Pathways to water resilient South African cities

Launch of Community of Practice

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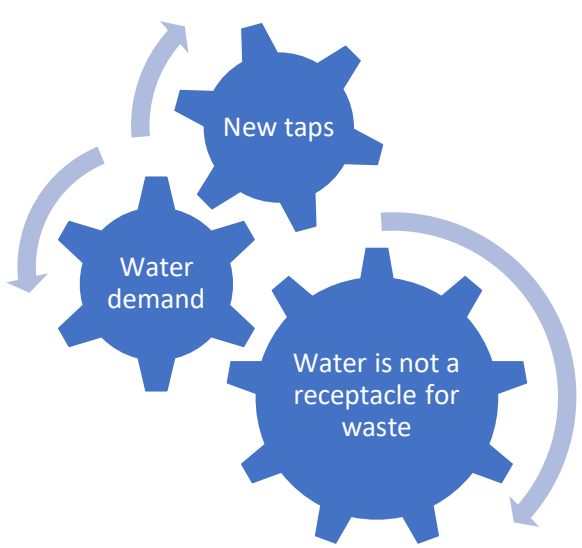
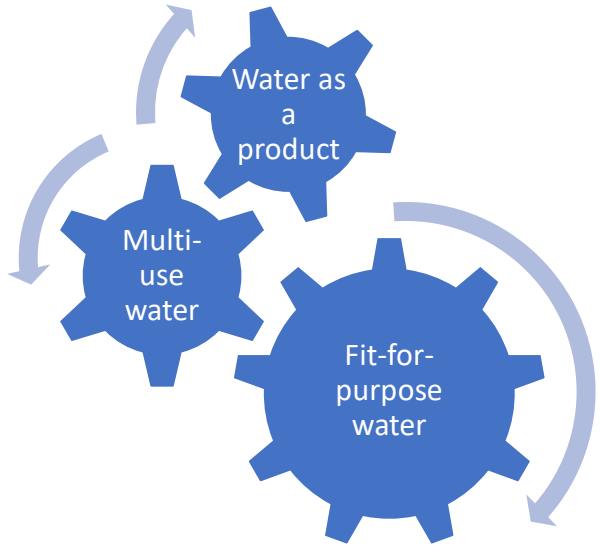
A resilience approach for SA

- Integration across water sectors in response to multiple risks (breaking silos)
- Emphasising links between drought, flood and other water-related challenges
- Harnessing nature as a buffer to hazards (blue-green infrastructure / waterscapes)
- Demonstrating how WSD could improve water quality, water quantity, biodiversity and amenity – i.e., liveability
- Rethinking governance in terms of scale and actors
- **Water Sensitive Design (WSD) / Water Sensitive Cities (WSC)**



New sources



New thinking

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Water Sensitive Design and Water Sensitive Cities

"Water sensitive cities are sustainable, resilient, productive and liveable through a combination of physical infrastructure, governance arrangements and social engagement"

Water sensitive design is the process, Water sensitive city is the destination

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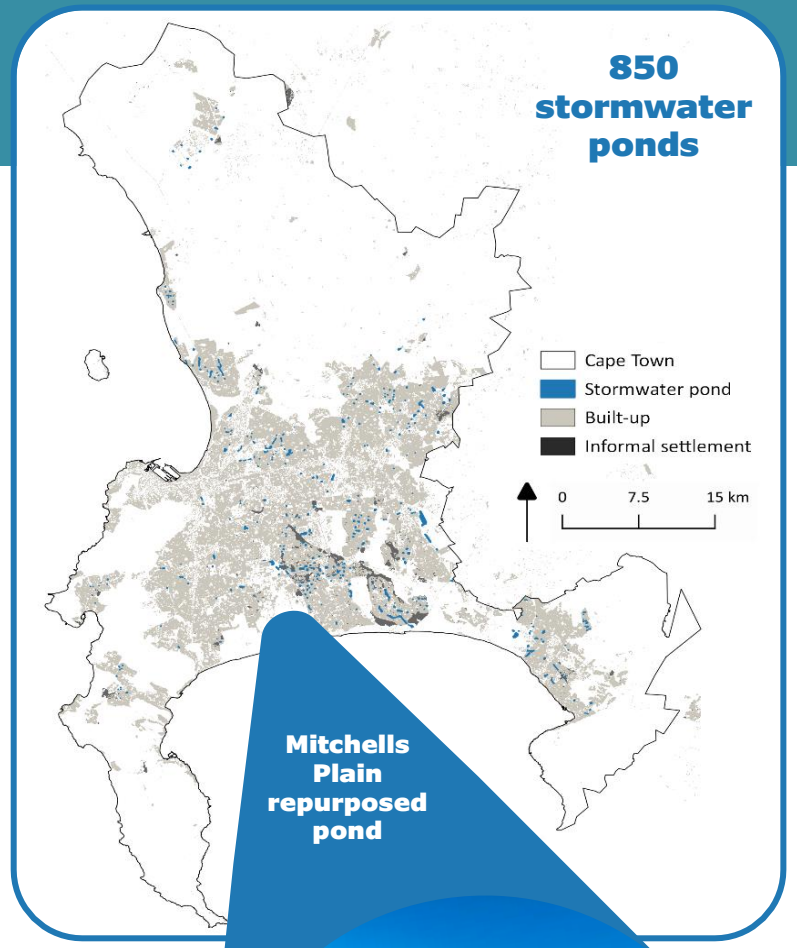
Source: CRC for Water Sensitive Cities

