

Land Development Control under Motorization Pressure: Will China Have Transit-Friendly Urban Forms?

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Summary

This article examines the possibility of transit-friendly urban forms in future urban China by examining today's city government behavior in metropolitan governance and land development control. The selected case is Yongzhou, a middle sized city in Hunan Province. Analysis on urban land development and metropolitan governance indicates that compactness can result from urban planning and development practices when the city government struggles for urban infrastructure financing with land lease revenue. The resulting compact urban form, however, may not be transit-oriented as the planning ideology is to build automobile friendly cities with wide roads, which adds difficulty to non-motorized modes.

Keywords

China, Land Development, Motorization

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1. Introduction

Congestion rises and environment pollution worsens in many Chinese cities. This trend has incurred concerns on their sustainability. Conditioned on China's big population and limited fertile land, a rational choice for urban China appears to couple compact and transit-friendly urban forms with high quality transit services. Researchers have surveyed good Chinese examples of transit-oriented development around China Mainland, Taiwan, and Hongkong (Zhang, 2007), hoping that good examples can be transferred to other cities. If compact and transit-friendly urban forms are indeed the sustainable path for urban China, empirical examination of existing trends has revealed both positive and negative expectations.

Researchers have documented growth and transformation of many Chinese cities, mainly mega-cities and big cities in the coastal region (Ma and Wu, 2005). This literature contains details of changing institutions within urban governments, growth-oriented government policies, and their urbanization consequences. In some cities, growth of urbanized land seems to be faster than the rate of population growth, causing concerns about the Chinese style urban sprawl (Zhang, 2000). This observable trend appears to conflict with the major goal of land use reform, which aims to economize land utilization by replacing free land allocation with fair market prices.

One possible explanation for this paradox could be the imperfect institutions for policy implementation. For example, the land ownership by public and the lack of public involvement in land management will inevitably result in land related corruption. The city government, as the agent for public land owners, uses the land for many other purposes. If this is the case, the sprawling urban form might be intertemporal cost of the transitional institutions, which might diminish as urban governance and relevant regulations improve over time.

In a review of the transitional status of Urban China, John Friedmann (2005) pointed out that urban governance in China is in "a constant state of adaptation and change." One could view all these changes as the willingness of the Chinese government leaders to learn to govern in the new market economy. Many policies regarding urbanization and urban infrastructure and services have been debated and gradually changed. Within urban areas, for example, changes have been made in land leasing to economize land use. Leasing land to private sectors through "secret" negotiation has been abolished. Only an open bid is allowed now. This change, of course, will not eliminate corruptions immediately, but it is promising to reduce it by some extent. Transportation policies have also been updated. Mega cities such as Beijing and Shanghai, which had given priority to urban highways and automobiles, have openly proclaimed a "transit-priority" strategy. Following that, the Ministry of Construction has joined ministry of energy and the Ministry of Communication to announce transit-priority as a national policy. While the

specific policy design may be far from perfect, it is indeed a move toward positive direction.

This move toward the positive direction, however, should not be equalized to capacity creation for transit friendly urban forms. A policy statement may come as an expression of good will of leading government officials, but whether this good will represents the real interest of the city government is still questionable. In addition, a statement of priority for transit development does not mean that transit services will be provided to a level that makes high-density development attractive. Major transit infrastructure and service improvement does not appear until after the dramatic increase in urban congestion and finally a realization that congestion problem cannot be solved with urban road expansion.

A reliable approach, therefore, is not to make the judgment based on what has been said, but based on what has been done or will be done. It is necessary, therefore, to analyze the possibility of transit-friendly urban forms in light of the task faced by the city government and the resource accessible to the public. In a general assessment of government behavior in urban development process, Yang and Cao (2007) pointed out the resource constrained and goal seeking governments have possibilities to build either compact or sprawling urban forms, quite depends on the relative strength of different forces.

