will be more compact and simultaneously deliver sustainability and liveability outcomes, facilitated by 'green' urban design. Citizens will enjoy both high quality open space and the ability to easily connect with other parts of the city.

Principle 3

Water and non-water services – including transport – will be transformed through integrated planning, resulting in a smaller footprint.

Delivering Principles 1 and 2 in a meaningful way will require a transformation in metropolitan transport and other sectors that contribute to sustainable outcomes.

Given the interdependencies between water, transport, city shape and design, energy consumption and other factors of 'liveability', a transformation in integrated planning will underpin the development of sustainable cities in the future.

Principle 4

Cities will be resource neutral, combining infrastructure and building design which will harmonise with the broader environment.

The urban form will generate water, energy and nutrient by-products that can meet the city's resource demands in a way which is carbon neutral.

Delivering the vision of cities inherent in Principles 1 to 3 will require transformational change in metropolitan infrastructure and building design – one which delivers a resource positive outcome or at the very least resource neutrality.

Cities will also be designed to operate in harmony with the broader environment. For example, cities will release water to the environment consistent with natural environmental flow patterns.



L-R Rob Skinner, Managing Director, Melbourne Water; Ross Young, Executive Director, WSAA; Stuart Morris QC and Jaimie Hicks, Program Coordinator, Research and Development, WSAA

Continue over page to
'Initial ideas for progressing Principles 1 to 4'



Workshop discussion groups

Initial ideas for progressing Principles 1 to 4

Having reached strong consensus on the Principles that underpin the theme of "Liveability and Sustainability", the workshop participants spent some time brainstorming initial ideas for how these principles can be progressed. These ideas are summarised below:

- Define and reach consensus with the broader community on what constitutes a 'liveable' and compact city, and what part water will play in achieving these outcomes.
- Develop a position that describes the preferred density model for cities.
- Develop active partnerships across all urban planning sectors to deliver high profile examples of a sustainable City of the Future.
- Carry out planning scheme reviews to create space for new water sensitive urban design and green city projects. If necessary undertake rezoning and/or buy-back programs to achieve these objectives.
- Develop cross-sector principles for industry and institutional collaboration, formally driven by government.
- Establish governance arrangements to improve connections between city planning functions.
- Develop a decision framework to establish a common understanding of carbon neutrality and prepare a manual to guide planners.
- Continue 'water sensitive' demonstration projects and ensure that these progress to standard practice following thorough reviews of performance.
- Actively participate in a multi disciplinary urban planning process to ensure that water resource and water asset requirements are included from the outset.
- Remove financial impediments which impede the efficient location of people around the city (e.g. taxes on property transfer impede the ability for people to relocate to reduce their travel requirements). Remove financial incentives for private car use.
- Build a "must do" attitude about city liveability amongst elected decision makers by illustrating the tangible benefits of more liveable cities.



General discussion which included WSAA Members Kerry Schott, Managing Director, Sydney Water; Catherine Ferrari, Communications Manager, Water Corporation; Glen Daigger, President Elect, IWA; Judi Hansen, General Manager, Environment and Innovation, Sydney Water; and Peter Moore, Chief Operations Officer, Water Corporation
Peter Binney, Vice President, Director of Sustainable Water Planning, Black and Veatch.

Theme 2: The many values of water

Principle 5

Sustainable cities will be served by a well-managed water cycle that – in addition to public health and water security – provides for healthy waterways, open spaces and a green city.

Water will be managed across the water cycle to deliver economic and social value for the community, and to protect and enhance environmental values.

Principle 6

Sustainable cities will recognise that all water is good water – based on the concept of fit for purpose.

It will be recognised that water has many different values and 'fit for purpose' uses. All water comprising the urban water cycle (including stormwater and wastewater) will be highly valued and managed to deliver optimal environmental and social outcomes.

Initial ideas for progressing Principles 5 and 6

- Utilise the water sector's technical expertise to define and communicate with the community on the concept of 'fit for purpose' water based on different water qualities.
- Develop communities of practice able to undertake innovative research and development in this area and transfer ideas and information within - and outside - the sector.
- Continue to build on community and stakeholder trust in the water sector (particularly surrounding the use of recycled water) by delivering clear and reliable advice on alternative water sources.
- Improve understanding of the community's value of water and waterways in cities and benchmark these values for the future. This should specifically include the links between open spaces and healthy communities.
- Cost externalities across all sectors of urban planning when planning for Cities for the Future.
- Define property rights for non-traditional sources of water.
- Investigate how to remove barriers to use of alternative water supplies.



Kevin Young, Managing Director, Hunter Water and WSAA Chair



Gordon Price, Simon Fraser University, Vancouver



Prof. Peter Newman, Curtin University



Shaun Cox, Managing Director, South East Water

Theme 3: Choice, pricing and consumption

Principle 7

Sustainable cities will comprise informed 'water literate' citizens and businesses, with regulations and pricing principles that drive more sustainable choices.

Citizens and communities place greater value on their resources where they have greater control over them. On this basis, water will be valued and utilised best when its users are individually informed and able to exercise appropriate levels of local control.

Citizens – as customers and developers – will be able to pursue their individual choices whilst ensuring sustainable outcomes by bearing the full environmental and social cost of those choices.

