

The Sydney Communiqué

The Context

The IWA *Cities of the Future Symposium* took place in Sydney on February 9-11, 2015, sponsored by Sydney Water, Water Services Association of Australia, and the International WaterCentre. The Cooperative Research Centre (CRC) for Water Sensitive Cities and CRC for Low Carbon Living were key participants in the presentations and attendance.

Challenges, inspiring case studies and proposals for action were collected throughout the three days.

The key messages that the leaders of the Symposium want to share with the international community are summarized below.

Water in Cities: More than just another Service

Cities attract increasing numbers of people because they offer unique economic and social opportunities. It is estimated that urban areas account for about 70 per cent of the world's gross domestic product. Cities offer benefits of agglomeration with the potential for greater productivity gains. Because of higher densities the provision of basic services to urban citizens is often more cost-effective when compared to rural services. However, this higher density, if not well managed, can result in a threat to resources – water, energy, food - and also the health and wellness of urban populations.

The goal is to provide water security¹ for cities by embracing a city planning agenda for a “risk-resilient” and “regenerative city” in harmony with the natural water cycle and natural ecosystems.

This agenda goes beyond water and addresses all urban disciplines. It recognizes how water actually shapes urban landscapes both because of natural water ways, storm and flood management, but also because risk-resilient and regenerative urban water services are only fully implementable if integrated in urban landscapes at the building, district and metro scales.

Reconnecting urban water systems to the way natural ecosystems operate will provide for:

- Rain water retained within the City as much as possible, emulating a natural ecosystem and therefore reducing the need to import “new” water supplies and reducing flood risk.
- Urban landscapes that are built with a broad range of liveability outcomes in mind, and with adequate conveyance capacity and areas for temporary detention of otherwise destructive flooding.
- “Wastewater” viewed as a resource.
- Water used and re-used by connected urban ecosystems with different needs and living in symbiosis (domestic, industries, irrigation)
- Urban planning that takes into account the entire basin to ensure overall withdrawal of the water resources in the catchment are within sustainable ecological limits.

¹ Water security is taken to be as defined by the United Nations - as the capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability. (source: <http://www.unwater.org/topics/water-security/en/>)

In other words, the “ecosystems” inspired city is planned holistically. It is connected to its catchment to embrace the Water-Food-Energy nexus in its urban planning. It adopts an “urban metabolism” framework in planning its water supply and sanitation, waste management, transport, energy supply and production, as well as economic activities for the metropolis by identifying cross-sectoral synergies at the district and building scale.

Water is only one element of urban planning, and water professionals can no longer work sequentially with other disciplines, but need to work together in trans-disciplinary teams inspiring each other.

People are at the center of urban developments and all planning components, including water, need to engage with citizens in understanding their needs and behaviours, as an integral part of the urban planning process.

The Challenges

The changes necessary to deliver cities-of-the-future are occurring, and case studies illustrating these concepts were shared during the symposium (add link to presentations), but this transition is still slow. The challenges identified during the symposium to move faster on this change agenda were organized along the following categories:

Creating an enabling context: sharing the vision on water in the “ecosystems” inspired city with world leaders, city leaders, and institutional leaders in a way that these leaders “own” the vision is a key element to initiating the change at a faster pace. Providing citizens with knowledge on the urban water cycle, including an understanding of the source and destination of the resources and enabling them to own this vision of the “ecosystems” inspired city will drive this process beyond the political cycle.

Fostering good planning: Integrated governance is a key pre-condition for achieving comprehensive planning outcomes - between scales and between disciplines at the institutional and at the professional levels, and through engaging with citizens. Engaging with citizens from the planning and co-design stage is key to future success. Other decisive elements for good planning are an adequately robust economic framework that accounts for key externalities and facilitate integrated funding mechanisms, having adequate tools to plan with uncertainty (growth, climate), and having institutional and cultural conditions to accelerate the adoption of innovations.

Fostering a good implementation environment: Capacity building of the key stakeholder sectors including the water sector and the urban development industry, and identifying business models for multi-disciplinary projects are the essential enablers to moving from planning to implementation. Continuous engagement with stakeholders and citizens fosters proper use and care of facilities once built.

Developing sound science base: There is need for scientifically rigorous decision support tools to support evidence-based planning, for embracing the water–energy–food nexus, for an urban metabolism framework to best evaluate how resources can be optimized, and for further innovative technologies on synergies between sectors allowing for resource recovery.

Appendix 1-workshop outcomes

The actions identified during the workshop, in order to move forward on the change agenda toward a resilient and regenerative city are summarized below, followed by a list of actions to take forward to the international community.