The article further analyzes the relevant issues of urban government and planning in urban land development. This article presents a detailed study of Yongzhou, a middle sized city in Hunan province. This empirical research purposefully avoided big cities because land development in big cities is relevant to the redevelopment of the settlement inherited from the old system. Suburban development in Beijing, for example, is significantly related to the need to accommodate the outflow of the manufacturing industries and households. It is difficult to assess the government planning in the new market environment when this old burden is mixed there. In a contrast, today's middle sized cities were generally small towns in the pre-reform period. Growth and planning today reflects better how the incremental urbanization will be accommodated in the near future.

2. Yongzhou as the Study Case

China has over 600 cities today at different levels of administrative hierarchy (Chan and Yin, 2003), ranging from county level cities to province level cities such as Beijing and Shanghai. Yongzhou is a prefecture level city in Hunan province. It borders two provinces: Guangdong and Guangxi. The territory administered by Yongzhou includes seven counties, 2 county level districts and one county level economic development zone. The area where city government has control on urban land use is called *Shiqu* in Chinese. Yongzhou's *Shiqu* has an area of 3180 sq km, the majority of which is rural. In 2006, *Shiqu* has a planned built-up area of only 70 sq km with about 0.4 million people.



Figure 1. The Administrative Units in Yongzhou *Shiqu*

Yongzhou is similar to other Chinese cities in the sense that the city government gets involved in the urban development process as not only a regulator for urban development but also a market participator who gain land revenue in urban development. Therefore, it is useful to know the urban government structures for this urban region, particularly how it evolved in the past decades.

2.1 Multi-jurisdictional governance of a metropolitan region

Today's Yongzhou City administrates the territory belonging to the old Yongzhou prefecture Region. Today's Yongzhou *Shiqu* was the territory of the historical Lingling County. Before 1984, Lengshuitan and ZhiShan were both towns within the territory of Lingling County. In 1984, LingLing county were replaced by two county level cities. The north side is managed by Lengshuitan City and the South side was managed by the old Yongzhou City. In order to avoid confusion, we refer to the urbanized area within Lingling County as Yongzhou urbanized area.

The seat of the Yongzhou prefecture government was in the old Yongzhou city, whose transportation connection with outside world relies on two means, the highway passing by or the railway station in Lengshuitan City. In the past decades, this rail station made Lengshuitan an increasingly hub for local economic growth as the majority of passenger and freight transportation into and out of the whole prefecture relies on it. Many industries were located there in the planning economy, just to make use of the railway services. After the economic reforms, the market-oriented economic growth makes

Lengshuitan an even more attractive location for business. Several important factories were relocated to Lengshuitan from other parts of the prefecture region.

In order to attract more industrial investment, Yongzhou prefecture government decided to establish a new economic development zone with attractive land rent subsidy and taxation policy. In 1988, the Phoenix Economic Development Zone was created. The government of this zone controls the area belonging to a rural town previously administrated by Lengshuitan City government. The Phoenix zone is right adjacent to the existing built-up area. But the zone government has the same level of administrative power as the Lengshuitan City government. That is to say, the urbanized area within Lengshuitan Built-up area was actually planned and controlled by two county level governments. The built-up area for today's prefecture level city was planned and controlled by three county level governments. Each government unit managed its own road infrastructure investment, made its own land lease to developers, and controlled its own land development. They were in a competitive position when attracting urbanized population and external investment.

2.2 Transition toward a prefecture level city

In the transition toward markets for urban economy, the leader of the prefecture level government had a vision for its urban future: Lengshuitan is its best urban area for promoting urban economic growth. It became desirable, therefore, to make it most prestigious urban areas in the region. Following this ideas, the prefecture level government have taken two strategic steps.

First, it requested a change from the prefecture level region to a prefecture level city and this request was approved by the province government in Nov 1995. As part of this change, the two county level cities became two districts. The old Yongzhou city was renamed to ZhiShan district. The Lengshuitan city was renamed to Lengshuitan district. The economic development zone kept its old name. This transition is not just a title change for the government leader, but also implies significant changes in the way urban development would be planned and controlled. Without this change, the prefecture level government had no direct control on urban land use as this power belonged to three county level units. Now, with the establishment of the prefecture level city, the prefecture level mayor gains the power to affect land development directly.

