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Program Leader's Message

Dear Colleagues,

Once again, it has been a busy few months for the *National Urban Water Governance Program*.

The Program's Second Annual Stakeholder Forum was held in Perth in February, and was attended by NUWGP research team members, several of our research colleagues from Monash University, Steering Committee members, industry representatives, and Dr. John Radcliffe of the National Water Commission. Two lively days of debate followed NUWGP presentations on recent research findings, and the diverse stakeholder groups represented endorsed the need to develop a common vision for achieving water sensitive cities across Australia. More details of the Forum can be found on page 2 of this newsletter.

Over the last few months, members of our research team have also been busy presenting at events and conferences, such as an invited key-note address at the recent ENVIRO-08 Conference which saw a wide audience of sustainability practitioners in attendance.

The NUWGP would like to welcome our new funding partners, the Department of Sustainability and Environment in Victoria, the International Water Centre in Brisbane, and Dow Chemical Company. Together with our other funding partners, we will be developing a series of capacity building workshops to be delivered across Australia in early 2009. For further details, please see page 4 of this newsletter.

Our latest Steering Committee meeting was held in Brisbane on June 16th. A highlight of the meeting was a tour of the Coomera Waters residential estate in the northern Gold Coast region and of the Bundamba Advanced Water Reclamation Plant west of Brisbane. More details of this fieldtrip are available on page 5 of this newsletter.

Additionally, in response to the recent Draft National Principles for Urban Water Planning, the *National Urban Water Governance Program* spearheaded a submission to the Council of Australian Governments (CoAG), detailing concern with the narrow water supply focus. The Inter-jurisdictional Project Group on Urban Water Reform was encouraged to consider a total water cycle approach, in-line with the goal of achieving Water Sensitive Cities. Details can be found on page 6 (and a copy of the submission is available online).

We hope you enjoy this edition of the eNewsletter and we welcome your contribution to our next newsletter.

A/Prof. Rebekah Brown
Program Leader



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NUWGP 2nd Annual Stakeholder Forum

The NUWGP's 2nd Annual Stakeholder Forum was held over the 7th and 8th of February, 2008 in Perth. The Forum was attended by the Program's research team, Steering Committee members, invited industry experts, leading sustainability academics, and National Water Commissioner, Dr. John Radcliffe.

The first day of the Forum was a dynamic day of NUWGP research findings on transitioning to a Water Sensitive City, perceived drivers and barriers to sustainable urban water management, community receptivity to alternative water sources, and understanding National and local urban water reform processes. Representatives from the three cities being studied by the Program: Brisbane, Melbourne and Perth, provided information on recent local reforms, while Dr. Radcliffe presented on the National reform context. In addition, Prof. Nigel Tapper, a leading climatologist from Monash University, presented findings on the need for retaining vegetation and water in the city to combat the 'urban heat island effect' currently being experienced by Australian cities, particularly given continuing climate change. The first day of the Forum finished with a Practitioner Panel Discussion



Dr. John Radcliffe



Prof. Nigel Tapper

facilitated by A/Prof. Rebekah Brown involving representatives from each of the case study cities, including Mr. Chris Chesterfield (Vic), Dr. Mike Mouritz (WA), and Mr Mark Pascoe (Qld) wherein the panel was asked to discuss in turn their perspectives on possible solutions to overcoming the barriers to change in the urban water sector.

The second day of the Forum focussed on the future, as various invited speakers and Program team members presented their findings. They also identified the most pressing questions requiring further research.

A/Prof. Ana Deletic, a representative from the Facility for Advancing Water Biofiltration (FAWB) and Monash University presented on the concept of "Cities as Water Supply Catchments" wherein stormwater harvesting was identified as an essential component of a Water Sensitive City because of the dual benefits of protecting receiving waterways from pollution and creating a new water supply source. Participants were then asked to break off into city-based workshop groups and challenged to develop specific project strategies for improving urban water governance. This process elicited much lively debate regarding the similarities and differences amongst the case study regions. This session was concluded with a summary from Rebekah Brown on possible scenarios for how future research on transitioning to Water Sensitive Cities could continue.



