

Chapter 11

The Fallacy and Planning Strategies on Land-Use of Rail Transit Site Area in China

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Abstract Research the development of rail transit site area in China's major cities. There are three major characteristics in development and construction of rail transit site area, including efficient-tending of land-use, increasingly complex of city function, the laws of economics obeying. Four developing fallacy mechanism are at the prevalence which can be summarized as convergence of land development methods, the serious space closure, and traffic transfer's complex and single and the marginalization of public facilities. Research recommendations that five active planning guide strategies will maximize help cities to solve the pervasive problem of rail transit site region, including the land use go-mode strategy, ecological open space reserving policy, low-carbon transportation transferring-access strategy, the closing strategy of public service facilities.

Keywords Rail transit • Land use • Fallacy mechanism • Planning strategies

11.1 Characteristics of the Development and Construction of Rail Transit Site Areas in China's Major Cities

11.1.1 *Land-Use Tends to Be Efficient*

First, local governments and planners are gradually realized that the efficiency of urban land use is worth to improve by the influence of rail transit which has also become the characteristics of the development and construction. The prominent reflection is triple jump phenomenon of strength, density and height. Among them, the most affected is building height and building strength. The local government

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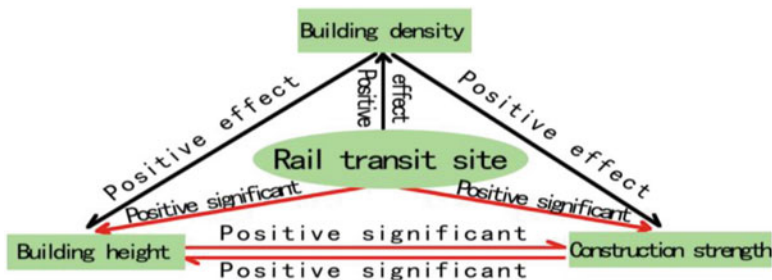


Fig. 11.1 “One point three degree” mechanism

seems to think that rail transit will become a fertilizer, the activation of the land and makes it continue to play performance of “one point, three degrees” (Fig. 11.1).

11.1.2 Urban Functions Are Increasingly Complex

Secondly, with the efficient of land-use, surrounding areas become increasingly complex. The positive sense is to break the drawbacks brought by rigid functional partition and to shape urban functions integrated regional with composite functional organizations. And the negative sense is at its organization unscientific and piled, which often format the mode of the business office, business hotels, high-rise residential and creative industries.

11.1.3 Development Subjects to the Laws of Economics

Moreover, rail transit site area development tends to obey the rules of market economy and rent bidding curve (Fig. 11.2). It’s difficult to use competition relationship to explain, and also do not belong to the basic means of macroeconomic regulation and control.

11.2 The Fallacy of Land Use on Rail Transit Site Area in Major Cities

11.2.1 Land Use Pattern Convergence

Development model of land in the vicinity can be summarized as “function collage, strength first, chaotic composite”. Its consequences is not only the city-one-side,

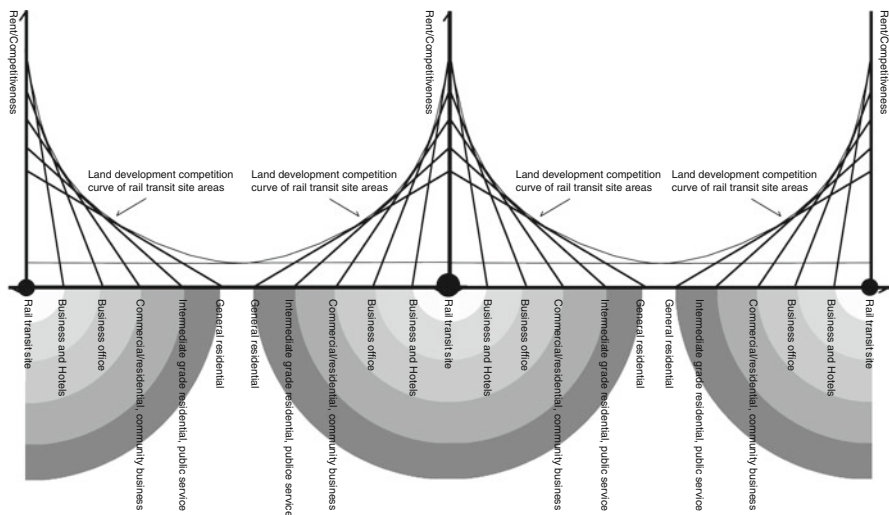


Fig. 11.2 The competitive curve and land use mode of rail transit site surrounding land development

will also be derived from cultural loss, long-term low-level equalization of living standards, negative attitudes and hedonistic consumerism leading, innovation capacity decreased, the quality of living environment continued to decline and the increasing degree of confusion.

11.2.2 *Serious Space-Close Phenomenon Leading Open-Space Displacement*

Foreseeable problem is the space closed. In China, this problem reflects in the ecological green space’s disappear or replacement. Nature of the replacement is the “rediscovering” on value of the land, but the result is a lower quality of human settlements environment. Closed urban space will bring many fundamental issues, such as urban ventilation obstruction, incomplete regional ecosystems, crowded city repression and space.

11.2.3 *Traffic Transfer’s Complex and Single*

By the influence of construction sequence, most Chinese rail transit is not so easy to transfer, harder for connection level. Most of them are still unable to form the ideal mode of multiple transportation modes. And complex place lies in citizens’

usability to use the shortest time through the transfer and spend much time waiting for another.