Second, in 1997, the prefecture Yongzhou city government offices moved from Zhishan District to Lengshuitan District. The offices were built outside the existing built-up area, resulting in a significant expansion of the built-up area in Lengshuitan. This relocation also generated significant ripple effects. With the addition of thousands of government employees in Lengshuitan District, the demand for housing, entertainment and other services have prospered the whole Lengshuitan District. New momentum for urbanization and urban area expansion arose.

2.3 Establishment of consolidated metropolitan governance

Right after the formation of the prefecture level city government, land lease and land development control was still separated in the three county level governments. The need to consolidate the land markets and urban planning has been realized soon after the formation of the new Yongzhou city.

In order to support expected urban expansion, the city governments had to finance a series of urban infrastructure, including one bridge over a river and many new roads. A general approach to financing infrastructure then was to use future land lease revenue to leverage bank loans. The price of the urban land along a new road, therefore, quite affects the financial feasibility of the infrastructure investment projects.

Unfortunately, with land supplied by three separated county level units, the land price was really low. According to Cai (2003), in 1999, when the River East road network expansion project (a significant urban infrastructure project to support urban expansion) is approved by the province government, the city government could not get bank loan for infrastructure investment. The bank thought the government would not be able to pay off the bank loan with future land leasing revenue based on trends of land price observed in the past.

The low land price was caused by various reasons. One important one is that three county level government units compete for rural migrants who look for land to build their own housing in the urban area, or for private developers who want to invest in urban housing to make a profit, or business investors who could possibly generate tax revenue in the future. Governments were unable to raise land price in order to be competitive.

The city leaders realized the importance to consolidate the land market and they eventually completed this consolidation in 2000. The land leasing right previously separated in three units were centralized to the prefecture level government. So was the power of land development control. This transition started a new era of urban development under the administration of a consolidated metropolitan government. Since most Chinese urban regions feature consolidated metropolitan governments, how the consolidated Yongzhou city government planned and regulated land development provides a precious opportunity to observe government behavior in creating urban forms facing incremental urbanization.

3. New Planning by Consolidated Metropolitan Government

In 2001, the city government invited China Planning and Design Academy, the top planning institute in China to revise the existing master plan for the whole metropolitan area. In June 2003, the plan documents were completed and approved by the province government.

In 2001, when the work on the new plan started, Yongzhou had a rather sprawling development pattern resulting from competitive land leasing. There were mainly two big blocks of built-up areas, one in Zhishan and the other in Lengshuitan. These two pieces were separated by a distance of about 20 km. These two areas were self-contained rather

than shared any common urban facilities. The new Yongzhou urbanized area inherited the sprawling pattern at the moment of new planning.

Note that urbanized land in the Phoenix Economic Development Zone is adjacent to the other urbanized land administrated by the Lengshuitan district government. They are essentially one urban area when viewed from the perspective of continuity of the built-environment. Residents in the Phoenix Zone share common entertainment and shopping facilities with others in the Lengshuitan built-up area.

Inside Lengshuitan Built-up area, the new development however was rather fragmented. In the 1980s and 1990s, Lengshuitan city government has selected Pearl Road as a priority development corridor. Meanwhile, the Phoenix Zone government selected the parallel Phoenix Road as the primary corridor for new development. Land development had run along both roads extending from south to far north, leaving the space between them undeveloped (Figure 2).

Six years after the start of the new planning efforts, we can review the major proposals in the planning documents in relation to the actual development on the ground. Particularly focus will be on the planning and development of the Lengshuitan built-up area.

