Chapter 2
The Developmental Strategies and Basic Principles for China's New Urbanization

The developmental strategies and basic principles for China's New Urbanization are the general guidelines for sustainable and healthy urbanization. These strategies and principles are not set in the stone. Instead, based on the different characteristics of urbanization in the four different stages, there shall be corresponding strategies and principles to guide urbanization in these stages. In this chapter, we will first review the various strategies and principles that guided China's urbanization during the past 60 plus years. We will then summarize the drawbacks and limitations of the current developmental strategies, and propose the basic principles, strategic changes of direction, and path based on the new historical conditions that China is transforming from traditional urbanization to New Urbanization. The New Urbanization will specifically focus on "high efficiency, low carbon, sound ecology, environmental protection, conservation, creativity, intelligence, and peace." The changes include from urbanization of numbers to urbanization of quality, from radical to gradual urbanization, from passive to active urbanization, from land-oriented to people-oriented urbanization, and from government-led to market-driven urbanization. The ultimate goal of the New Urbanization is to turn urbanization from focusing on speed to quality, and from being sub-healthy to healthy. Needless to say, without such strategic changes and transitions, China's urbanization will be unsustainable and eventually go off track. From our analyses, discussions, and field work experiences, we finally propose the strategic principles for China's New Urbanization, which include the following two aspects. First, we need to strategically guide the development and formation of urban agglomerations. Second, the development of mega- and supercities must be strictly controlled, though rational development of large cities is acceptable. Development of medium-sized cities shall be encouraged. Small cities and townships shall be the foci of New Urbanization. The ultimate goal is to form a new spatial urban pattern that is a coordinated development among urban agglomerations and large, medium, small cities, and townships.

C. Fang and D. Yu, *China's New Urbanization*, Springer Geography,
DOI 10.1007/978-3-662-49448-6_2

2.1 Fundamental Meaning and Strategic Background of China's New Urbanization

2.1.1 Comparison of the Fundamental Meaning Between New and Traditional Urbanization

The traditional urbanization is basically a so-called "three-highs-with- one-low" type of urbanization. Specifically, the three highs are high resources consumption, high carbon, and high pollution. The one low means low efficiency. This urbanization focuses primarily on the speed of urbanization, and too much on making money from land rentals. Overall, the traditional urbanization is land-oriented, number-oriented, passive, radical, and government-led urbanization. The obvious "negative effects" of such urbanization are the increasingly severe urban diseases. This is typical unhealthy and unsustainable urbanization, and contradicts with China's strategic goals of building a moderately prosperous society and sustainable modernization (Table 2.1).

The New Urbanization, on the other hand, is almost everything the traditional one is not. Specifically, the New Urbanization stresses high efficiency, low carbon, ecologic and environmental protection, conservation and creativity, and intelligence and peace. Sustainability is the core of the New Urbanization. It seeks the improvement of urbanization quality instead of quantity. It is people-oriented (instead of land-oriented). It is a comprehensive, quality-oriented, active, gradual, and market-driven type of urbanization. Contrary to the traditional style, the New Urbanization releases "positive energy" that promotes urban sustainability, and hence is healthy. The New Urbanization fits with China's strategic goals perfectly.

To actually change from China's traditional to the New Urbanization, we propose a few strategic transitions. First, urban traffic shall change from automobile automobile-dominated to non-automobile (bicycle)-oriented. Second, urbanization shall focus more on quality instead of quantity. Third, urbanization shall follow a gradual path instead of a radical one. Fourth, urbanization shall release more "positive energy" instead of "negative effects"; hence, we have active instead of passive urbanization. Fifth, urbanization shall change from land-oriented to people-oriented, from government-led to market-driven so that urbanization serves the people instead of governmental officials (for their political performance report cards). The ultimate goal of these transitions is to ensure successful implementation of China's quality-oriented and sustainable New Urbanization. We believe it is imperative for China's urbanization to follow these transitions in the next few decades so that Chinese cities can develop sustainably.

Table 2.1 Comparative analysis of the essential differences between the new and the traditional urbanization

Content	New Urbanization	Traditional urbanization	Strategic path
Urbanization level	Quality-oriented urbanization, moderately suitable speed, focuses on the quality and speed at the same time	Number-oriented urbanization, focuses primarily on the speed of urbanization	From number-oriented to quality-oriented
Core of urbanization	People-oriented	Land-oriented	From land-oriented to people-oriented
Driving factors	Innovation-driven and smart-driven	Resources-driven and capital-driven	From factor-driven to innovation-driven
Driving pattern	Intensive economic growth pattern featured with "three-lows-with-one-high," low resources consumption, low carbon, low pollution and high efficiency	Extensive economic growth pattern featured with "three-highs-with-one-low," high resources consumption, high carbon, high pollution and low efficiency	From extensive pattern to intensive pattern
Urbanization path	Gradual urbanization step by step	Radical urbanization at one step	From radical to gradual urbanization
Urbanization process	Comprehensive urbanization, including the urbanization of land, population, economy and society, etc.	Land-oriented urbanization, too much on making money from land rentals	From single factor to comprehensive urbanization
Urbanization subjective	People-oriented, active urbanization	Officials-oriented, passive urbanization	From passive to active urbanization
Urbanization orientation	Market-guided urbanization	Government-guided urbanization	From government-guided to market-guided urbanization
State of urbanization	Healthy urbanization, sustainable development	Unhealthy urbanization, increasingly severe urban diseases	From unhealthy to healthy urbanization
Urbanization prospect	Sustainable urbanization, urban sustainability	Unsustainable urbanization, increasing urban vulnerability	From unsustainable to sustainable urbanization