Being fully informed and bearing the full costs of their decisions will prompt businesses and individuals to demand efficiency and affordability in the actions that shape water consumption (e.g. water sensitive urban design in the case of builders and developers, recycled water systems, water efficient appliances).

Principle 8

Cities will use intelligent networks, including smart metering.

Cities of the Future will draw more fully on intelligent systems across a full range of networks, including smart water system design. These systems will enable the greater exercise of choice and accountability described in Principle 7.

Initial ideas for progressing Principle 7

- Ensure that the community has the opportunity to input into the planning of urban water infrastructure.
- Establish a national water literacy and engagement framework.
- Develop costing principles that price externalities including nutrients and energy to support the different values of various water sources.
- Provide customer and industry-focused information on the economic, social and environmental costs associated with different water supply choices.
- Establish mandatory minimum standards for water using appliances.
- Ensure a water saving ethos exists and is proactively supported in urban Australia.
- Provide the community with information to enable continued efficient water use.
- Investigate the potential to develop urban water markets that might provide greater choice for consumers.
- Build knowledge and a community of practice on Cities of the Future.
- Speak in plain language to connect with business, communities and residents.
- Engage with customers to understand their needs for intelligent networks and smart meters. Explore the opportunities they present.
- Acknowledge that developing intelligent networks is a new competence for the water sector and import knowledge by making links with other sectors.
- Remove incentives for water businesses to make a profit by selling water and sewerage services. Reward water businesses for saving water.

Initial ideas for progressing Principle 8 are included on next page



Paul Reiter, Executive Director, IWA (right) in discussion with Darryl Day, General Manager, Remote Operations, NT Power and Water



Prof. John Thwaites, Monash University



Peter Seamer, Growth Areas Authority

Theme 4: Adaptive and collaborative water sector

Principle 9

Sustainable cities will be served by adaptive integrated policy and planning frameworks.

Sustainable Cities of the Future will not be realised unless the water sector works more closely with governments, planners, businesses and the community at the first stages of urban planning.

The water sector will act as an active partner in the visioning, planning and development of cities with other key stakeholders.

Principle 10

Sustainable cities will be served by a multi-faceted water management system.

The water sector will become more diverse and dynamic, drawing on integrated solutions within the water sector (Theme 2), across sectors (Theme 1) and including government and the community (Theme 3).

The transition of the last decade from vertically integrated (dam-to-disposal) monopolies to a range of integrated water solution providers will continue. Some water providers may diversify to become multiple utility providers; others may become total water cycle providers.

Initial ideas for progressing Principles 8 to 10

- Build on the collaborative working relationships and culture that already exist in the water sector.
- Better define the role of government in the provision of water services – for example planning and policy versus service delivery decision-making.
- Seek outcomes by emphasising innovative/flexible approaches rather than using prescriptive approaches. Use demonstration projects to learn more about emerging technologies and how risks can be managed.
- Encourage competition in the water sector by removing financial and regulatory barriers to entry.



Outputs from working groups

Implementation Challenges for the Water Sector

For the water sector, these principles translate into the following challenges:

1. The water sector must embrace total water cycle planning (including the development of healthy waterways and water efficient "green city" outcomes) in addition to its traditional role of protecting public health and providing water security.
2. Total water cycle planning needs to be integrated into all land use planning functions to deliver sustainable city objectives.
3. Water-city planning must incorporate resilience and adaptability to future shocks (including climate change and population growth) and customer expectations.
4. Planning needs to be based on good science and collaboration – driven by collaborative communities of practice.
5. Citizens need to be water literate and engaged in water management.
6. The eco footprint of cities must be reduced and the water industry can play an important role in producing renewable energy and recycling nutrients.
7. Sustainable water management must be affordable, equitable and efficient.
8. The price of water must reflect its true community and environmental value.

It should be noted that these implementation challenges will apply to greater or lesser degrees in different cities and state jurisdictions across Australia.



Nick Apostolidis, General Manager, Client Development, GHD and Ken Matthews, Chair and CEO, National Water Commission



Ross Young, Executive Director, WSAA and Cheryl Batgol, Chair, EPA Victoria

Next Steps

While the workshop gave rise to a variety of views on future cities and the role of water in these visions, some common questions arose:

- Is there an agreed understanding of what constitutes a sustainable city?
- What are the multiple values of water to sustainable cities?
- How do we recognise these values?
- How do we optimise the use of all sources of water taking into account cost, social and environmental impacts and the protection of public health?
- What are our means of moving forward?
- What are the impediments?

There was also consensus regarding the need for further cross-sector collaboration and engagement with the community to address the universal 'wicked' problems of climate change, population growth and liveability in our future cities.

The outcomes of the workshop will be presented at Melbourne's Enviro 2010 conference in July. This discussion will engage many of the Ozwater 2010 participants as well as a new audience of environmental practitioners. The focus will be on developing an Action Plan that captures the Ozwater principles and contributes to the planning of cities and urban centres across Australia. Enviro 2010 will review and develop the initial ideas presented in this paper.

These actions, together with the principles themselves will then be presented to the IWA World Water Congress in Montreal in September 2010.

