

# Newsletter

*Pathways to water resilient South African cities (PaWS) project*



## ***Stormwater ponds – their potential for multifunctionality (or multi-purpose?) from an urban planning perspective***

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Following a severe drought from 2016 to 2018, that impacted its water supply infrastructure, the City of Cape Town Municipality developed a Water Strategy document that sets out its approach to achieving water resilience to mitigate against similar future scenarios.

This includes the adoption of a Water Sensitive City (WSC) vision by 2040.

Rather than being wasteful with water, a WSC manages its water in a sustainable manner, contributing to urban resilience by embracing water sensitive strategies.

## **This issue**

Multi-functional to multi-purpose stormwater ponds?

## **About the project**

The 'Pathways to water resilient South African cities (PaWS)' project is a collaboration between UCT's Future Water Institute, and the University of Copenhagen, funded by Danida MFA. Drawing on physical experiments and governance and social processes, it explores the potential for existing flood attenuation infrastructure to be adapted towards water resilient cities (read more [here](#)).

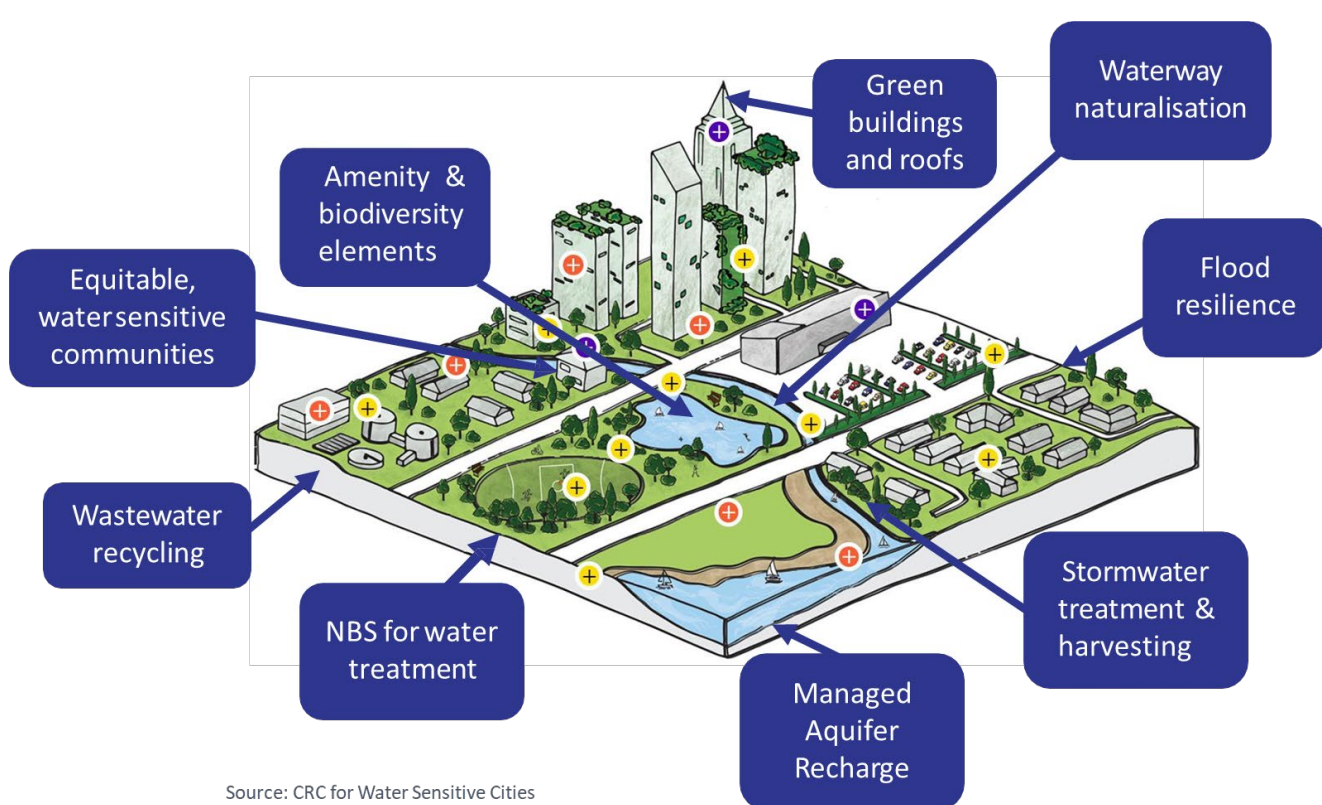
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Source: CRC for Water Sensitive Cities

Cape Town's stormwater ponds have the potential to improve the city's water resilience. Retrofitted as multi-functional Blue-Green Infrastructure (BGI), using Nature-based Solutions (NbS) these ponds could enhance aquifer recharge as well as improve biodiversity, all whilst maintaining their designed flood alleviation functions.