A/Prof. Ana Deletic





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Demonstration Projects Research

It is well acknowledged that to transition to more sustainable urban water futures, the urban water sector is limited by a range of institutional impediments including fragmented organisational responsibilities, disconnected regulatory and policy frameworks, and prohibitive capital and/or maintenance costs¹. Previous research with the Facility for Advancing Water Biofiltration (FAWB) highlighted that one of the key factors for enabling institutional change was demonstration projects. Also, a series of interviews conducted by the NUWGP in Brisbane, Melbourne and Perth in late 2006 found urban water professionals considered demonstration projects to be a solution or 'way forward' to overcome the litany of barriers identified.



Dr. Megan Farrelly

Demonstration projects have long been used in the urban water sector to build sectoral confidence in new technologies and practices. However, despite many useful and insightful demonstration projects around the country, very few of these projects are replicated or go on to become mainstream practice. This is a result of a number of factors which the NUWGP will explore in this piece of research. Furthermore, the research will investigate four projects in each city to understand the drivers of each project, the operational processes involved and how, if at all, the projects have influenced change in urban water management.

Since March 2008, Dr. Megan Farrelly, a Research Fellow with the Program, assisted by Ms. Caitlin Davis, has interviewed over 150 urban water professionals including Local and State Government representatives, and leading consultants, developers and researchers across Melbourne, Perth and Brisbane to understand the role of demonstration projects in helping overcome barriers. Analysis is currently underway and the final research outcomes will be available in early 2009.



Ms. Caitlin Davis

The demonstration projects selected as case study examples for the project include:



Inkerman Oasis

MELBOURNE:

- Lynbrook Estate, Lynbrook
- Inkerman Oasis, St Kilda
- 60L Building, Carlton
- Aurora Estate, Epping North

PERTH:

- Kwinana Wastewater Recycling Plant, Kwinana
- Wungong Urban Water, Wungong
- 'The Green' Brighton Estate, Butler
- Liege Street Wetland, Cannington

BRISBANE:

- Rocks Riverside Park, Seventeen Mile Rocks
- Coomera Waters, Coomera
- Payne Road, The Gap
- Rochedale Urban Planning, Rochedale

¹ Brown, R., Farrelly, M. and Keath, N. (2007) *Summary Report: Perceptions of Institutional Drivers and Barriers to Sustainable Urban Water Management in Australia*. Report No. 07/06, National Urban Water Governance Program, Monash University, December 2007, ISBN: 978-0-9804298-2-4



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Creating Water Sensitive Australian Cities: Capacity Building Workshops

Across Australia and internationally it has become increasingly accepted that current approaches to urban water management are resulting in unacceptable outcomes (such as degraded catchments and waterways, vulnerability to water scarcity, high energy consumption and greenhouse gas emissions, lack of community involvement). There is now widespread agreement about the need to facilitate a major transition in the way water is managed in cities.

The research of the NUWGP has been investigating the institutional barriers to sustainable urban water management as well as the governance factors required to transition to Water Sensitive Cities in Australia. This research has consistently highlighted the lack of suitable institutional capacity as the most significant issue preventing a transition. Insufficient skills and knowledge, organisational resistance, unsuitable institutional arrangements and policy failure, lack of political will, limited regulatory incentives, and lack of a common vision are identified as some of the institutional capacity issues.

Dow Chemical Company has committed to support the International Water Centre (IWC) and the NUWGP, Monash University to develop and deliver a series of industry capacity building workshops across Australian cities to address the significant institutional and social impediments currently preventing progress towards water sensitive futures.

These events are aimed at a wide range of professionals from across the urban water sector, including representatives from water utilities, State and Local Government organizations, land developers, consultants, research institutions, and peak community groups. The workshops will showcase cutting edge social research around the institutional factors most important for enabling change towards water sensitive futures and will also provide an important opportunity for diverse stakeholder groups to come together to debate and formulate a common strategy for transitioning. Workshop participants will work collaboratively with research and thought leaders to refine and develop a series of recommendations around how to progress sustainable change in Australia. The broad solutions canvassed at the forums will then be the subject of follow-up collaboration and research culminating in actionable recommendations.