2.1.2 Strategic Background for Promoting New Urbanization

2.1.2.1 The Central Government Made Specific Plans for Implementing New Urbanization in the First Urbanization Working Conference

The Urbanization Working Conference on December 12, 2013 was the first time the central government recognized urbanization as a strategic milestone for China's modernization and sustainable development. Implementing New Urbanization would also serve as an important means for sustainably dealing with mounting issues (such as underemployment, land degradation, etc.) in the agricultural section and rural areas, supporting regional coordinated development, increasing domestic demand, and upgrading industrial structure. In short, New Urbanization is an integrated component of the New China Dream. In the conference, scholars and governmental officials together analyzed the developmental trend of China's current urbanization, and proposed the guiding ideology, primary goals, basic principles, and key tasks for New Urbanization. The conference attendees agreed that urbanization is a natural historical process, an integrated part of China's socioeconomic development. To this regard, urbanization shall proceed based on the recognition of the historical conditions that China is still in its primary socialism stage. Specifically, urbanization shall proceed vigorously, securely, and firmly. The goals of urbanization shall be clear, the steps stable, and measures instigated. New Urbanization will focus more on the quality of urbanization, the development for people, the improvement of employment opportunity and conditions, and eventually increase the quality of life in cities. The spatial structure of China's New Urbanization will be based on the spatial distribution of resources and environmental carrying capacity. Urban agglomerations are at the core, large, medium, and small-sized cities and townships are distributed in a coordinated hierarchical structure that they support and supplement one another. In the conference, the attendees also proposed six major tasks for China's New Urbanization, namely, urbanizing rural population, improving urban land-use efficiency, establishing diversified and sustainable financial security system, optimizing urbanization spatial structure, improving the urban construction level, and strengthening the management of urbanization. This new sustainable urbanization will eventually be a great force to promote China's sustainable socioeconomic development and all citizens' China dream.

2.1.2.2 The Communist Party's "Eighteenth Congress" Report Promotes Chinese Characteristic New Urbanization

In the "Eighteenth Congress" report in November 2012, the Chinese Communist Party (CCP) specifically promoted a Chinese characteristic development path for new industrialization, information technology, urbanization, and agricultural

modernization. The path was characterized by promoting deep integration of information technology and industrialization, positive interaction between industrialization and urbanization, and coordinated development between urbanization and agricultural modernization. The goal is a synchronized development for industrialization, information technology, urbanization, and agricultural modernization. To achieve these goals, the report indicated that we needed to improve the institutional mechanism for the integration of urban and rural development. Specific efforts were also needed to promote integration in terms of urban planning, infrastructure, and public services. The integration shall facilitate fairer exchange of development factors and better allocation of public resources between the cities and the rural areas. The goal is to create a harmonious industrial–agricultural and urban–rural relationship in which industrial development will facilitate the development of agriculture, and urban development will benefit the rural development as well. The report also stressed the importance of promoting ecological civilization and optimizing the spatial distribution of land-use patterns. The fundamental principle of the New Urbanization is to urbanize in a sustainable way so that the development of the cities will not come at the expense of the rural and natural landscape. The development of society and economy, allocation of resources, expansion in space, and exploitation of the environment shall proceed within limits. Within the cities, we shall fully implement the strategy of establishing main functional areas and developing the cities around these areas focusing on their primary functions. The report concludes that the future urban landscape in China shall be scientifically guided, fully supporting agricultural development and having secure ecological and environmental capacity.

2.1.2.3 The Central Government's Economic Working Conference Defines and Promotes the Compact, Intelligent, Green and Low-Carbon Mode of New Urbanization for Two Consecutive Years

In both Decembers of 2012 and 2013, the Central Government's Economic Working Conference stressed the importance of promoting New Urbanization, focusing on urbanization quality. Urbanization was regarded as the nation's historical task, and the most promising process to increase domestic demand. The New Urbanization will focus primarily on improving urbanization quality instead of seeking for higher numbers. Development of cities shall respect local conditions. The spatial pattern of China's urban landscape shall follow a scientific guidance in which the distribution of large, medium, and small-sized cities and townships must agree with the existing regional economic and industrial distribution pattern, and the scale of development must be within the environment and resource carrying capacity. One of the primary tasks is to steadily and gradually urbanize rural population. The connotation of urbanization will no longer only mean increase in population and economic gains, but also embed ecologic security and

environmental sustainability. The New Urbanization shall be compact, intelligent, green, and low-carbon.

