

Development of policies for water cycle reform in Greater Melbourne and Sydney

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Presented to the Water and Climate:
policy implementation challenges
conference

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Presentation overview

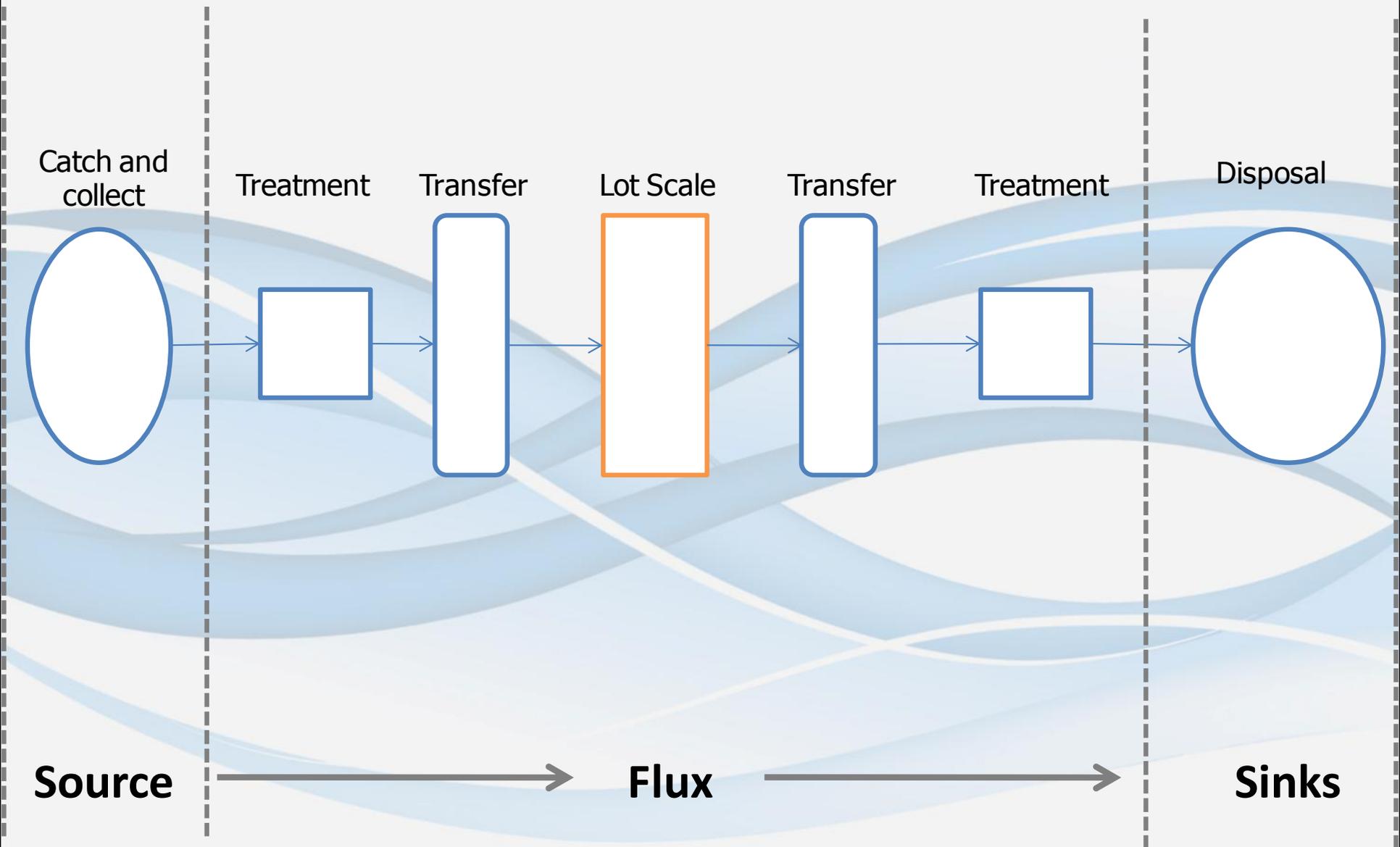
- Introduction
- Background and methods
- General findings
- Policy issues
- Concluding observations

