

Building a spatially enabled e-Infrastructure to support urban researchers in Australia

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There is an increasing number of datasets being created and maintained by a myriad of government departments, private sector companies, researchers and communities. This data is being captured, through surveys, satellites, unmanned aerial vehicles, in-situ sensors and web 2.0 technologies. Better access to this 'data deluge' presents an opportunity to assist urban researchers in spatially modeling and visualizing phenomena such as population growth, land use dynamics, population behavior and risk to natural disasters. This paper presents an e-infrastructure framework based on a number of key principles including: single sign-on, autonomy, usability, accountability, openness and interoperability. The Australian Urban Research Infrastructure Network (AURIN) is a \$20 million Australian Federal Government initiative (www.aurin.org.au). AURIN is embarking on a mission to unlock key data assets, creating open source spatial models and simulation tools, geo-visualization tools, workflows systems and a metadata engine through such an e-infrastructure framework. This paper will present and discuss the AURIN framework from the perspective of a number of 'lens' to view the urban landscape. These include: population and demographic futures and benchmarked social indicators, economics activity and urban labour markets, urban health, well-being and quality of life, urban housing, urban transport, energy logistics, urban vulnerability and risks, urban governance, policy and management, and innovative urban design. By unlocking key datasets, creating a supporting e-infrastructure with open and accessible spatial models, workflows, and visualization tools it is envisaged that AURIN can provide an integrated platform to support sustainable urban development and design in Australia.

Key Words: e-infrastructure, data, spatial models, workflows, geo-visualization.