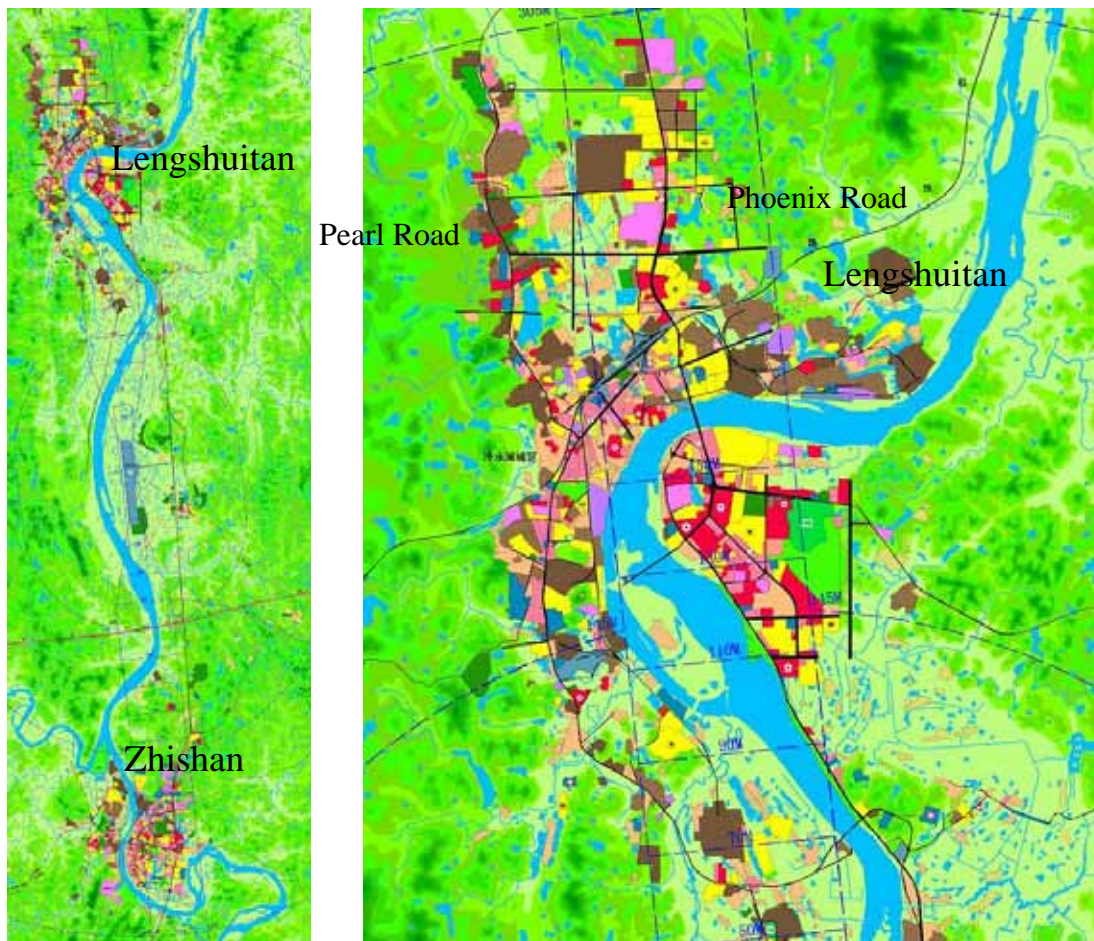


Figure 2. Fragmented Land Development Under Three government Units

4. Planning for Compactness

4.1 Boundaries of urban growth

As a typical city master plan in China, this plan specifies two concentric boundaries for urban growth. First, the plan specifies an inner boundary for the planned built-up area. It includes the existing built-up areas but extends much beyond it. The extended area includes the rural towns between Lengshuitan and Zhishan built-up areas. It also includes the other areas that are adjacent to the existing built-up areas and could be developed within the next twenty years. Area with this boundary is 245.5 sq km. This boundary is similar to urban growth boundary developed in other parts of the world.

Within the planned built-up area, development priority was given to the Lengshuitan built-up area. It was chosen because equal allocation of resources between these two places was regarded inefficient. By the time the plan was made, Zhishan built-up area has a bigger size of urbanized land and a bigger urban population. The plan projects that by the end of the planning period, the projected population in Lengshuitan is 0.43 million and the built-up area is 45.5 sq km. While, Zhishan built-up area will have only 0.24 million people with only 24.7 sq km urbanized land.