The Capacity Building Workshops are anticipated to begin in February 2009 and run through to April 2009 and are to be held in: Melbourne, Brisbane, Perth, Sydney, Adelaide and Canberra. Further details will be publicised soon.



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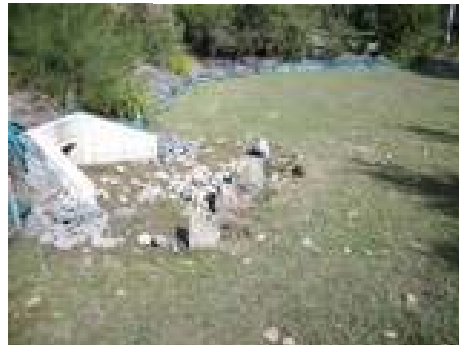
Field Trip: Coomera Waters and the Bundamba Advanced Water Reclamation Plant, QLD

At the most recent Steering Committee Meeting, June 16th – 17th, 2008, members were hosted by Brisbane City Council on a fieldtrip to Coomera Waters, in the Northern Gold Coast region, approximately 40 minutes from Brisbane CBD, and to the Bundamba Advanced Water Reclamation Plant near Ipswich approximately 40 kilometres west of Brisbane. (All photos courtesy of Phillip Johnstone, DSE Victoria).

COOMERA WATERS:

The Steering Committee toured the Coomera Waters residential subdivision, led by Shaun Leinster of DesignFlow Pty Ltd. The development at Coomera Waters was the first widespread application of WSUD in South-East Queensland, and includes bio-retention systems, grassed swales and constructed wetlands. The staged development of bio-retention systems has been an important element in overcoming problems of clogged/damaged systems during building construction.

Coomera Waters – Pre and Post Construction Swales



Another important element of Coomera Waters is the Community Title wherein the Body Corporate is responsible for maintaining communal spaces and infrastructure management. The development has also been influential in supporting the development of a range of guidelines and training courses as part of the SEQ Healthy Waterways Partnership. As Coomera Waters is still under construction, the Steering Committee had the opportunity to witness various stages of development, from fully functional, to temporary systems (see photos).

BUNDAMBA ADVANCED WATER RECLAMATION PLANT:



Mario Pirrone of the Western Corridor Recycled Water Project led the Steering Committee on a tour of the Bundamba Advanced Water Reclamation Plant. The committee learnt about how the internationally recognised Alliance assisted in the rapid implementation of the plant (Stage 1A completed in under 10 months).

The reclamation process includes multiple barriers, and the group witnessed the operation of microfiltration, reverse osmosis and the advanced oxidation processes. The plant currently supplies recycled water to the Swanbank Power Station and

will soon produce up to 80ML/day of purified recycled water to South East Queensland.



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Draft National Principles for Urban Water Planning

Monash University Response to the Draft National Principles for Urban Water Planning

The Inter-jurisdictional Project Group on Urban Water Reform has recently prepared Draft National Principles for Urban Water Planning to inform the Council of Australian Governments (CoAG) on the delivery of an enhanced National urban water reform framework.

The National Urban Water Governance Program led the development of a response prepared with input from 16 Monash University researchers, academics and associates working at the forefront of best practice water management, governance, climate change and sustainability and drew upon expertise across the Arts, Engineering, Science, Business and Economics, and Law faculties.

The Monash University submission was concerned with the narrow 'water supply' scope of the Planning Principles and the Inter-jurisdictional Project Group on Urban Water Reform was strongly encouraged to broaden the scope of the Draft National Principles for Urban Water Planning to that of a total water cycle focus.

While water supply security is important, recognised best practice urban water management requires urban water planning to protect, maintain and enhance the 'multiple' benefits and values of the total urban water cycle for society, including:

- Supply security;
- Public health protection;
- Flood protection;
- Waterway health protection;
- Amenity and recreation;
- Mitigating the urban heat island effect;
- End-use conservation;
- Greenhouse neutrality; and
- Demonstratable long-term environmental sustainability.