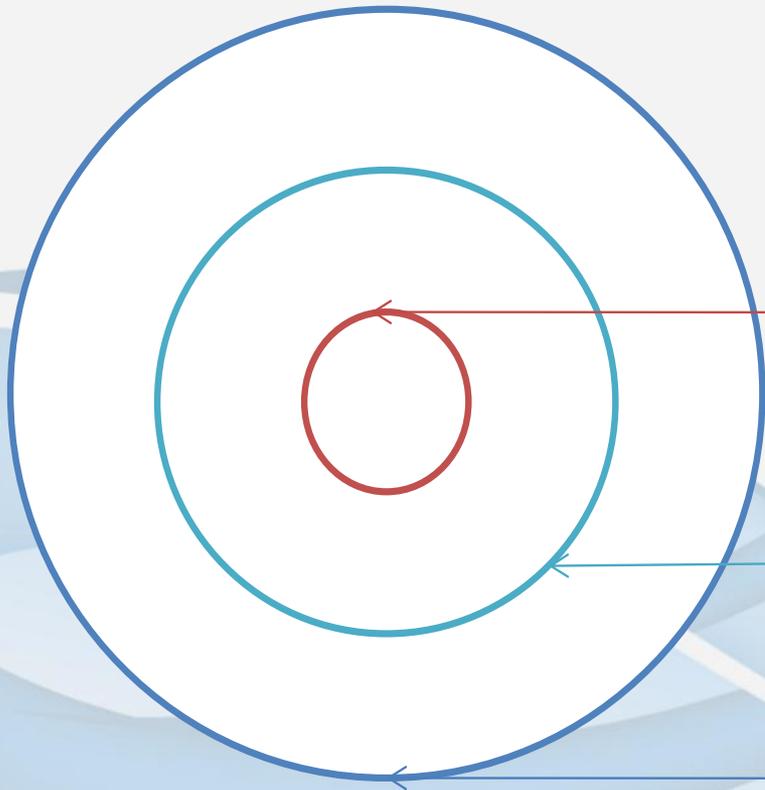
Introduction

- **The authors contributed to developing and implementing policies for water reform over the last 20 years, involving:**
 - Forensic examination and systems analysis
 - Alternative options
 - Policies for implementation
- **Includes a wide range of investigations, in particular:**
 - Alternative options for the Greater Sydney and Melbourne regions
 - Living Melbourne, Living Victoria policy (announced on 23/04/2012)
 - Sydney Water alternative water strategy
- **This presentation provides an overview of key drivers that impact on reform**

Background and methods

- **Continuous development of integrated systems analysis approach to understanding water cycle options during the last decade**
- **More recent analysis commissioned by Sydney Water Corporation and the Victorian government**
- **Forensic analysis and alternative Options created to generate debate and understanding about alternative futures**
- **The process then included a range of interactions:**
 - Workshops
 - Meetings
 - Private conversations
- **This process facilitated:**
 - Sharing of additional data and information
 - Additional conversations about challenges
- **More than 250 interviews, meetings, workshops and discussions.**

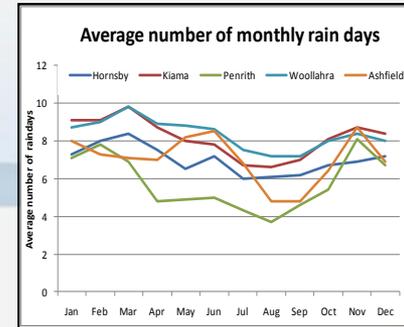
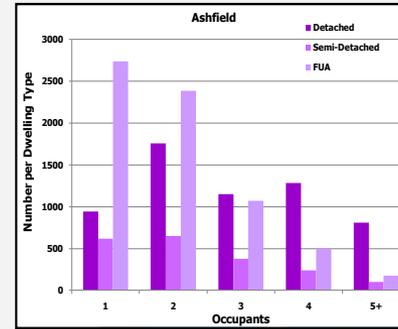