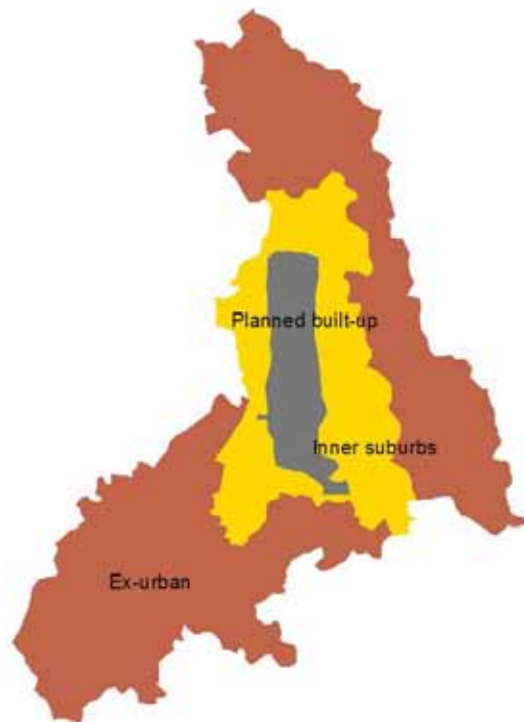


Figure 3. Urban Growth Boundaries

In addition to the boundary for the planned built-up area, the plan specifies an outer

boundary for the urban planning area. Land between these two boundaries is called “inner suburbs”. This area is as big as 1010 sq km. Population within the outer boundary area is 550 thousand. Interestingly, the suburban area here is not planned for urban activities, but rural activities. According to the plan, ecological preservation should be emphasized for this area. Conversion of rural land to urban use should be strictly controlled. The inclusion of this area into the city master plan therefore, is to control the spillover of urban activities into the suburban areas. It is an enhancement policy that can make the inner boundary a more effective urban growth control measure.

For the scattered manufacturing activities already existing in the “suburban area”, the plan proposed to relocate them to centralized industrial zones as long as circumstances permit. The plan also recommended policies that encourage scattered villagers to move to small town centers. These policies include providing urban infrastructure and services only in today’s town centers. The overall idea of the spatial planning framework above, therefore, was to make Yongzhou urban area more compact.

4.2 Timing development

The plan covers a period of 20 years, which is a long period compared a typical project cycle for urban construction. In order to make the spatial framework more operational, the 20 year time span is divided into the three short periods: the near future (2001-2005), the middle future (2006-2010) and the far future (2011-2020). Government projects were listed for the near future, but none for the middle future or far future.

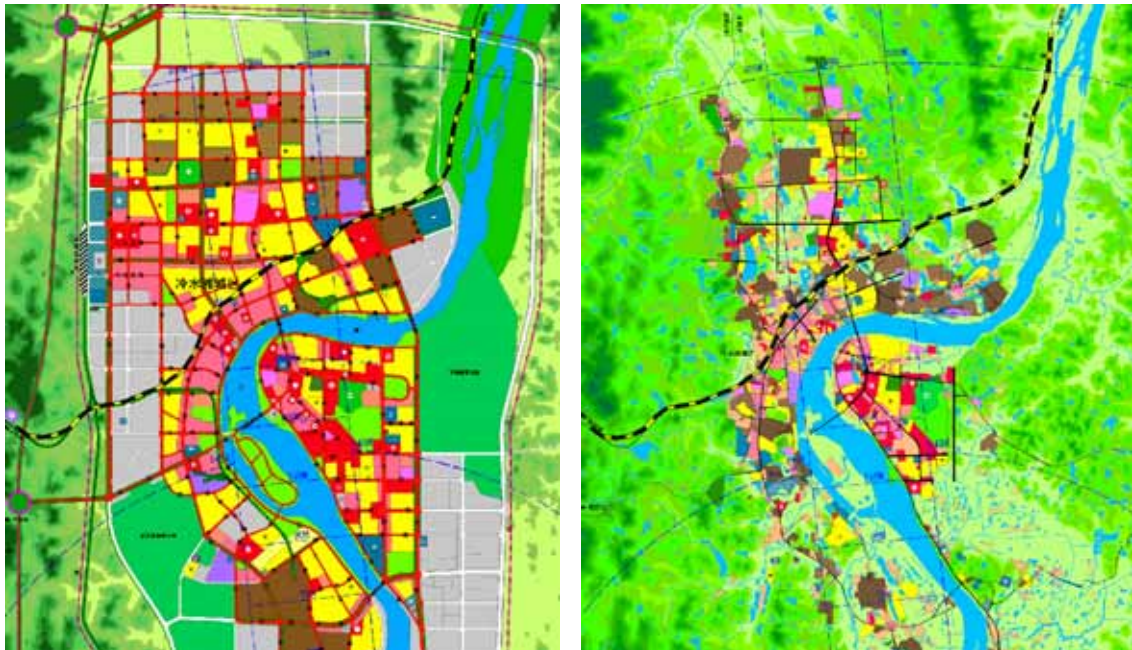


Figure 4. Current Land Use (right) and Planned Land Use (left color area)