There are challenges though. Stormwater ponds are often used as informal kick-about, children's play and dog-walking areas, but are also seen as vacant spaces (especially in low-income areas) and are targeted for littering and rubbish-dumping.

Another growing challenge is when these ponds are occupied with informal housing, compromising their functionality and contributing to other negative outcomes such as pollution. Without obvious uses or functions, these ponds are perceived in many instances as empty land.

Stormwater ponds in the City of Cape Town are mostly zoned as POS2 for public open space and environmental conservation use, but this reflects an ambition rather than a grounded reality. These ponds and their connected stormwater systems are therefore often not recognised as part of broader urban spatial planning strategies. The WSC vision enables the recognition of these ponds as part of urban space (and city infrastructure assets).

At the pond study site in Fulham Rd, Mitchells Plain, the research team has highlighted the potential for multiple functions of these ponds; e.g. their role in environmental conservation through complementing NbS as part of a WSC transition. The biodiversity at the site has significantly improved with selected areas protected from mowing and augmented with the planting of locally indigenous fynbos species from the Cape Flats Dune Strandveld vegetation type.



These pond landscapes, retrofitted to include locally indigenous biodiversity can enhance resilience by acting as 'stepping stones' across the city (see Newsletter 2: <https://futurewater.uct.ac.za/paws-outputs>) whilst also serving as BGI that can help with flood prevention and aquifer recharge, reduce heat build-up in urban areas, provide air quality improvement, provide biodiverse habitats and contribute to soil improvement. These are all useful benefits of BGI but...

*How could people **use** these spaces?*

### **How can the multi-functionality of BGI become an opportunity for multi-purpose urban spaces?**

These landscapes have the potential to serve numerous uses - for mental and physical health benefits such as recreation, nature play, nature education, community gathering, amongst others. They could also contribute to enhancing the green economy thus contributing to sustainable livelihoods, by recognising these ponds as regenerative resources that can be stewarded, such as the harvesting of plants, seeds and cuttings for traditional herbal remedies or even to supply nursery stock.



### **The ponds are in a variety of environments.**

It is important to recognise that these ponds, whether for detention or retention purposes, vary in size from large to small, and occur in a variety of urban settings, including at busy intersections or embedded in neighbourhoods. It is not viable to consider the ponds and their uses in isolation from their surroundings: they are inter-linked.

At the Fulham Rd Pond for instance, the pond has been recognised as an opportunity to provide outdoor nature learning for the adjacent primary school.

In another example, a desktop study of stormwater ponds reveals that, where ponds are embedded in a local neighbourhood, there might be nearby income-generating activities, e.g. a tuck shop in a garage or room-conversion, where basic groceries, cold drinks or sweets can be purchased.





## Ponds as part of settlement (and city?) restructuring?

How could we envisage these ponds functioning holistically as useful multi-purpose (function AND use) urban spaces in these different contexts when South African cities such as Cape Town continue to be impacted by the legacy of apartheid spatial planning that enforced racial segregation as well as land-use separation.

In its national plan, the National Development Commission (2012) emphasises a variety of imperatives that include the critical need for settlement restructuring to address the spatial planning injustices of the past. What could guide this restructuring though?

In 'A Transformational Path for Cape Town' Dewar (2016) refers to the benefits of *corridor planning*, focused on promoting accessibility and mixed-use as an approach to guide restructuring. This corridor planning approach

*'promotes intensity to encourage non-motorized and public transportation, to stimulate a mix of activity, to promote small business, to pursue urban integration vigorously, and to improve equity and convenience' (Dewar, 2016).*

Could we start to recognise and plan for a chain of stormwater ponds in the urban landscape that could in effect be transformed into blue-green corridors that allow for mixed-use zones – creating beautiful, biodiverse, pedestrian friendly, economically vibrant blue-green necklaces across Cape Town?



# Until the next edition.....

## References

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Dewar, D. (2016). *A Transformational Path for Cape Town. Transforming Distressed Global Communities*. F. Wagner, R. Mahayni & A. Piller (eds). London, Taylor \_ Francis- 231-244.pdf.

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