2.1.2.4 The Communist Party's Third Plenary Session of the Eighteenth Congress Promotes the Establishment of Healthy Urbanization Development Institutional Mechanisms

The CCP Central Committee's Decisions on Comprehensive Deepening of the Reforms of Major Issues, passed on November 12, 2013, explicitly stated that establishing harmonious and sustainable human–land relationship is the fundamental task of the nation in the new era. The reform shall now be extended to stress China's ecological civilization and establish proper institutional mechanisms for ecological civilization and sustainability, which will further promote better land development practices, better resource conservation, and better protection for the environment and ecologic systems. The local government shall change their roles and functions from administrator/manager to more like entrepreneur. The current financial and taxation system needs to be further reformed to facilitate the integration of urban and rural development and establish a new open economic development mechanism. A new integrated urban–rural and industry–agriculture relationship will be established so that development of industries and cities will facilitate the development of agriculture and rural areas. The traditional urban–rural two-tier spatial structure will be broken so that farmers can participate and share the benefits of the socioeconomic development and society modernization equally as their urban peers. The farmers will be given more financial freedom and property rights. Market mechanisms will be established to ensure fair exchange of production factors and allocation of resources between the urban and rural areas.

2.1.2.5 The State Council Approved the National New Urbanization Plan 2014–2020

In March 16, 2014, the State Council of China approved the implementation of the National New Urbanization Plan 2014–2020 (Plan henceforth). The plan was established based on the eighteenth Congress Report, CCP Central Committee's Decisions on Comprehensive Deepening of the Reforms of Major Issues, Central Government's Urbanization Working Conference, and the Twelfth Five-Year Plan of People's Republic of China for National Economic and Social Development, and the National Main Functional Area Planning. The essence of the plan is to stress the development of Chinese Characteristic New Urbanization, focus on urbanization quality, clarify the development path, primary goals and strategic tasks for China's future urbanization, and coordinate relevant system and policy innovations. The plan will be the macro, strategic, and fundamental guidance for China's health urbanization in the future.

2.2 Strategic Transition of China's New Urbanization

2.2.1 Fundamental Principles for Transition to New Urbanization in China

2.2.1.1 Adhere to the Principles of People-Oriented, Highlighting Scientific Development

In the twenty-first century, the development of China's urbanization is facing the new requirement for developing new industrialization, building a moderately prosperous harmonious society, and promoting sustainably coordinated development of population, resources, environment, and economy. It is the essential requirement for China to implement its people-oriented and sustainably scientific development to accelerate the development of urbanization. Development of cities must be based on the carrying capacity of resources and ecological environment, and under the premise of respecting the laws of urbanization.

2.2.1.2 Based on National and City Conditions to Solve "Urban Diseases"

The choice of urbanization modes in China must be based on the fundamental fact that China has too many people but too few lands, is experiencing industrial restructuring, and has enormous employment pressure. In addition, urbanization will also abide by local conditions. To deal with a range of urban disease problems occurring in the process of urbanization, including excessive speed of urbanization, being too large, traffic congestion, high housing prices, environmental pollution, uncontrolled expansion problem, and management system problem, the choice of China's urbanization must be delicate but swift, practical but reasonable, but most importantly, sustainable and always adjusting to national and local conditions.

2.2.1.3 Urbanize According to Local Conditions

When planning for urbanization in different regions, we must realize their different levels of urbanization. In addition, since the current urbanization policies are administered at a national level, it is crucial to understand the regional differences, so that we can provide more appropriate guidance for different regions. Urbanization in different regions, hence, shall give full consideration to regional difference in establishing different main functional areas, different urbanizing paths of development, and urbanization patterns. We need to avoid engaging in "one size fits all" type of urbanization so that policies will not affect the healthy development of urbanization in different regions.

2.2.1.4 Response Well to Global Competition and Focus on International Standards

Economic globalization shortens the economic distance between countries and regions, and impacts on economic development and urbanization patterns in every country in a variety of ways. In order to adapt to the new trend of global economic changes, and to address global urban competitiveness, regional central cities and large metropolis are accelerating their integration into the global network system [1]. Urban functions are becoming more international. Urban development mechanism and operating environment further upgrade with the international standards. Therefore, the choice of the urbanization paths must take full account of the impact of economic globalization on the development of urbanization in China, and focus on international standards. In the meantime, urbanization in China shall learn the lessons from other nations, and must not copy the development model of urbanization overseas, so that we will not wound up into the same detour of polluting first and control later.

2.2.1.5 Push for Model Innovation to Ensure Healthy Urban Development

The New Urbanization model will focus on constant innovation of development mode and acceleration of the development of New Urbanization strategies. The tasks are to change the unsustainable traditional model of high resource consumption, high economic growth, high carbon emissions, and high pollution into efficient low-carbon, environmental protection, conservation and innovation, and intelligent and peaceful development model of sustainable and healthy urbanization. Appropriately handling the relationships between quantity- and quality-oriented, radical and progressive, passive and active, land-based and people-oriented, market-driven, and the government-led models of urbanization is critical to ensure the healthy and stable development of China's future urbanization.

