Chapter 4
Integrated Sustainable Urban Infrastructure Management: The Brisbane Urban Growth Model

Benson AuYeung
Brisbane City Council, City Planning Branch, Australia

Tan Yigitcanlar
Queensland University of Technology, Australia

Severine Mayere
Queensland University of Technology, Australia

ABSTRACT
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 promotion of sustainable urban development in Australia and overseas is facing various physical, socio-economic and environmental challenges. These challenges and problems arise from the lack of capability of local governments to accommodate the needs of the population and economy in a relatively short timeframe. The planning of economic growth and development is often dealt with separately and not included in the conventional land use planning process. There is also a sharp rise in the responsibilities and roles of local government for infrastructure planning and management. This increase in responsibilities means that local elected officials and urban planners have less time to prepare background information and make decisions. The Brisbane Urban Growth Model has proven initially successful in providing a dynamic platform to ensure timely and coordinated delivery of urban infrastructure. Most importantly, this model is the first step for local governments in moving toward a systematic approach to pursuing sustainable and effective urban infrastructure management.

INTRODUCTION
Urban infrastructure is a complex and rapidly evolving area within the topic of urban management. It is part of a city and a vital component of a complex urban system. Its supply and financing is often the subject of intense political discussion. In recent decades, Australia’s urban infrastructure has undergone major changes in its ownership, man-
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Urban infrastructure includes all facilities that enable its function as a sub-system of a city. The term ‘urban infrastructure’ can refer to many services, depending on the context in which it is used (Gleeson, Dong, & Low, 2007). It can generally be classified into physical and social infrastructure. Physical infrastructure, commonly known as ‘hard infrastructure’, includes stormwater drainage; roads and transport facilities; telecommunications facilities; water and sewerage facilities; and other networked services (Gleeson et al., 2007). Social infrastructure, commonly known as ‘soft infrastructure’, includes educational and health care facilities; sport and leisure facilities; law and order; and public administration (Gleeson et al., 2007).

Contemporary land use and urban planning originated from the industrial revolution that began in the 1850s. It was not until the early 1930s that the paradigm of town planning as design emerged (Hudson, 1979). Planning by public authorities was used as a tool for improving the health of the working population which was compromised by epidemics, water contamination and urban slums. More specifically, the main reason for this action was to improve the health conditions of labour workers, so that they could work harder and, at the same time, reduce the cost of supporting an unhealthy labour force and its families (Friedmann, 1987; Hall, 2002; Sies & Sliver, 1996; Taylor, 1998b). Infrastructure planning at this time, especially water and sewerage infrastructure, was a reaction to the need to improve the health of the cities (Gleeson et al., 2007).

The definition of urban infrastructure has expanded since the 1960s. In that decade, the term referred mainly to buildings and other permanent assets such as road and water networks (Gleeson et al., 2007). The expansion of the definition was closely influenced by theories such as the rational planning model and the disjointed-incremental
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