These government projects help materialize the spatial framework. None project is planned outside the planned built-up area. More projects are planned in the Lengshuitan district (including the Phoenix Zone) than in Zhishan District. These projects include the construction of a new railway station that defines the west boundary of the built-up area in the Lengshuitan district, construction of many road segments that connect existing roads. The most significant public project might be the relocation of Lengshuitan government offices from the east side of the river to the west side. The new location falls within the interval between Pearl Road and Phoenix Road. Most of the government initiated projects have been completed, except for the redevelopment of the old city core. This redevelopment project is costly and tends to be put off until the government has enough resources.

A comparison of the used land parcels in the 2000 and planned near future land use will be interesting. As the map indicates, planned development in the near future in Lengshuitan District mainly fills the space between the Pearl Road and Phoenix Road. It also includes the development of the water front at both sides of the river. The planned near future development, therefore, features infill and compact development rather than leapfrog development over green space.

4.3 Guiding private investors

In the market economy, not all economic forces are controlled by the government, but they are indeed guided by the government planning to materialize the blueprint drawn in the planning documents. Three mechanisms are important. First, the relocation of the government office and other significant public facilities are signs of future development. Private sector generally responds to this signal well by following the government projects.

Second, a land banking system is set up to make sure that land planned for the middle future and far future will not be used in the near future. Even for the land preserved for the near future use, more detailed timing is implemented by the city government to make sure that land will not be leased without an acceptable price. With the land market unified by one supplier, the government is generally successful in selling developers land parcels with a high price.

Third, detailed development control plans regulate land development in its physical formats. Unlike the master plan that covers the whole metropolitan area, the development control plan lays out the subdivision for relatively small areas. Unlike the city master plan which needs approval from high level governments, the city government itself approves detailed development control plans. The plan specifies various measures for land development control, including but not limited to the following: the specific land use category; the building height limit, which is the maximum height for the above-ground section of a building; the floor area ratio, which is the total usable floor areas divided by the land area; building density, which is the building base area divided by the total land area used by the building; and green space ratio, which is land for green space divided by the total and area.

For example, the Detailed Development Control Plan for the North segment of Lingling Road, one of the major avenues in Lengshuitan District, controls land development in an area of 5.5 sq km. The plan specifies land use category for each street block. According to this plan, about one third of the total land area will be used for residential development, about one third for manufacturing and commercial activities, and the remaining one third for road infrastructure, green spaces and other public facilities.

The plan specifies road width for each road segment in the planned street network. It also specifies density relevant measures for each street block. The density measures generally vary according to land use categories. For example, the floor area ratio for manufacturing use is generally lower than 1, for commercial, greater than 1.5, and for residence, about 1.5-2. By this standard, the planned number of condo in this area is 25,000 and floor areas for manufacturing plants, commercial building and government offices will be as high as 0.3 million sq meters.

All above planning measures signalize a possibility of compact and high density urban forms in the future. The city government has tried to stop the spillover effects of urbanization into suburban areas with urban growth boundaries. It has guided private investor with government projects that fills the undeveloped intervals. It has timed land supply to turn the blue print into a reality. It also bridges the gap between the compact metropolitan vision and the physical built-environment with government projects and detailed development control plans.

What should be emphasized here perhaps is not whether governments have above measures available to control land development, but their motivation to implement these measures. In an economic analysis of government behavior by Yang and Cao (2007), as long as land is one of the most strategical resources for the city government and the city government faces the performance evaluation that emphasizes urban economic development, a rational government will pursue metropolitan consolidation for integrated land markets. In the past decades, metropolitan consolidation or annexation of the neighboring units by the central city has been a popular practice across China. The ability to control a big land market gives the city government a competitive advantage in competing external investment and to promote regional urbanization.