2.2.2 Strategic Transition of New Urbanization: From Rate to Quality

The traditional urbanization is often characterized as high resource consumption, high economic growth, high carbon emissions and high pollution, and hence unsustainable model. The New Urbanization, however, is an efficient low-carbon, environmental protection, conservation and innovation, intelligent and peaceful hence sustainable, and healthy development model. To ensure successful transition of China's urbanization from the traditional model to the new model, we need to achieve the following five strategic transformations. These include transformation

from quantity- to quality-oriented urbanization, from radical to progressive urbanization, from passive to active urbanization, from land-rental-based to people-oriented urbanization, and from government-led to market-driven urbanization. In so doing, the New Urbanization will ultimately change from focusing on the speed to the quality and changing from sub-healthy to healthy urbanization. Only by achieving these strategic transformations, China's urbanization will not go astray and be able to maintain sustainable, long-term, and prosperous development. We will elaborate the five strategic transformations below.

2.2.2.1 Transform from "Car-Ride-like" (Focusing on Quantity) to "Bike-Ride-like" (Focusing on Quality) Urbanization

Healthy urbanization is supposed to be the integration of speed and quality improvement all around, and should focus on inherent integration of economic, social, and ecological benefits. Above all, urbanization quality shall take precedence over urbanization speed. If in the past the pursuit of urbanization speed and numbers can be considered as a "car-ride-like" process, then the New Urbanization process is more of a "bike-ride-like" process.

1. Quantity-oriented urbanization is a "car-ride-like" process that seeks only speed and numbers. "Car-ride-like" rapid urbanization process is assuming that the resources and environmental carrying capacity are unlimited, so that urbanization can accelerate boundlessly. The assumption is apparently flawed, especially under the current restrictions of resources and environmental carrying capacity. The fact that we are experiencing increasingly serious resources and environmental bottlenecks and high-risk urban diseases is but an inevitable manifestation of such false assumption. The "numbers game" as often related with China's urbanization shows that the "car-ride-like," quantity-oriented urbanization can no longer continue. Scholars argue that the value of the current level of China's urbanization is largely a number's game and not reliable. The real urbanization level in China might very well be less than 40 %. Hence we shall never get overexcited by what appears to be 50 % of urbanization in China. In the Eighteenth Congress Report and the Central Economic Working Conference, the central government proposed to actively and steadily promote urbanization, and strive to improve the quality of urbanization, so that China's urbanization can be intensive, intelligent, green, low-carbon, and sustainable.
2. Quality-oriented urbanization is a "bike-ride-like" process that seeks quality and overall benefits. If we treat the traditional pursuit of urbanization speed and quantity as a "car-ride-like" process, then the New Urbanization process can be characterized as more of a "bike-ride-like" process that focuses on quality. "bike-ride-like" urbanization process is an active and secure process, not too fast, not too slow. If it is too fast, the "bike" (urbanization) will crash; if it is too slow, then the "bike" will fall. The proper way of riding the bike is to balance the speed and rhythm. This new strategy calls for properly handling the

relationship between improving speed and quality. Improving the quality of urbanization shall be the top priority for the New Urbanization. The New Urbanization will gradually dilute the importance of numbers and speed, but strengthen quality assessment indicators. By shifting the national urbanization policies from focusing on quantity to quality, improving urbanization spatial, economic, and social quality, we will be able to alleviate urban disease problems to a minimum.

2.2.2.2 Transition from Radical, Settled-at-One-Step, to Progressive, Step-by-Step Urbanization

1. The end of settled-at-one-step, radical urbanization. Radical urbanization stresses the quantitative aspect and speed of urbanization, emphasizing that urbanization shall be better if settled at one step. In particular, radical urbanization intends to absorb the rural population directly into the super-/megacities. This leads to quick population saturation (crowdedness) in super-/megacities and causes severe urban disease problems. In the early stages of urbanization, radical urbanization did play an important role in promoting urbanization, increasing necessary labor force for urban development, and providing a large consumer market. In the late stages, however, it becomes an unsustainable mode of urbanization as population, infrastructure, and resources can hardly be balanced. Transitioning from radical to progressive urbanization becomes imperative.
2. Promoting the "step-by-step" progressive urbanization. Progressive urbanization emphasizes the quality and efficiency of urbanization, stressing that urbanization shall be in place "step by step." Unlike in the radical version, rural population is gradually absorbed into the so-called "two smalls," i.e., small cities and small towns. Meanwhile, building new rural community is regarded as a primary approach of urbanization. Specifically, the rural villages will first build a center of the village that tends to absorb population. Once rural population is settling down, it will then be able to create rural communities and gradually build up to become small towns. After farmers turned to township citizens, various small townships will merge and combine to become small cities (county-level cities), which will further integrate and merge to become medium-sized city (prefecture-level cities). Such a step-by-step, progressive model of urbanization will have much less impact on the environment, less demand for radical land-use change and urban land expansion, and allow urban infrastructure to be sufficiently built to accommodate the population demands. In a nutshell, progressive urbanization stresses urban development principles that urbanization is a fair and just, step-by-step, sustainable process. Progressive urbanization emphasizes the growth of small and medium cities and small towns so that they will become the driving forces and development poles at different spatial scales for regional development. Moreover, progressive urbanization also stresses people-oriented

development, integrated urban and rural planning, balanced spatial distribution, enriched citizens, and prosperous township. The prominent tasks for progressive urbanization include improving citizen's quality of life, narrowing the development gap between urban and rural areas, and between rich and poor. Progressive urbanization process is an effective means to enhance the quality of urbanization, solve the urban disease problem, and a sustainable and healthy urbanization, especially in the late stages of urban development.

