Chapter 2.6

Brisbane Urban Growth Model:
An Integrated Infrastructure Management Framework for Brisbane, Australia

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ABSTRACT

In recent years, local government infrastructure management practices have evolved from conventional land use planning to more wide ranging and integrated urban growth and infrastructure management approaches. The roles and responsibilities of local government are no longer simply to manage daily operational functions of a city and provide basic infrastructure. Local governments are now required to undertake economic planning, manage urban growth; be involved in major infrastructure planning; and even engage in achieving sustainable development objectives. The Brisbane Urban Growth model has proven initially successful to ensure timely and coordinated delivery of urban infrastructure. This model may be the first step for many local governments to move toward an integrated, sustainable and effective infrastructure management.

INTRODUCTION

Sustainable urban development and the liveability of a city are increasingly important issues in the context of land use planning and infrastructure management. In recent years, the responsibilities of local governments with regards to infrastructure management practices have increased under the pressure of rapid urban growth. Aside from managing the daily operational functions of a city, such as assessment of property development applications and maintenance of urban streetscapes, local

governments are now also required to undertake economic planning; manage urban growth; be involved in major national and state infrastructure planning and even engage in achieving sustainable urban development objectives.

The increase in the responsibilities and roles of local governments have meant that local elected officials and urban planners have less time to make decisions, and so rely more on planning support systems that inform the decision making process and improve urban management practices. Urban modelling tools have been widely used in developed countries for this purpose. However, many of these models are generally 'one-off' applications with a single purpose, rather than multi-dimensional applications. As a result, many of them become obsolete in a relatively short period of time.

The aim of this chapter is to examine the complex relationship between infrastructure management, land use planning and economic developments, and to illustrate why there is an urgent need for local governments to develop a robust planning support system to facilitate better infrastructure management. The development of the Brisbane Urban Growth (BUG) Model has proven initially successful for Brisbane City Council as the first step toward establishing a sustainable urban and infrastructure management framework. Compared to the conventional land use planning approach, it is a better approach to facilitating sustainable urban development and infrastructure management.

Infrastructure Management for Sustainable Urban Development

Contemporary land use and urban planning originated from the industrial revolution that began in the 1850s. Planning by public authorities was first used as a tool for improving the health of the working population which was compromised by epidemics, water contamination and urban slums. The main reason for this action was to improve

the health conditions of labor workers so that they could work harder, and at the same time reduce the cost of supporting an unhealthy labor force and their families (Friedmann, 1987; Sies & Silver, 1996; Taylor, 1998; Hall, 2002). Gradually, local authorities took responsibility for providing urban infrastructure such as clean water, and for the removal of domestic waste such as sewerage and garbage.

In modern times, greater emphasis on the decentralization of urban governance structures has meant that the traditional roles of local governments in managing basic land use, infrastructure and services are no longer sufficient to meet the local community needs. Local governments are now increasingly involved in regional and national strategic planning initiatives and programs such as regional economic development, major road and public transport infrastructure projects, and management of urban growth (Stren, 1993; Worthington & Dollery, 2000; Haywood, 2005; Atterton, 2007).

As a consequence of more demand on local government in managing legislative requirements and meeting community needs, the roles of land use and urban planning have also evolved rapidly in the past several decades (Cetinic-Dorol, 2000; Byrnes & Dollery, 2002). Urban planners are now required to provide strategic advice on many urban growth and infrastructure management issues, ranging from rezoning of land for community use to strategic distribution of public transport routes and infrastructure. Due to the demand for greater linkages and accountability among different projects, planners can no longer deal with such issues in isolation.

Contemporary land use planning approaches used by local authorities to tackle emerging urban growth and infrastructure management issues are often based on trends and strategic assumptions, rather than on groundtruthed data and information about the local area. It has been suggested that there is a constant mismatch between what is a planner's view of a desirable spatial outcome and

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