

Benchmarking the City of Cape Town, South Africa as a Water Sensitive City

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Highlights

- The Water Sensitive City Index is applied to Cape Town, considering formal and informal areas.
- Cape Town's water sensitive vision prioritises equity, basic services and healthy waterways.
- WSC implementation actions include champions, planning, terminology and governance.

Introduction

The recent drought in the Western Cape, South Africa (RSA) and the COVID 19 pandemic have both highlighted the critical need for towns and cities in RSA to build resilience and transition towards 'water sensitivity'. In response to the water crisis, the City of Cape Town (COCT) developed a new Water Strategy that commits to "becoming a Water Sensitive City by 2040" (City of Cape Town, 2020). But what is a WSC and how can this concept be applied to assist Cape Town and other African cities in becoming more water sensitive? To answer these key questions, the Western Cape Government and the CoCT embarked on a WSC Benchmarking project.

This paper presents the application and results of the Water Sensitive City Index (WSC), WSC Visioning process and Transitions Dynamics Framework (TDF) to the CoCT (Brown et al., 2016). The Authors highlight learnings from the project including contextualising the tools for the South African context as well as recommendations for application across South Africa and in other African cities.

Methodology

The project consisted of three main phases, which each made use of different tools developed by the Cooperative Research Centre for Water Sensitive Cities (CRCWSC) in Australia (Brown et al., 2016), and involved associated stakeholder workshops with approximately 40 selected water sector stakeholders:

1. Phase 1 - Benchmarking: The WSCI was applied to the CoCT to benchmark current water sensitive performance during a full day workshop on 18 August 2020. The WSC Index was adapted for the Cape Town and South African context, with 16 out of the 34 indicators rated separately for the formal¹ (87% of households) and informal² (13% of households) areas of the city, and the rest of the indicators were rated citywide.
2. Phase 2 – Visioning: This phase consisted of a visioning workshop, held on 28 October 2020, with three activities to form a water sensitive vision; (1) 'Time Travel' exercise to develop the COCT's 'water story', (2) 'Visioning Headlines' exercise to draw out aspirations for the COCT's water future for the next 50 years and (3) 'Visioning Outcomes' exercise to draw out vision themes.
3. Phase 3 – Transition planning and action development: During this phase two half-day workshops were held on 27 January 2021 and 10 February 2021 as part of a larger process of identifying key focus areas for implementation, applying the CRCWSC's Transitions Dynamic Framework to refine

¹ A formal urban settlement is structured and organised. Land parcels make up a formal permanent structure. A local council or district council controls development in these areas. Services such as water and refuse removal are provided and roads are formally planned and maintained.

² Informal settlements occur on land which has not been surveyed or proclaimed as residential, and the structures are usually informal. Informal dwellings are makeshift structures not erected according to approved architectural plans

the focus areas, distilling insights from the workshops and project team analysis into action items, and prioritising actions for an implementation plan.

Results and discussion

Figure 1 illustrates two sets of WSCI results; a radar chart showing the average ratings for the three result sets (formal, informal and overall) in terms of the seven goals of a WSC and the percentage attainment of each city state for the formal, informal and overall/citywide areas in Cape Town.

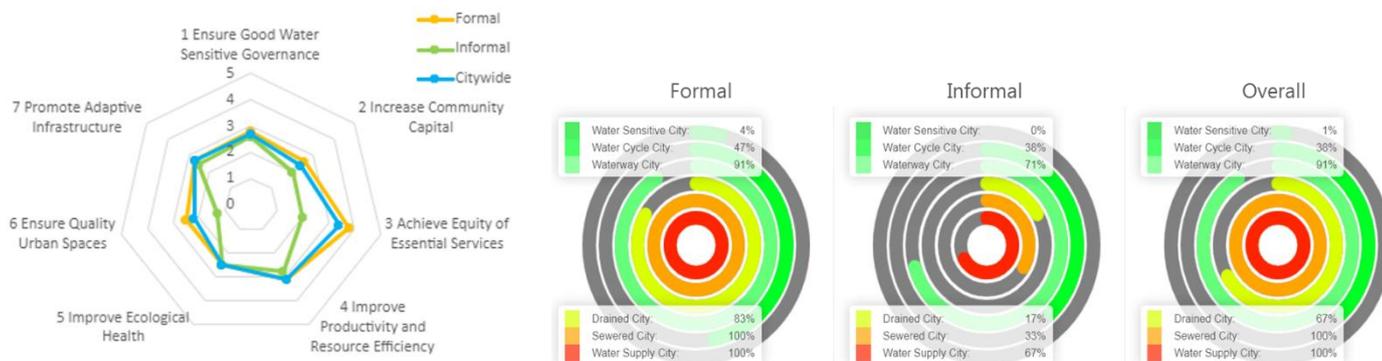


Figure 1. The scores for the seven goals of the WSCI, and the city state percentage scores

The formal areas have the highest average goal ratings, followed by overall and then informal. Goal 3 and Goal 6 were the highest average goal ratings for formal and overall. The three result sets achieved the same rating for Goal 5 and were closely matched for Goal 1, Goal 4 and Goal 7.

