Chapter 9
Sustainable Parking Planning for Smart Growth of Metropolitan Cities

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ABSTRACT

This chapter identifies main problems of parking planning in demand-oriented conventional paradigm. Parking planning principles and cost-effective programs in supply-oriented sustainable paradigm are presented in the chapter listing many economic, social and environmental benefits. The chapter describes various parking strategies for developing a sustainable parking plan for smart growth of metropolitan cities, including cases of Istanbul and Vienna. A critical perspective is drawn for the parking planning policies for these city cases. Parking is recognized as an important factor influencing accessibility. Parking planning, parking policies and pricing play a critical role in local government decision making.

INTRODUCTION

The ongoing demand for the automobile in developed countries and the growth in automobile demand in developing countries has imposed many difficulties on sustainable transport. These have accelerated some studies on the influence of the built environment on climate change, air pollution, obesity, land use and parking policies worldwide. Specifically, sprawling urban development in the metropolitan cities has been criticized for its contribution to the rising demand for automobile use, land use, transport and parking policies. Researchers aim to prove that the built environment has effects on automobile ownership and offer guidance for policy design and parking planning implementation.

Parking planning is an evolving subject, a paradigm shift in how a problem is perceived and solutions put. The old paradigm is demand oriented which creates new parking lots when needed according to the automobile ownership boom. Parking facilities are subsidized by local governments, and that every

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region should provide its own parking needs. The new paradigm is oriented to provide optimal parking supply. It strives to use parking facilities sustainably by sharing between different regions. Parking facility costs are charged directly to automobile owners, and financial rewards, subsidies or credits are provided to urban dwellers that reduce their parking and oriented to public transport and bicycle.

Smart Growth is based on New Urbanism and Transit Oriented Development which generates development policies for more sustainable transportation and land use by creating more compact and polycentric with multi-modal transportation systems. Smart growth is supported by sustainable parking planning. Parking planning reduces the amount of land required for parking facilities, reduces automobile use and increases public transportation. Parking plans for smart growth allow more sharing of parking facilities, shifts to alternative modes, and various types of parking pricing.

Parking problem is one of the largest negative results of rapid urbanization and conurbation of Istanbul. It decreases the quality of life and threats environment and natural resources in this metropolitan city. Istanbul Metropolitan Municipality prepared a master plan for solving this problem. Within this plan, problem analysis and site studies have been made, database was built, zoning has been created and parking supply and demand has been determined. After modeling with Geographic Information Systems, parking plan proposals are put by demand based estimation. These proposals will guide current parking regulations in this metropolitan city. As a second case, parking planning in Vienna has a different approach in new paradigm. It is supply oriented and district based which has strict regulations with parking stickers for visitors and residents of planned districts. Short term parking, seasonal parking and permanent parking permit have different requirements which push automobile users to pedestrian, bicycle or public transport. Electronic parking sticker projects started and applications are held by e-government procedures. The city aims to reduce automobile traffic and environmental pollution. An improvement was made on public transit, overall parking with economic accessibility for sustainable urban transportation. These projects are under strategic planning by transit oriented development for smart growth of Vienna.

This chapter investigates main problems with current parking planning in old conventional paradigm. Parking planning principles and cost-effective programs are put in new sustainable paradigm providing many economic, social and environmental benefits. This chapter describes various parking strategies, how to evaluate these strategies and develop a sustainable parking plan for smart growth of metropolitan cities, including cases of Istanbul and Vienna and resources for more information. A critical perspective is drawn for the parking planning policies for these city cases.

PARKING PROBLEMS AND LEGISLATION

Parking spaces attract cars; so they generate car traffic. Parking needs space, which is not available for other street uses. Nothing else has changed the traditional streetscape as dramatically as parked cars have done during the last few decades. (H.Topp, Uni. of Kaiserslautern, Germany)

The parking problems can be categorized into four main headings such as lack of strategic approach, parking legislation, off-street parking supply and on-street parking. The sub-problems under these headings are given in Table 1. These problems are caused according to direct and indirect impacts.

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