The Inter-jurisdictional Project Group on Urban Water Reform was invited to meet with the Monash University signatories as a part of the review process for the document.

The Monash University submission is available on the National Urban Water Governance Program's website for interested parties: www.urbanwatergovernance.com.

Once again, we would like to thank our Monash colleagues for their valuable contributions, enthusiasm, interest and support.



MONASH University



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ANNETTE BOS (PhD candidate)

Annette joined the program in January 2008 as a PhD researcher. Although an engineer by education, her main area of interest concerns governance of the water services sector and organisational development of water organisations. She views her research project in the National Urban Water Governance Program as a unique opportunity to study at the interface of technical and social facets of sustainable water management in an urban environment.

Prior to joining the program, Annette was a Lecturer in Water Services Management at UNESCO-IHE in Delft the Netherlands. She has been extensively involved in research, consultancy and educational activities in Bangladesh, Burkina Faso, Ghana, India, Kenya, The Netherlands, South Africa, Tanzania, United Kingdom, Zambia, and Zimbabwe. She also attended a number of international water conferences and platforms. Before joining UNESCO-IHE 7 years ago, Annette obtained a Masters of Science from Loughborough University in the United Kingdom. Previously, Annette has been working for 3 years as a regional engineer for the Mvula Trust in South Africa. This large NGO is active in the rural and peri-urban water and sanitation sector.



Ms. Annette Bos

Annette is undertaking a social research project in which the outcomes, benefits and limitations of a locally-based, multi-disciplinary, participatory approach to integrated, sustainable urban water management are assessed and evaluated.

The research project takes place in the context of the Cooks River Sustainability Initiative, Sydney, NSW. The vision of the Cooks River Sustainability Initiative (CRSI) is to establish the Cooks River Catchment as a leader in best practice catchment management in an ultra-urban, multi-jurisdictional setting, collaboratively improving ecosystem health through the adoption of change management governance and engendering a community sense of place and connectivity. Within this initiative, eight local government councils collectively address sustainable urban water management across the Cooks River Catchment.

LARA WEBERLOFF (Honours Candidate)

Lara is currently completing a combined Arts/Law degree at Monash University with an Arts major in Geography and Environmental Science. Lara has recently commenced an Honours project as part of her Arts degree that explores issues of water conservation and urban water governance.



Ms. Lara Weberloff

More specifically, the project is exploring the different institutional responses to drought that have been implemented in Melbourne and Perth; in particular the research focuses on water restrictions and desalination. This research aims to explore whether the introduction of desalination will undermine the positive behaviour change that the restrictions have achieved in terms of water conservation. The project will also evaluate the extent to which desalination and water restrictions are consistent in the messages they send to urban consumers about water use and conservation. Additionally, this research will explore the social and political context that resulted in initially differing responses to drought within Melbourne and Perth and the current preference for desalination as a solution to water scarcity in both cities.

Through this Honours project, Lara hopes to gain a better understanding of institutional responses to water shortages and methods to encourage water conservation in urban settings.



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Book Chapters:

Focusing on the development of integrated approaches to sustainable urban water, the Series should inform the work of urban water management practitioners, policy-makers and educators throughout the world.

Data Requirements for Integrated Urban Water Management - issuing from UNESCO's International Hydrological Programme project on this topic - is geared towards improving integrated urban water management by providing guidance on the collection, validation, storage, assessment and utilization of the relevant data.

Program Leader Rebekah Brown has published two chapters from this seminal work:

Brown, R.R. (2007) 'Principles for Institutional and Social Data Collection'. In Fletcher, T.D. and Deletic, A. (eds), *Data Requirements for Integrated Urban Water Management*, Taylor & Francis, London, pp 159 – 169.

Brown, R.R. (2007) 'Social and Institutional Data'. In Fletcher, T.D. and Deletic, A. (eds), *Data Requirements for Integrated Urban Water Management*, Taylor & Francis, London, pp 281 – 299.

