

Urban growth simulation: supporting the refinement of the Capital Investment Framework of the City of Tshwane

Objective and rationale for project

The purpose of this ongoing project is to support the City of Tshwane's Planning and Development Department to refine the Capital Investment Framework (CIF) by applying the UrbanSim platform to simulate future settlement patterns as a market response to a range of spatial planning scenarios already contained in the GSDF, MSDF and RSDFs as well as specific investments contemplated in terms of the CIF, for example to achieve spatial restructuring through capital expenditure¹. The rationale behind the project is that current and previous expenditure seems to be sparse and scattered throughout the city due to unfocussed, non-incremental and misaligned public investment. Furthermore, investment patterns do not correlate with focus areas².

Objective of the Capital Investment Framework

Tshwane's spatial vision is to become a *Spatially Efficient Capital City that is Sustainable, Competitive and Resilient*. The aim of the CIF (2013), as a component of the MSDF (2012), "is to guide the city's expenditure to be aligned to the MSDF 2012 and the Tshwane 2055, provide for integration in the implementation of the municipality's strategies, and ensure intergovernmental planning and thus catalyse effective service delivery³." The purpose of a Capital Investment Framework (CIF) is to provide a context for service and infrastructure investments to occur; provide a development profile of areas and their required interventions; propose spatially-based interventions; and allow for high-impact development and growth⁴.

Application of urban simulations in Tshwane

The project is currently in the second round of simulation. The first round was aimed at validating the model by simulating a period in the past (from Census 2001 to Census 2011). The second round of simulation includes wider stakeholder participation to define two or three distinctly different future scenarios to be simulated from 2011 to 2040. The output from these simulations will provide spatially-explicit future population distributions that can then be used to estimate the future demand for services and prioritisation of specific projects. The third round of simulation will allow for final scenario adjustments after the results of the second round have been considered by CoT management structures⁵.

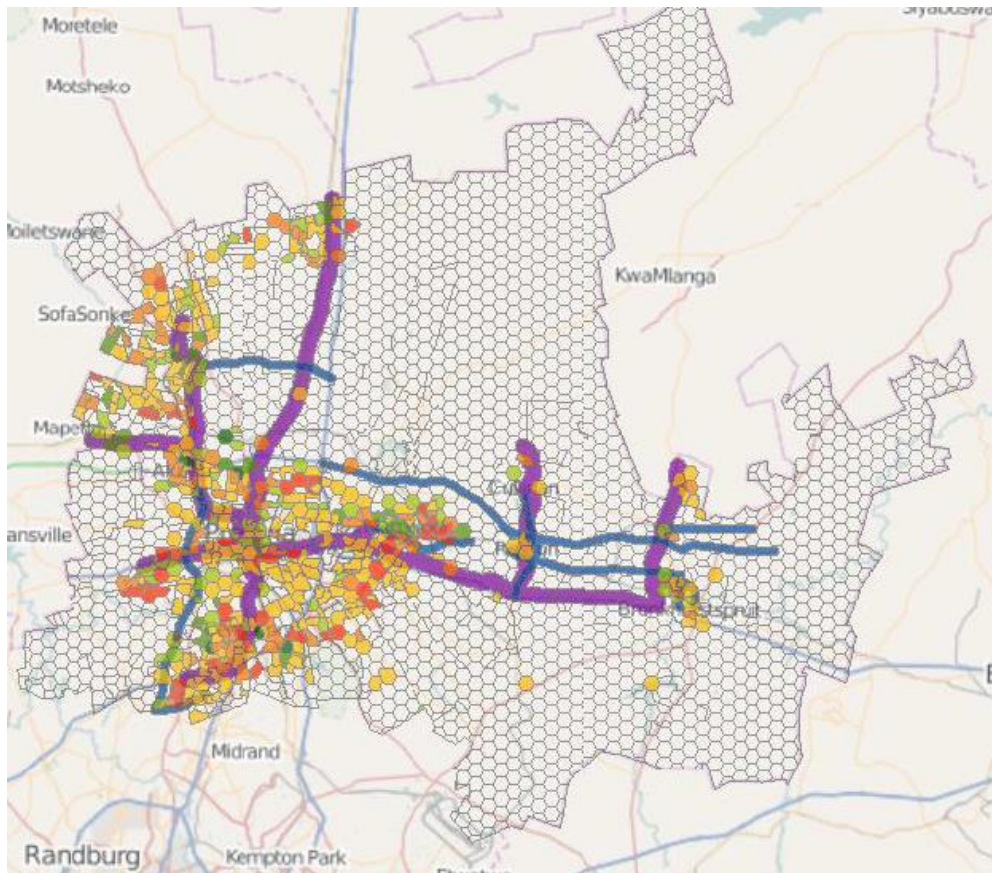
¹ CSIR, 2013 proposal to the City of Tshwane.

² City of Tshwane, 2014 (updated) Capital Investment Framework 2013/2014. City Planning and Development Department.

³ Ibid

⁴ Ibid

⁵ CSIR, 2014 progress report to the City of Tshwane.



City of Tshwane: absolute growth in households between 2001 and 2011

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