2.2.2.3 From "Negative Effects" (Passive Urbanization) to "Positive Energy" (Active Urbanization)

1. "Negative effects" due to passive urbanization. The current urbanization in China is the path of passive urbanization. We term it passive urbanization because urbanization in China is mostly a government-led process, sometimes coerced by government administrative interference to reach certain "urbanization level" (number's game). Such "urbanization" often ignores the local conditions and local people's willingness. Although in the short term urbanization seems to reach new levels, and farmers became city dwellers. Yet, such urbanization almost always leads to landless farmers, under- or unemployment, stressed social security services, increased social instability, and reduced quality of life for all residents. Numerous cases have proved that passive urbanization ignored the fundamental development law of urbanization, and the farmers' approval for urbanization (just assumed that farmers all wanted to be "urbanized"). More importantly, some local governments and developers implement vigorous demolition through joint efforts to convert farming land-use to urban land-use, and change farmers to "citizens." Such passive urbanization led to a series of violation of residents' basic rights, and intensified the conflict between the government and farmers. Passive urbanization not only increased living burden of farmers, but also increased the risk of government debt, which leads to increasing negative effects. Some argue that China's urbanization is urbanization based on demolition. Apparently, passive urbanization is not people-oriented, which was directly against the goals of urbanization.
2. Active urbanization releases "positive energy." Active urbanization is a farmer-led, market-driven, and government-guided process. For active urbanization, farmers voluntarily propose the approaches for urbanization. The decision is made via collective self-organization within the rural communities. This urbanization process fully respects the wishes of farmers, and follows the principles of voluntary assessment, voluntary relocation, self-construction, self-financing, and self-management to promote urbanization. With active urbanization, farmers are allocated with certain retail shop fronts so that the farmers will have employment security after being converted to citizens. In the meantime, the newly urbanized citizens' social security will be embedded into the national urban social security system, enabling the newly urbanized citizens to

fully enjoy the city's infrastructure and public service facilities. This will effectively solve the various concerns and worries often occurred after farmers are urbanized. In addition, the rural collective organization will set up various forms of management companies, including collectively built farms, vegetable production bases, agricultural machinery storage bases, cultural and educational facilities, and recreational facilities. The collective organization will also facilitate the setup of various businesses with the newly urbanized citizens as shareholders to receive dividend of the business at the end of the year. With such active urbanization, the quality of life of the urbanized citizens shall be greatly improved. Their income level shall be greatly increased. Active urbanization, hence, will promote social stability and harmony, and continuously release "positive energy" which will drive the formation of a virtuous cycle of urbanization.

2.2.2.4 From "Land-Rental Oriented" to "People-Oriented," from Land Urbanization to Human–Land Coordinated Urbanization

The New Urbanization in China is a synchronized process of population urbanization, land urbanization, economic urbanization, and social urbanization. The New Urbanization, hence, will promote the coordinated development between human beings and the environment.

1. The land urbanization which reaps revenue from land rental. The land-rental-oriented urbanization focuses primarily on making money by renting land in the process of urbanization. Apparently, under such mode, the only key for maximum benefit is to acquire more lands and rent them out. Under the disguise of enhancing urbanization level, the governments jointly work with various developers to rush the farmers into the city, and hence artificially increase the "level of urbanization" and require more land for that. In so doing, the local governments reaped a huge amount of land revenues. Because the land market is almost exclusively controlled by the government, the governments are able to rent the land to make money in the name of urbanization. In the meantime, the loss caused to farmers and issues concerning improving the living standards of farmers and other livelihood relevant issues were casually mentioned or ignored. In the traditional urbanization process, there was just too much emphasis on how to convert various types of land to urban land, which almost leads to endless urban sprawl without check. Apparently, such urbanization is but a one-sided understanding of the real urbanization that only focuses on converting rural land into urban construction land, ignoring other aspects of urbanization including the urban and rural infrastructure, public services and the protection of livelihood security, and other social contents. Under the guidance of such one-sided understanding, China's traditional urbanization suffers high incidence of urban diseases and high-risk, low-quality level of urbanization.