Refereed Journal Articles:

Brown, R.R. (2008) Local Institutional Development and Organisational Change for Advancing Sustainable Urban Water Futures, *Environmental Management*, 41(2):221 – 233.

This paper presents the local institutional and organizational development insights from a five-year ongoing interdisciplinary research project focused on advancing the implementation of sustainable urban water management. While it is broadly acknowledged that the inertia associated with administrative systems is possibly the most significant obstacle to advancing sustainable urban water management, contemporary research still largely prioritizes investigations at the technological level. This research is explicitly concerned with critically informing the design of methodologies for mobilizing and overcoming the administrative inertia of traditional urban water management practice. The results of fourteen in-depth case studies of local government organizations across Metropolitan Sydney primarily reveal that (i) the political institutionalization of environmental concern and (ii) the commitment to local leadership and organizational learning are key corporate attributes for enabling sustainable management. A typology of five organizational development phases has been proposed as both a heuristic and capacity benchmarking tool for urban water strategists, policy makers, and decision makers that are focused on improving the level of local implementation of sustainable urban water management activity. While this investigation has focused on local government, these findings do provide guideposts for assessing the development needs of future capacity building programs across a range of different institutional contexts.





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Coppock, M., and Brown, R. (2007) Advancing Sustainable Water Futures for Melbourne: Analysis of Expert Opinion on Structural and Non-Structural Approaches, *Water Practice and Technology*, 2(2): 0054.

This social research project investigated industry leader perspectives and decision values in relation to promoting management techniques to address sustainable water supply issues across urban regions. The conditions under which structural (engineering) and non-structural (behavioural change) solutions are prioritised and implemented was investigated through semi-structured interviews of senior representatives from water authorities, State Government agencies, local government, developers, consultants and academics across Metropolitan Melbourne. In theory, a mixed structural and non-structural approach is typically advocated for advancing sustainable urban water futures. However, there is a lack of knowledge of the decision criteria of how to select and systematically integrate these approaches. The results reveal that industry leaders would not promote non-structural solutions without the primary support of a structural solution. Largely due to lack of certainty about social receptivity, this was perceived as presenting a substantially higher risk to achieving a sustained reduction in potable water demand. Therefore, structural approaches were viewed as much easier to implement, monitor and enable reliable outcomes. This evidence strongly suggests that without social research directed at quantifying both the uncertainties and outcomes of non-structural solutions, it is unlikely that industry leaders will be in a position to effectively promote and resource their implementation as an independent initiative.

Brown, R., and Davies, P. (2007) Understanding Community Receptivity to Water Re-use: Ku-ring-gai Council Case Study, *Water Science and Technology*, 55(4):283 – 290.

This social research project investigated community receptivity to using rainwater and greywater as alternative domestic water sources. It was focused in the Ku-ring-gai local government area in northern Sydney, and involved a household questionnaire followed by community leader interviews and resident focus groups. Trends, such as a prolonged drought and increasing population, compound the current crisis and concern facing Sydney's available water supply. Substitution of domestic potable water has been promoted as part of the solution. The research results revealed that community receptivity was highest for external uses, such as watering gardens and flushing toilets, and progressively decreased with increasing personal contact. Receptivity to greywater reuse fell more rapidly with the community believing there was a higher health risk associated with its use. Gender and cultural background were revealed as significant variables and give insight into the design of strategies to target these demographic groups. This evidence provides a reliable stocktake of current receptivity revealing that the community has good awareness and positive association with water reuse for many household activities. This now needs to be harnessed through programs targeted at developing skills, resources and motivation for new water reuse practices and technologies across diverse social groupings.



A/Prof. Rebekah Brown



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Message to eNewsletter subscribers

We hope you have enjoyed reading this eNewsletter edition. We would like to thank you all for your ongoing support. We welcome your contributions to future eNewsletter editions. If you would like to add your thoughts, any insights from your organisation or sector, or include information about upcoming events relating to urban water governance in Australia, please feel free to contact us (contact details below).

We look forward to hearing from you!

www.urbanwatergovernance.com

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