The compactness of the city region, therefore, may not be an intended policy choice, but the side product of rational city government behavior who tried to maximize its gain from limited land resources. From this per se, Yongzhou city government is similar to many other Chinese city governments who rely on land revenue for infrastructure financing. Monopolistic land pricing gives the city government unmatched position in obtaining precious revenue, which is necessary to run the local urbanization engine.

5 Planning for Perceived Motorization

5.1 Land allocation for transportation

As has happened in many other Chinese cities, land allocated for urban transportation has increased significantly in Yongzhou. In 2000, the total land used for transportation is only 8.5%. In the planned land allocation, the percentage increases to 14%. This increase can be mainly attributed to the pursuit for wide roads. Yongzhou has built road as wide as 100 meters, a road width reserved for cities like Beijing in the pre-reform period. There are strong reasons for the local government do so.

First, road width has been used as the indicator for the status of the city in the national city hierarchy. In the pre-reform China, road width increases in proportion to the size of the city. The widest streets exist in Beijing. Changan Street has a width of 110-120 meters. Provincial capitals generally have wide streets than the prefecture level cities. The *Urban Road transportation Design Guidance* published in 1995 even specifies the widest road a city can construct based on its population size. It specifies that a city of over 1 million population can have major roads as wide as 50 meters (This width include both sidewalk and motor lanes, but not the green belt between the side walk and buildings.)

With the liberalization of China's economy, city governments are gaining more resources for urban infrastructures and more freedom in road design. The local government generally preferred to build road as wide as it can afford. These wide roads are then used as a marketable image for the city because of the traditional connection between road width and city status.

In addition, the perception on possible increase in vehicle ownership also tends to increase land allocation for transportation. In the past ten 10 years, the annual vehicle growth rate is about 22% in the prefecture territory. The growth rate is even higher in the urban area.

The specified parking parameters tell us the expectation of the government leader and planning officials. For example, in the same detailed development control plan mentioned in the previous section, the document specifies 3 parking lots for every 10 condos. That is to say, the government expects the vehicle ownership increases to 0.3 vehicles per household.

Road width has been continuously increased in sequential planning documents. In Lengshuitan, for example, several roads partially constructed before 1995 (the year of the establishment of the prefecture level city) were expanded to a new width standard in the new planning documents after 1995. The new sections finished after 1995 is wider than the sections completed before 1995. This change has resulted in road bottle necks where road side buildings had already been constructed before 1995.

The preference to automobile is also indicated by the design of many manufacturing plants. Manufacturing plants are required to leave more than 10 percent of the total land area for transportation at their front gate. Many public building such as rail way station, government offices have very big plaza separating the building entry from the wide

streets. Bicycle racks either do not exist or are placed far away from the entry. All these design features increase the difficulty for non-motorized persons.

It is important to point out that increasing land allocation to road infrastructure does not necessarily result in a reduction in land revenue for the city government. Since wide roads can produce a more marketable image, the relative higher cost for wider roads can be recovered by attracting private investors who are willing to pay a higher price for land along wide roads. This linkage is reflected by one approach the city government employed to calculate the benchmark price for land leasing. Supposing the government builds the infrastructure serving an area of 10 sq km. The cost paid to the farmers and the engineering companies is 1 billion. Excluding land used for roads and other public facilities, two third of the land area can be leased to developers for revenue. The break-even land price will be 0.15 billion per sq km. The government then looks for a price higher than this amount. Its monopolistic position creates this advantage.

5.2 The Supply of public transit

In 2001, there were 18 fixed transit routes, 9 in Lengshuitan District and 8 in Zhishan District. One transit route linked Lengshuitan and ZhiShan. The transit routes were managed by two transit companies, separately owned by the two district government. There were 405 busses in total, among which 145 were owned by the governments and 260 owned by the private sector. Some routes have busses operated by both private and public sectors. Bus routes are designed by the transit management office. There is no subsidy for the private sector. Instead, the private operators have to pay a management fee in order to run their own vehicles in the business. The bus companies have their own depots. In total, they can park 200 vehicles, enough for the buses owned by the city governments.