2. People-oriented urbanization that aims for harmonious human–land relationship. The New Urbanization that was promoted under the new historical conditions focuses on people-oriented, harmonious urbanization process. The goal of New Urbanization is to seek appropriate understanding of the mutual promotion and constraints between land urbanization and social urbanization, between human and land, and also curbs the simple "selling land to make money" mode of urbanization. New Urbanization stresses orderly and scientifically guided land urbanization, and in the meantime put the vital interests of the farmers in a prominent position. New Urbanization aims to bring the benefits from reform and opening up policies to both the rural and urban households, to ensure that every citizen can equally enjoy the benefits of education, health care, employment, social security, and housing, which was traditionally a privilege for only urban dwellers. In November 12, 2013, Article 11 of the "CPC Central Committee's Decision on Major Issues of Deepening Reform," which was approved by the CCP Central Committee's Eighteenth Congress Third Plenary Meeting, proposed to establish a unified construction land-use market. Within the market and under the premise of planning and using controls, rural collective construction land is allowed to be transferred, leased, and shared with the same right and price as state-owned land. The establishment of such market will narrow the scope of land acquisition, regulate land acquisition program specifications, and provide rational, standardized, multiple protection mechanism for farmers whose lands were acquired. In addition, the decisions also indicated that use of state-owned land for nonpublic usages will be reduced, while compensation will be required for such uses. New Urbanization will require the establishment of land-selling income distribution mechanism that takes into account national, collective, and individual rights, and allow a reasonable increase in personal income. To implement New Urbanization, we also need to improve the land lease, transfer, and mortgage secondary market. The decisions were to let the farmers get more property rights, and ultimately achieve rural–urban equality, equal opportunity, and equal treatment during urbanization process.

China's New Urbanization process is no doubt an extremely complex socioeconomic process. It also is extremely limited by ecological and environmental conditions. During the process of urbanization, we must highlight the "people-oriented" urbanization and "lands as the roots" principles. The primary challenge faced by such New Urbanization is to coordinate the relationship between urban and rural human–land relationship.

2.2.2.5 From "Official-First," Government-Led to "Citizen-First," Market-Guided Urbanization

1. "Official-first," government-led urbanization. "Official-first," government-led urbanization is currently China's most popular mode of urbanization. Much of this urbanization process reflects the will of the "officials" instead of the market

or the farmers/citizens themselves. The government is the absolute strong party. In the process of urbanization, governments often act without seeking advice from the people, "call the shots" everywhere, stretch the "visible hand" far too long, and overdo the unreasonable acts. Decisions made under such a mindset often disregard the wishes of farmers and/or citizens, and totally ignore the principles and basic laws of market mechanisms. Such urbanization generally ignores the public participation in a democratic decision-making and social justice environment, resulting in artificially high-level and poor-quality urbanization. Apparently, New Urbanization attempts to shift from such traditional path.

2. "Citizen-first," market-guided urbanization. "citizen-first," market-oriented urbanization is the process of urbanization under the new strategic context of urbanization. The urbanization process fully reflects the role of market mechanisms, public participation, and democratic decision-making. The path and way of urbanization are not determined by the officials, instead by the market or the farmers/citizens themselves. Governments under such urbanization mainly serve as the regulatory organization to provide guidance to ensure that the speed, size, volume, and rhythm of urbanization are scientifically designed and rationally implemented. The role of governments shifts from decision-makers to market failure preventers in case failed market leads to excessive urbanization. In this process of urbanization, farmers/citizens will become a new force for urbanization. Private capital will follow the rules of market economy, and become an important financial source to promote urbanization and regulate the speed of urbanization. The "people-first," market-oriented urbanization will attempt to ensure the level and quality of urbanization increase synchronously. This is the New Urbanization that shall be vigorously advocated.

2.2.3 Strategic Developmental Directions for the New Urbanization

The Central Work Conference of Urbanization on December 12, 2013 is the first time urbanization was discussed at the highest governmental level, which often was hailed as been a strategic milestone for promoting New Urbanization at the central government level. The conference itself fully reflects China's national determination to promote New Urbanization, and regard it as the only way to build a moderately prosperous society and to achieve sustainable modernization in China. It is also an important way to solve issues concerning development of the agriculture, rural areas, and farmers. New Urbanization shall provide strong support for balanced regional development, expanded domestic demand, upgraded industrial structure, and serve as an important starting point to achieve the great rejuvenation

of the China Dream. Based on the discussions and proposals presented in the central work conference of urbanization, it can be summarized that the national strategic plan of New Urbanization is embodied in the so-called "123456" strategies, namely, there are one (1) subject, two (2) cores, three (3) process, and four (4) red lines. At the national level, urbanization aims at building five (5) axes and achieving six (6) goals.

2.2.3.1 One Subject: Urban Agglomeration

From the national "eleventh" and "twelfth Five-Year" Plan, for ten consecutive years the CPC Central Committee proposed that urban agglomeration is the primary space form for New Urbanization. The plans also proposed to continue to optimize and build the three national urban agglomerations, namely, the Beijing–Tianjin–Hebei, the Yangtze River Delta, and Pearl River Delta urban agglomerations to compete internationally. In addition, secondary urban agglomerations in the Midwest and Northeast regions where conditions permit shall be promoted via market forces and national planning guidance. Through step-by-step development, these urban agglomerations will become focal points and growth poles in the Midwest and Northeast regions. It is safe to say that China's urban agglomerations are the most dynamic and promising development cores of China's economy whether in the past or in the future, and the key development and optimization zones in China's main function regional division. Urban agglomeration is the future of China's urban development, and plays a strategic role in the national distribution pattern in productivity. Urban agglomerations have become the brand-new geographic units for the country to participate in global competition and the new international division of labor. Their development will have profound impact on the development of China's international competitiveness, and is affecting the pattern of the twenty-first century global economy. In promoting the New Urbanization, the planners, decision-makers, and urban development practitioners must follow scientific and rational principles to build a hierarchical national urban agglomeration, regional urban agglomeration, and local urban agglomeration.