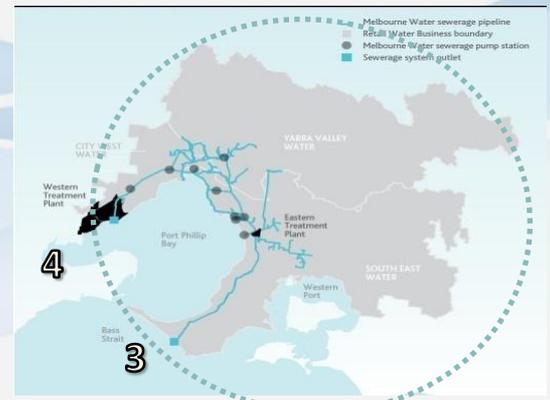
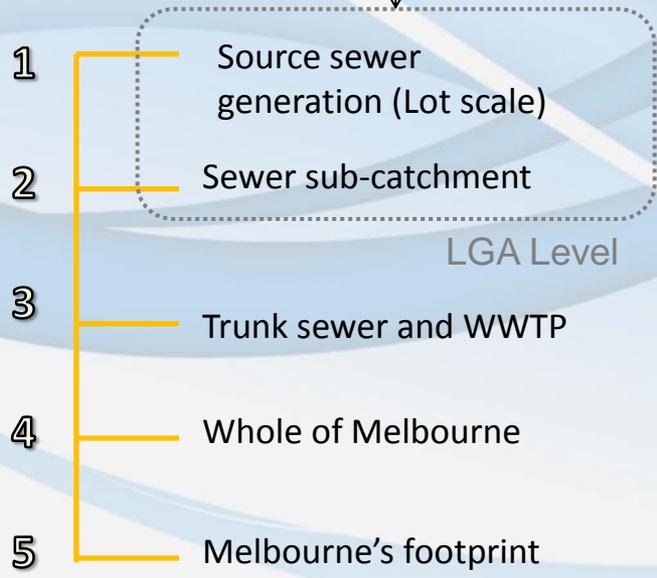
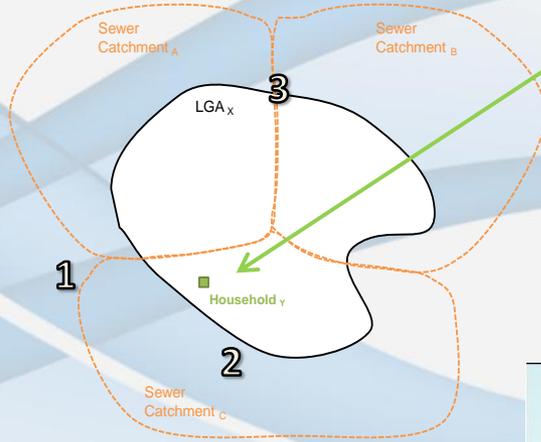
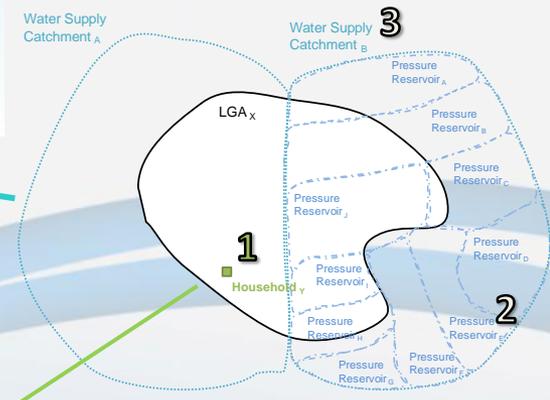
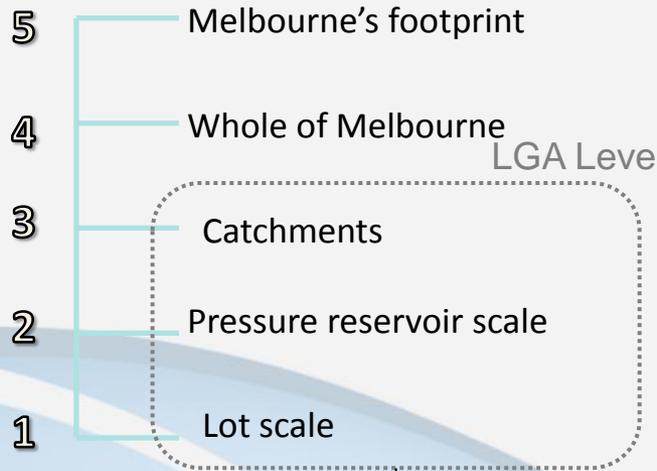


Lot Scale

Water demand catchment
and sewer network scale

Whole of Melbourne scale





General findings

- **Urban settlements are subject to a continuum of temporal and spatial change**
 - Driven by demographic, economic, political, environmental, cultural and social factors
- **Transformative period for Melbourne and Sydney during the last decade**
 - Drought, floods, population growth, aspirations and politics
- **A change from reliance on limited centralised options to diverse water management strategies**
 - Multiple objectives
- **Water management strategies dominated by large regional infrastructure**
 - Consensus of opinion from consultants, bureaucracy and authorities
 - Dismissal of smaller scale options and alternative business models
- **Ongoing droughts also impacted on the character and amenity of cities**
- **The local and decentralised actions of citizens ensured that water supplies for cities were not exhausted**