The plan proposes an increase in bus routes to 43, including 6 routes linking Lengshuitan and Zhishan. Interestingly, it does not suggest any specific projects related to the transit in the near future. For the 49 major projects listed in the master plan for the near future, none of them is related to public transit. The timing of the suggested improvement, therefore, still has a lot of uncertainties.

Compared to the strong position the city government has taken in the land market, the city government takes a weak position in the transit market, signaled by its inaction in bus operation consolidation. One of the major reasons is the lack of connection between transit investment and government performance evaluation. The development of a better transit system is not central to the government interest. Economic growth is the major performance evaluation criterion for the government leader. Unlike the investment in road infrastructure that can lead to increased urbanization and many chained actions leading to economic growth, public transit investment rarely has this tangible effect.

The quality of the transit service, therefore, quite depends on how amble is the private sector is to address the need for transit service. Current situation indicates several issues. First, the planned fixed bus routes do not cover many block groups in the newly

developed area, particularly when the new area is for manufacturing activities. Second, without a favorable public finance, bus route design tends to be profit oriented. Almost every bus drives through the central commercial area in order to secure ridership, resulting in bus congestion. Thirdly, many buses are bought from the second hand markets. They are old and forbidden to run in big cities where emission control is strict. Fourth, the exclusion of para-transit tends to create a market gap artificially. Many new areas were served by jitneys, which were popular but have been forbidden today, as has been done in many other Chinese cities.

6. Discussion and Conclusions

The above information implies that the future land use patterns in Yongzhou tend to be compact, but may not be transit-oriented. First, a strong land use control in a metropolitan area with consolidated governance, coupled by a desire to maximize land revenue with planning and monopolistic pricing, tends to result in a compact urban form. As long as the basic fiscal institutions, such as land ownership by state and land revenue for city infrastructure construction, persist, a compact urban form can possibly emerge as the result of the rational city government behavior, even though compactness may or not be an intended selection. The Chinese cities, therefore, tend to be resistant to low density development even in a future with a high automobile ownership. Second, the same city government, however, can be less resistant to motorization pressure. Land allocated to road transportation has increased significantly. Wide roads, big squares, ample parking lots and low quality transit services will make people opt to private automobiles rather than nonmotorized transportation or public transit. The obtaining of a marketable image without an associated opportunity cost in land revenue loss is one major reason why city government allocates more land for transportation.

This trend is not unique to Yongzhou since they are understandable outcomes conditioned on China's common planning tradition and current governance institutions. For example, in Zhejiang Province, one of the most advanced regions in coastal China, cities have demonstrated an increase in urban density over the 8 years ending 2003. In 1996, the average urban land size per person was 62.82 sq meters. In 2003, it decreased to 56.96 sq meters. Meanwhile, the land allocated for urban roads has increased from 8.6% to 11.2%.

This trend for compact and auto-biased urban form presents a unique challenge in urban China. Liu and Guan (2005) attributed today's congestion in China's big cities to the conflict between the increase in automobile ownership and the dense urban form. With an urban land standard of 100 sq per person, Chinese cities are unable to afford a high automobile ownership. American experiences suggest about 40 sq meter of land to store and operate each passenger car. Chinese central government is obviously doing correctly by stating a transit priority strategy.

The solution lies in how governments implement the transit priority strategy. In a review of current land development themes in China, Yang and Gakenheimer (2006) point out that even though land development is subject to comprehensive government review,

accessibility is seldom the concern in major land use decisions. The formation of central business districts, the development of satellite communities, the evolution toward a multi-center layout are all land revenue driven and growth oriented, and the mobility and accessibility consequences are complicated.

The effectiveness of the transit-priority strategy, therefore, relies on a change in the attitude of the local government, who has intentionally select to stay strong in the land market but weak in the transit service market. It is unlikely this selection will change unless transit service quality becomes part of the evaluation criteria for city governments. It is also unlikely that the city government will abandon its automobile oriented land allocation and land use design until a national leadership begin to form strong transit-oriented land use signals for the city government. These government attitudes have to be carefully treated in designing an implementation strategy for transit-priority.

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