2.2.3.2 Two Cores: People-Oriented and Quality-First

Promoting the two cores is of strategic importance for the New Urbanization. First core highlights the people-oriented urbanization and regards promoting the people-oriented, people-centered urbanization as a primary core mission. Continuously improving the quality of the urban population, the quality of life, promoting stable employment, and orderly shifting farmers to citizens are the primary tasks of New Urbanization. Second, quality-first urbanization is highlighted on improving urbanization quality instead of playing a number's game. In particular, improving urbanization quality includes the following aspects, i.e., focusing

on improving the quality of urban development, steadily improving urbanization level based on households, greatly improving the efficiency of urban land-use and population density in urban built-up areas, effectively improving energy efficiency, reducing energy consumption and carbon dioxide emissions intensity, and effectively improving the level of urbanization and management level. These are the concrete manifestation of improving urbanization quality.

2.2.3.3 Three Processes: Urbanization Is a Combination of Natural, Historical and Long-Term Processes

The New Urbanization for the first time affirmed that the urbanization process is primarily a natural process that shall not be altered or manipulated too much by human beings. It is also an inevitably encountered process for China's socioeconomic development. Furthermore, the New Urbanization must proceed abiding by the basic national conditions that China is still at its primary stage of socialism, which requires the urbanization to follow the law and make the best. In so doing, urbanization will be a smooth, natural, and sustainable process. Second, the New Urbanization also confirms that the national urbanization process is a historical process, and hence needs to comply with the laws of history and laws of urbanization development stages. Urbanization cannot go beyond the history of urban development, but must respect the history, culture, and heritage of the region to build beautiful cities with historical memory, geographical characteristics, and ethnic characteristic. Third, the New Urbanization affirms that urbanization is a long-term process. Urbanization must be scientific, orderly, active and steady, instead of being hurried, rushed. Urbanization shall avoid violating the objective laws of urban development with undue haste. Urbanization shall develop at an appropriate speed that is determined by local conditions to ensure that the New Urbanization synchronizes with industrialization, agriculture modernization, and development of information.

2.2.3.4 Four Red Lines: Arable Land, Ecosystem, City Boundary, and Financial Security Lifeline

Implementing the New Urbanization in China must stick to the strict red lines in arable land, ecosystem, city boundary, and financial security. The first red line indicates that arable land cannot be further developed to urban land. Based on the principles of promoting intensive and efficient production space, livable modest living space, and beautiful overall ecological space, New Urbanization intends to form a rational structure of production, living, and ecological spaces. In the process, industrial land can be reduced reasonably, while living space especially residential space can be increased appropriately. In the meantime, farmland, orchard, vegetable, and other agricultural spaces must be protected to ensure national food security. The second red line refers to delineate and hold ecological spaces. We

must attach great importance to ecological security. If possible, we need to expand land uses for forests, lakes, and wetlands, and enhance the capacity of water conservation and environmental capacity. Urbanization shall also rely on the existing landscape context and other unique scenery to make the city part of the nature, so that residents could see the mountains and waters, and be nostalgia. In the process of promoting integrated urban and rural development, we should pay attention to retain the original style of villages, cut trees only when necessary, do not fill the lake, demolish only when needed, and improve the living conditions of the villages in the original form as much as possible. The third red line refers to scientifically delineate and hold the urban development boundary line. Cities shall be part of the nature so that urban residents could access the "Green mountains and waters." Urban planning should be gradually shifted from the expansion of city boundaries to boundary limited and spatial structure optimization planning. The fourth red line is to establish financial security lifeline. A fiscal transfer payment mechanism linked to the conversion of farmers to urban citizens shall be established to ensure its security. In addition, an efficient management system of local bonds needs to be established to encourage social capital to participate in the investment and operation of urban public facilities.

2.2.3.5 Five Axes: The "Two-Horizontal-Three-Vertical-Axes" Spatial Structure of National Urbanization

The decision clarified the "Two-Horizontal-Three-Vertical-Axes" urbanization strategic spatial structure as proposed in the National Main Function Area Planning as the spatial framework for promoting China's New Urbanization. The "Two-Horizontal-Three-Vertical-Axes" refers to the Eurasian Continental Bride and Yangtze River as the two horizontal axes, and the Coastal China, Harbin–Beijing–Guangzhou railway, and Baotou–Kunming railway as the three vertical axes. The spatial pattern centers on the nation's prioritized and focal urbanized regions, linking the other cities along the axes to form an important urbanization strategic structure. The New Urbanization will stick to this spatial structure. Urban development will be based on the resources and environment carrying capacity to build scientific and rational macro-urbanization layout. The urban agglomeration will serve as the main urbanization form to promote rational division of labor, and complementary functions and collaborative development among large cities and medium and small cities and towns.