PaWS1 project - key elements

- Nature-based approaches that link storm runoff and wastewater to <u>water supply</u>
- Water sensitive (urban) design elements and landscape-based solutions
- Integration of built water infrastructure with green infrastructure in a decentralised manner
- Physical and institutional integration pathways (planning, policy)



"to identify opportunities for the physical and institutional integration of hybrid, decentralised Blue-Green Infrastructure into the urban water cycle to accelerate a transition towards water resilience"

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Before and during construction – Mitchell's Plain

After construction – Phase 1

Key Findings – Phase 1

1. Low-cost retrofitting is possible but requires residents' consent and input
2. #Co-Design, #Co-Implement , #Co-Maintain
3. High water table is a technical challenge
4. Retrofit can increase infiltration by 15 %
5. Future scenarios result in more SWH (110%)
6. Even 0.5m of soil can remove > 76% of metals and Phosphorus
7. Retrofitted ponds can improve groundwater quality

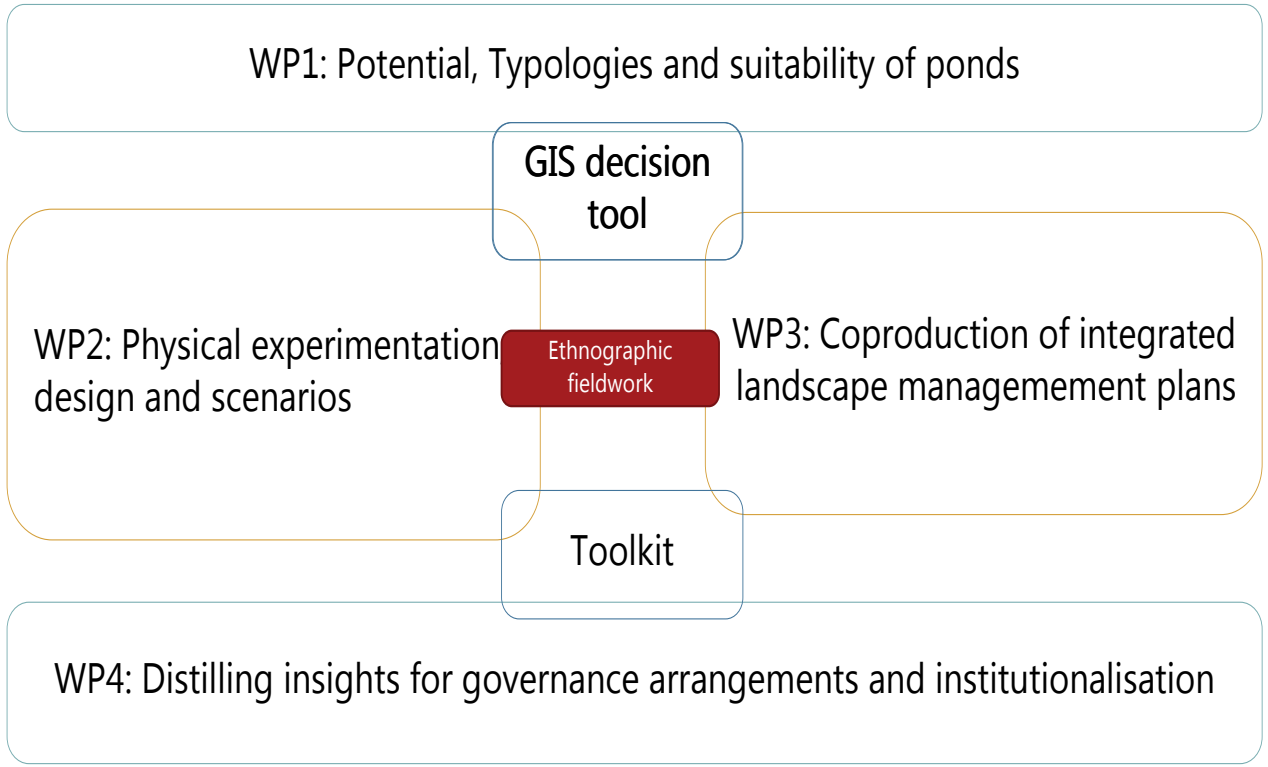
Total retrofit cost: R300 000
Engagement: R10 000
Retrofit Design: R39 000
Materials: R49 000
Labour & PPE: R42 000
Monitoring Wells: R68 000
Topographical Surveys: R49 000
Other: R43 000

