HOW SOUTH AFRICAN CITIES REPRESENT THE DYNAMIC RELATIONSHIP BETWEEN PUBLIC TRANSPORT AND SPATIAL TRANSFORMATION THROUGH CAUSAL LOOP DIAGRAMS

F ASIIMWE and M MOKONYAMA

CSIR

ABSTRACT

The CSP is developing a systems dynamics simulation platform that will assist cities to gauge the impact of their decisions on the behaviour of the built environment. Systems dynamics modelling is a proven platform for representing complex systems in the form of dynamic feedback loops.

Causal links as opposed to correlations are used as far as possible. A causal loop diagram is a causal diagram that aids in visualizing how different variables in a system are interrelated. It consists of arrows connecting variables in a way that shows how one variable affects another, hence they move users from linear/sequential thinking to systems thinking. By linking together several loops, a concise story about a particular problem or issue is created.

We are in early stages of this process and have commenced with preparing causal loop diagrams with 4 cities in South Africa. The presentation will unpack the findings from the interactions with the cities with regard to what cities think about using Integrated Public Transport Networks as instruments for spatial transformation.