The formal areas and the CoCT overall have fully achieved the Water Supply and Sewered City states and are in various stages of transition to the Drained City state, with some attainment of the Waterway (91%) and Water Cycle (38%) city states. Despite the recent water crisis, the CoCT is well regarded by stakeholders for water security. Formal areas rated 83% as a Drained City, with the stormwater drainage system in the CoCT functioning effectively on a day-to-day basis and protecting most citizens from flooding. The relatively high rating for the Waterway City was particularly surprising as none of the stakeholders considered the CoCT to be close to having healthy waterways. From the project, it has been proposed that the Waterway City be reframed as the “Water Conscious City”, with significant social awareness around water issues, water efficiency, waste reduction, good water sensitive governance and the promotion of adaptive infrastructure. Formal areas rated 47% as a Water Cycle City, the achievement of which is largely attributed to Goal 3 ‘Achieve equity of essential services’ and Goal 4 ‘Improve productivity and resource efficiency’. The water crisis, owing in part to the below average rainfall received from 2015 – 2017, led to water-wise behaviours and practices and increased commercial opportunities related to water productivity.

The informal areas have not yet fully achieved any city state, with the highest rating surprisingly being for the Waterway City (71%) followed by the Water Supply City (67%), with particularly low ratings for the Drained City (17%) and the Water Cycle City (38%). The CoCT is responsible for service provision in informal areas and has basic water and sanitation service targets of at least one shared toilet to a maximum of five households and one tap to 25 households, within a maximum walking distance of 200 metres.

The low rating for Water Supply City reflects stakeholders’ views that communal standpipes located outside of citizen’s homes indicate that issues of equity and access are not sufficiently addressed. Despite the CoCT’s sanitation service level targets, the politics around access to sanitation, rather than simply numbers of toilets, were discussion points. In particular, stakeholders regarded organised crime groups, community hierarchy and politics, and issues of safety (especially at night and for women and children) as the contributing factors. Stakeholders also emphasised the need for new metrics and ways of measuring beyond numbers of toilets and an expanded understanding of what access to water and sanitation in informal settlements means for a Water Sensitive City. Informal areas rated particularly low with a 17%

attainment of the Drained City state. Drainage is not considered as a basic service in RSA, unlike water and sanitation. Flooding is a significant problem that disrupts life in informal settlements and poses a risk of severe consequences to life.

Figure 2 shows the CoCT water sensitive vision that was developed, which is underpinned by three critical pillars and abbreviated to H₂O. Core components of the vision include equity, basic service provision, resilient infrastructure, good governance, healthy waterways and liveable spaces.

“A world class African city that celebrates providing equitable and dignified access to water services that are underpinned by resilient water sensitive infrastructure.”

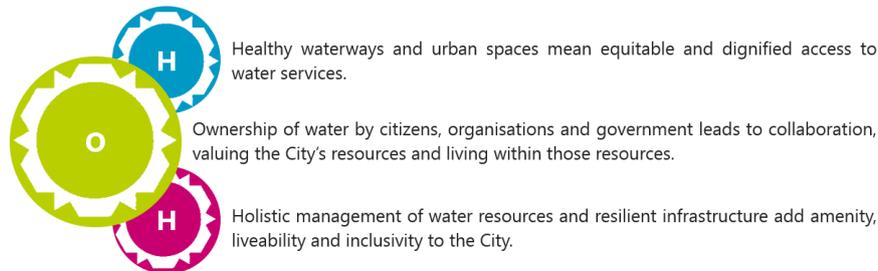


Figure 2. Cape Town's H₂O WSC vision

The draft WSC Implementation Strategy is shown in Figure 3 and comprises a three-phase approach: Phase 1: Ensuring that the fundamental aspects of the transition are in place, which includes six key priority action areas – Champions and Networks, Terminology vs Jargon, Research and Capacity, Indigenous Knowledge, Governance and Planning, and Integrated Planning. The identification of demonstration projects and ensuring lessons are learnt from them is also included in this phase.

Phase 2: Applying the lessons learnt from Phase One across the rest of Cape Town in order to embed water sensitive practices throughout CoCT and reviewing the benefits of water sensitive projects.

Phase 3: To be developed based on the outcomes of Phase 1 and 2 but should be focused on the ongoing implementation of WSC practices and international best practice at the time.

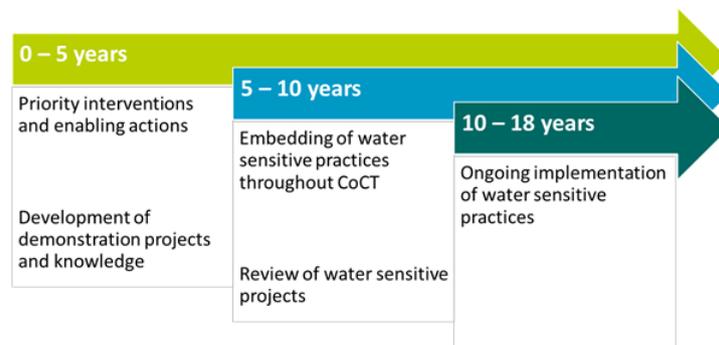


Figure 3. WSC Implementation Strategy for Cape Town - 2040

Conclusions and future work

The application of the WSCI and the development of a WSC vision and Implementation plan is helping the CoCT in its effort to transition to a WSC by 2040. The application of the WSC tools in a South African context highlighted various lessons for a WSC transition including the fact that a shared water sensitive vocabulary is necessary, municipal planners have a significant role to play in a WSC, basic service delivery is an essential component of a WSC in a developing country, and demonstration projects have an important role to play.

References

- Brown, R., Rogers, B., & Werbeloff, L. (2016). *Moving Toward Water Sensitive Cities: A guidance manual for strategists and policy makers.*
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