Multifunctional infrastructure

Increasing water re-use	Enhancing cultural and heritage associations with water systems	Increasing access to blue-green space
Increasing equity	Reducing the Urban Heat Island effect	Managing water quality
Flood control	Community services connection with water systems	Enhancing biodiversity

PaWS2 - Why the CoP?

"What are the opportunities for repurposing existing stormwater infrastructure as BGI with multiple functions to achieve water resilient South African cities?"



- Co-production around case sites
- Local, civil and city stakeholders
- Platform to foster network building and social learning
- Collaboratively leverage existing policy to achieve stronger BGI in SA cities
- Newsletters, articles, workshops

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Seminars / Newsletters for PaWS2 CoP - 2024

Proposed newsletter (and associated work package)	Discussion points for seminar	Lead author / presenter	City / external stakeholder	Date of seminar	Event type
WP1 – *Stormwater ponds for a water resilient Cape Town: overflowing with potential?*	Usefulness of MCA process and GIS-based screening tool for selection and use of stormwater ponds in Cape Town as multifunctional blue-green infrastructure - planning perspective as well as some of the practicalities of managing these spaces	Jess Fell	Andrew McDonald and Joanne Jackson	3 November 2023 – Launch of CoP	Webinar
WP2 – *Stormwater ponds as biodiversity 'stepping stones'.* (Could include educational flyer as well as a newsletter)	Explain why biodiversity is important; highlight the use and protection of indigenous (endangered) species. Comment on the use of BGI as 'stepping stones'. Share examples from pond planting	Julia Mclachlan	City's Biodiversity department / NGOs	February 2024	Webinar
WP2 – *Transition to novel Internet of Things technology for management of groundwater resources*	Use of sensor technologies in the monitoring of blue-green infrastructure projects (BRGM and MeteoNAPP groundwater dashboard; telemetry monitoring)	Miriam Arinaitwe / John Okedi / Nompumelelo Mnisi	City or Umvoto or SAWS or BRGM who is involved in water monitoring	May 2024	Webinar
WP2 – *Multifunctionality from a City planning perspective – what is it and why is it important?*	Urban planning and design concepts from UCIU and build on City's Innovation platform stuff as well as their stated aims in respect of LUW and CFF C40	Kirsty Carden, Julia Mclachlan, Amber Abrams	Urban Catalytic Investment Unit-City	August 2024	Webinar
WP3 – *Locally-led organisation around multifunctional ponds*	Our civic process and examples from Friends of groups, anchors and champions in various sites	Amber Abrams	Local civics / Princessvlei /SEED / MRT	November 2024	In-person event?

Pathways to water resilient South African cities

Ministry of Foreign Affairs of Denmark
DANIDA | International Development Cooperation

University of Copenhagen

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Questions?

WP2 – *Monitoring water quality in MAR BGI projects*	Importance of water quality monitoring and impact of BGI on MAR. Physico-chemical tracking (Gundo Mathoho)	Rachelle Schneuwly, Kirsty Carden, John Okedi	Other DFC-supported project partners? ESKOM, BIOGRIP	January 2025	Webinar
WP3 – *Fostering and assessing local stewardship around the implementation of BGI*	Starting point is the idea that stewardship is made up of care, agency and knowledge (Enqvist). Giving examples of these elements from the pond (or elsewhere) – activities and assessments	Lise Herslund	Local stakeholders?	April 2025	Webinar
WP3 – *Multifunctional BGI requires multi-layered maintenance and co-production of management plans*	Co-design of management plans based on examples from different spaces; workshop processes with civics, city etc. *Align with Intl symposium on MAR*	Amber Abrams, Kirsty Carden	CoCT officials Environment / Biodiversity	May 2025	Workshop ?
WP4 – *Institutionalising multifunctional BGI towards a water sensitive city*	Input from pond and case sites – including policy review from MAR BGI study	Kirsty Carden	WWF (Table Mountain Water Source partnership)	July 2025	In person?
WP4 – *A Community of Practice around water resilience in Cape Town and other developing cities*	Using existing FW forum and wsdsa.org website. Include catalogue of collaboration across different sectors and co-production activities in other resilience programmes, e.g. LUW / CFF C40	Kirsty Carden	LUW, GIZ / CFF C40	September 2025	In-person?