General findings

- **A forensic investigation and systems analysis of water cycles in a metropolis is a significant task**
 - Dependent on open and transparent engagement with stakeholders
 - Responsive question and answer processes are required
- **The water industry is not familiar with integrated systems analysis**
 - Seeking common understanding and essential data is a challenge
 - Demanding on staff and available time
 - Traditional analysis with discrete assumptions limits understanding of the dynamics of a system
- **The urban water industry is essentially a transport industry**
 - Adequate spatial and temporal understanding of metropolitan water and sewage systems has not been achieved
 - Operation of water utilities may not be optimum or based on logistics that apply to any transport dependent industries

Policy issues – contracts and confidentially

- **Alternative and independent investigations of water options are subject to onerous contract negotiations**
 - Limits ability to investigate and obtain important information
 - Substantial time delays
- **A majority of useful information protected by confidentiality requirements does not pose commercial or political risk upon release**
 - Significant transaction costs and loss of transparency
 - A barrier to innovation
- **These processes are inconsistent with “public ownership” of water resources and water is a “public good”**
 - Projects that aim for change and innovation are subject to significant institutional barriers
 - Traditional projects subject to less barriers – pathway dependence

Policy issues – availability, quality and consistency of data

- **Beyond global averages and generalisations:**
 - Limited availability of essential spatial and temporal data
 - Highly variable characteristics of data across a Metropolis
- **Limited access to long sequences of historical data throughout a city**
 - Out sourcing of data management versus corporate knowledge
 - Limited understanding of spatial and temporal performance of urban water cycles
 - It is unlikely that the costs and benefits of current practice or alternatives is understood
- **Limited spatial information implies that the economics and options values of water cycle management are not well understood**
 - Water cycle management is a transport paradigm
 - Optimum management requires spatial understanding beyond global averages and “pumps and pipes” assumptions

Policy issues – control of information

- **It is common for individuals in the water sector to act as “gatekeepers” to limit access to information:**
 - Need to facilitate equal and transparent access to data for all stakeholders
 - Operation of publicly owned authorities must embrace efficient and transparent processes – allow balanced consideration of all alternatives
- **Access to information determines the evenness, equality and innovation in the water sector**
 - The sector is dominated by those who collect the data and manage the system
 - This asymmetry limits innovation, alternative solutions and new ideas
- **Water monopolies are Government Business Enterprises that are remote from public ownership or scrutiny:**
 - Regulatory models do not allow sufficient access to data from “semi-private” companies – no competition of ideas
 - Direct and indirect economic dependence on water monopolies limits diversity of ideas and options – creates normalised opinions.

Policy issues – Planning for the Future

- **Development of alternative policies and options requires detailed understanding of current processes**
 - A wealth of data is available for Melbourne and Sydney
 - Spatial and temporal data is essential for development of policy and decision making
- **Planning is limited to system wide averages or to a micro level associated with particular types of infrastructure (such as a pump or a pipe network).**
 - Limited integration of the water cycle – silos remain
 - Little or no integration with wider society and environmental systems
 - Disagreement about the need for and meaning of integration
- **Analysis restricted to a preferred physical asset**
 - Narrow definition of costs and benefits
 - Whole of system impacts are rarely considered
 - The time cost of money and deferral of investment is not considered

Policy issues - aspiration

- **Aspiration to a better future is a basis element of successful policy**
 - Large number of individuals demonstrated good will and willingness for positive change in the sector
 - A majority of executives and elected representatives also provided good support
 - Strong support from the community
 - Water and the environment is important to people
- **Transparent engagement is essential to aspiration**
 - Importance of the journey
 - Collective development of policy

Final observations

- **This investigation included a wide range of individuals and organisations**
 - Common aspiration for evolution of the sector
 - Different levels of capability that are difficult to manage
- **Variable quality of data and information is a serious issue**
 - Reliable information required for evidence based policy processes
 - The metropolis is a variable proposition
- **Success of policy processes is critically dependent on engagement**
- **Confidentiality and contract issues are a barrier to innovation and competition**
 - High transaction costs
 - Need to manage “gatekeepers” of information
- **Narrow structure of monopoly water industry is a limiting condition**
 - Economic dependence, inertia and a sameness of opinion
- **The full costs and benefits of water cycle management are not considered**