List of Actions Identified During the Workshop

Creating an enabling context:

- Identify existing demonstration projects/ case studies that can inspire leadership
- Identify non-political leaders to enable a global culture shift
- Water professionals to actively involve in political discussions - engage the public
- Developing a vision/picture of the future city as a key step in obtaining broad buy in to the big steps/changes that need to happen
- Economic Regulators to engage with citizens so that their objective moves from minimizing tariffs to adopting a risk-resilient and regenerative city approach.
- Create an alignment between political will and actionable items
- Workshop local councils, Community Group, State government agencies (planning health) to create a water vision
- Get the grass roots support with a simple vision (3-4 words)
- Communicate the problem so people understand why the solution and vision is required
- Have conversations with school students on water - explore value of water, love of water, respect for water in various cultures & civilisations
- Establish an international award of for excellence for projects which follow the “ecosystems” inspired approach to city planning
- Create a national/international competition/ benchmarking
- Use Social Media to engage citizens
- Use climate adaptation as an entry point for new concepts of urban development/design
- Inspire leaders to inspire others

Fostering good planning / developing sound science base

- Developing a framework for integrated approaches to designing governance systems
- Engage with citizens during the planning process, with participatory processes
- Influence how investment decisions are made (criteria for investments)
- Provide networking opportunities with different parties involved to create relationships
- Build a network or arena for critical professionals citywide to meet and start their own process
- Developing a water system modelling tool for planning new growth including synergies with other sectors
- Bring together planning and water professional communities through point forums, etc to build networks and share learning
- Incorporate the “ecosystems” inspired city principles into regional plans
- Develop a method and tools for scenario planning do ensure resilience
- Incorporate the outcomes of different technology projects into one 'sand pit ' modelling/ scenario planning tool for active use by practitioners
- Small scale projects as pilot projects allow for innovation (+ possible failure)
- Publicise, evaluate and highlight value and benefits of innovative solutions in the past to encourage further innovations in future
- Engage Young Water Professionals
- Open a dialogue with community about innovation: balancing the risk and potential
- Run an invention/design competition for high school students to promote interest in the sector
- Celebrate failures as lessons learnt
- Develop culture and capability of utilities to enable citizens in set agenda and innovate to deliver
- Convincing regulators that trials for innovation are a good investment in the future
- Incorporate non-market values in economic valuation of projects
- Method for valuing resilience

- Engage Federal and state treasuries in developing economic evaluation tools
- Improve knowledge of how existing multi-utilities (water& power& waste...) behave, plan, and function compared with single utilities. Evaluate the benefits.

Fostering a good implementation environment / developing sound science base

- Mapping a clear path of "strategy realisation". Good strategies with poor implementation often results in suboptimal outcomes.
- Engage regulators directly as a partner in objectives setting so that regulations are an incentive not a bottleneck
- Work with education to redesign the professionals entering the industry to be more trans-disciplinary
- Evaluate the potential of public private partnerships
- Take baby steps first then build from there. Trial -Pilot- Develop
- Use Green economy in defining new business models

The Proposed Actions

Creating an enabling context

1. Develop the water vision for the "ecosystems" inspired City and obtain endorsement from water professionals and from other urban services, architects, urban planners, mayors, citizens groups.
2. Assemble compendiums of inspiring case studies on the following topics:
 - a. Governance.
 - b. Technical solutions: centralized/decentralized, built/natural infrastructures, etc...
 - c. Integrated planning of scales and of disciplines.
 - d. Citizens' engagement.
3. Develop a framework for assessing the Cities along the "ecosystems inspired City" principle, and for monitoring their progress. A water sustainability award is given for progress and for achievements.
4. Promote the recognition of non-market benefits and develop a robust economic valuation framework for benefit-cost analyses of urban water projects as a platform for engaging multiple stakeholders

Fostering good planning & implementation

5. Identify [x] pilot cities adopting the "vision" and in which City planning services reorganize into trans-disciplinary teams working on geographical clusters in the city in symbiosis with the metro planning team, and catchment management institution. Develop a transferable framework for other cities, and use the pilots as inspiration for others.
6. Develop educational attainment to include the "vision" in educational and training system at universities and professional education.
7. Develop training materials to be delivered to city planning departments to restructure their organization to embrace the "vision".
8. Identify [x] pilot cities to endorse the need for acquiring adequate informative data for sound science base decision making, and implement a data collection and management plan that enables the resilient and regenerative planning. Develop a transferable framework for other cities, and use the pilots as inspiration for others.
9. Develop a tool for Urban Metabolism based modeling of resource fluxes (water, energy, nutrients, carbon) in and out of the city, of the sub-district, and of a building. Test the tool in [x] pilot cities.
10. Identify [x] pilot cities to adopt a citizens engagement plan and implement it.
11. Develop a methodology for benefits and co-benefits assessment together with financial and non-market values for cities
12. Enable funding of pilot cities to implement organizational change and technical measures.