11.2.4 Marginalized Public Facilities

Public facilities are often in marginalized situation. Although it is the inevitable under the market economy and free competition, but it is also the consequences due to acquiescence of government failure which means the reducing reach ability and service capabilities.

11.3 Planning Guide Strategy of Rail Transit Site Areas in Large Cities

11.3.1 The Strategy of Modeling Against of Land-Use

11.3.1.1 Shift from the Multi-legged Race to Focus Driven

By strengthening the degree of coordination of land use along rail transit lines, it coordinated land function, development intensity; residence employment population, which is the city performance basis [1]. The phenomenon of high-rise commercial office, high-end commercial and upscale residential “three high” has become typical. To this end, the development and construction must priority be to determine the focus driven concept. The focus driven development model under the target of Healthy Cities and Smart City will benefit the common upgrade of urban space protection and promoting [2].

11.3.1.2 Transformation from the Site Relying to the Communities Relying

Clear traffic-oriented plays a positive role in promoting urban development [3]. This center will surely be the information flowing gathering. Urban entity functional elements need to reboot information collection in a new starting point. Whether it is a function of culture and leisure, eco-tourism function, the high-tech industry or government service functions, it should “abandon center, with a view to the edge of self-reliance” (Fig. 11.3).

Fig. 11.3 The transform from center leading to edge independence

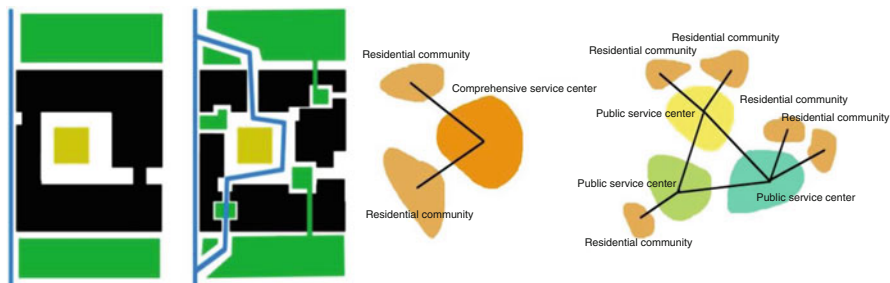
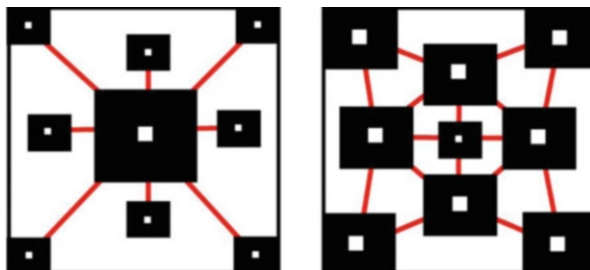


Fig. 11.4 Improving open space level and promoting to multi-center combination – multi-strength

11.3.2 The Strategy of Reserving for Ecological Open Space

11.3.2.1 Improve the Level of Open Space

By the affect of land economic factors, the development intensity leads to the low level of open space in rail transit site areas. What is serious that the closed spatial pattern formatted around the site which is very detrimental to the sustainable shaping of urban space, especially for highly populated areas and frequent flowing areas because the closing means the blocking of information. Therefore, although the level of broad spaces is not completely in line with the model of land economic benefits under the driver of rail transportation, but it is significant for the spatial structure. Because of the structure of highly dense itself represents the tense, complex, disorderly and congestion which are most not the wanted of urban construction in the future (Fig. 11.4).

11.3.2.2 Improve the Level of Network and Hierarchical of Open Space

Planning for open space must have the network level, including the transparent and connectivity of surrounding buildings floor space, ground greening, vegetation cover and building green roof height differences of processing, including water and wetland system, drainage system, commercial street, City Square Park and the organic combination.



Fig. 11.5 Schematic diagram of park-ride and community divided way based on reach ability regional

11.3.3 Low-Carbon Transportation Transfer and Connection Strategy

11.3.3.1 Public Car Transfer and Bicycle Transfer

Transportation transfer is an important driving force for promoting the development of rail transportation better. People hope to transfer from crowded rail transit as a loose free, time-controlled manner. Bus and bike transfer can provide a possible for residents. In addition, study suggests that private car parking building, City Air Terminal, train station and all levels of passenger station should be combined with the rail transit site organic.

11.3.3.2 The Division and Exploration of the Reach-Ability Region and Community

Research thinks, reachable region can determine synthetically through the transfer station, transfer time and trip distance. From the rail station, 5 min after the waiting time, you can take 2 station roads within distance off, and most cost time-consuming 10 min to get home. According to the time dimension, it is the maximum consumption time of 20 min. But if according to distance dimension consideration, it is the formation of the site as the center of the circle, with about 1,000 m to the radius of a specific region: an area of about 3 km². Research suggests, reachable region as the unit of 3 km² in large cities is roughly reasonable planning object (Fig. 11.5).

11.3.4 The Strategy of Public Service Facilities Approaching

Cultural and medical facilities in spatial distribution should be close to the site. Educational facilities may be deep within community, be close to bike and walk system, within walking distance is important. Therefore, scope of its services may be much greater than community-wide, complete design of short distance walking system is critical.

11.4 Conclusions and Outlook

Tend to be efficient, complex urban functions, developed obey economic laws are major characteristics of regional construction of the mass transit stations. Four fallacy mechanisms include convergence of land development methods, serious space closed, complex and single traffic transfer, marginalized public facilities. Positive guidance strategies include land-use go-mode strategy, ecological open-space reserve policy, low-carbon transportation transfer access strategy and public-service closing strategy.

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