2.2.3.6 Six Goals

The Central Work Conference for Urbanization proposed six distinctive goals for China's New Urbanization in the new era. These goals are the primary tasks for promoting sustainable and healthy urbanization in China. These include urbanizing agricultural population, improving the efficiency of urban construction land-use,

establishing multiple sustainable financial security mechanism, optimizing the spatial layout and form of urbanization, increasing the level of urban construction, and strengthening urbanization management. These tasks are also the specific objectives to advance national urbanization.

2.3 Strategic Path for China's New Urbanization Development

In Article 23 of the "CPC Central Committee Decision on a number of Major Issues Concerning Deepening Reform," which was passed in the Third Plenary Session of the Party's Eighteenth Conference, it was made clear that we need to improve the institutional mechanisms for healthy development of urbanization. To do so, we must adhere to the New Urbanization path with Chinese characteristics, which focuses on promoting human-centered urbanization, coordinated development of medium and small cities and towns, integrated development of industrialization and urbanization, and coordinated urbanization and new rural construction. The overall goals are to optimize the urban spatial structure and management structure, and enhance the cities' comprehensive carrying capacity. In addition, the process aims to transfer rural population to urban dwellers based on local conditions, and gradually urbanize the ones that meet the requirements into urban residents. This new strategy pointed into the right direction in China by shifting the sub-healthy to healthy urbanization development. According to the basic principles of this new thinking and strategic transformation of urbanization development, China's new focuses on the strategic transformation of urbanization can be summarized as being "efficient, low-carbon, ecology-friendly, environmental protection, conservative, innovative, intelligent, and peaceful." Through promoting smart growth, low-carbon, ecological civilization, environment-friendliness, resource conservation, innovation, intelligence, and safety, we intend to develop China's cities to be with Chinese characteristics and international influence and capacity for sustainable development, totally shift the traditional urbanization from the sub-healthy to healthy development (Fig. 2.1).

2.3.1 High Efficiency Path: Economic Sustainability for Smart City

The high efficient path of urbanization requires urban economic development to change from the traditional mode of extensive economic growth in favor of the pursuit of intensive and sustainable economic development. Urbanization shall focus on smart growth to create conditions for building international cities, metropolis as well as world cities as the world's growth centers.

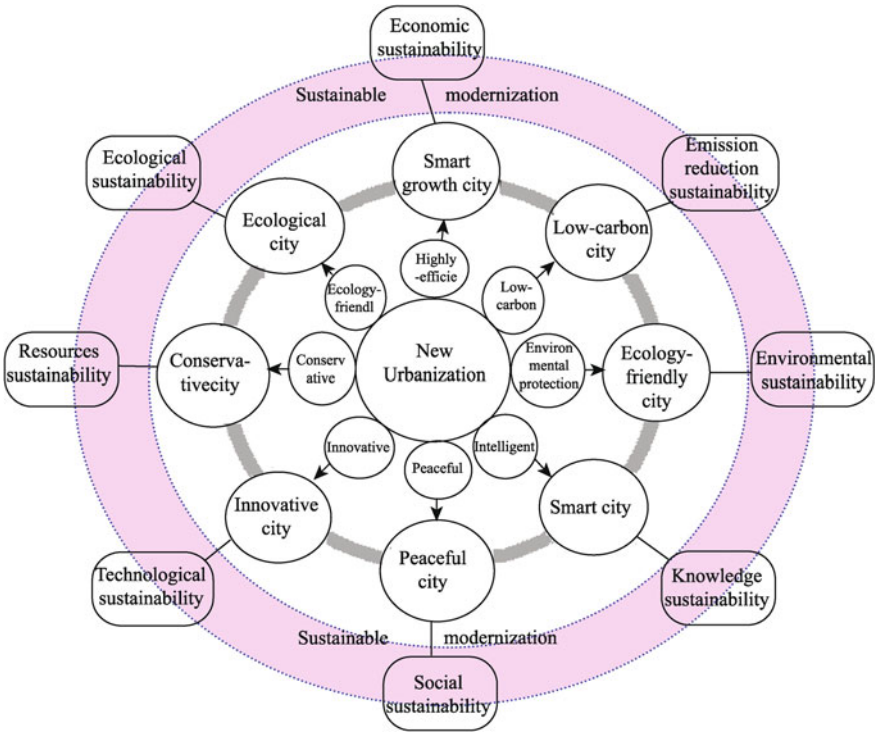

Fig. 2.1 Strategic path for China's New Urbanization development and sustainable modernization

2.3.1.1 Optimizing Urban Economic Structure and Promoting Urban Function Upgrading

Urban transformation process is the process of significant change and adjustment of urban development modes and functions. The transformation aims at enhancing and improving the quality of urban functions, and is the spiraling process of urban evolution from low to high levels, and an important means to extend the life of the cities and to achieve sustainable urban development. It is also the only way forward for the cities to evolve to higher stages. The process of upgrading the city includes transformation of urban orientation, functions, internal structure, space, management, image, and infrastructure (Fig. 2.2). Among them, upgrading the urban orientation is also called change the "sex" of the cities. The process is to re-select the nature of urban development. Urban orientation is a dynamic process with certain hierarchy. It cannot be too high or too low. The orientation of a city with certain period of urban development must be accurate. After this certain period, the cities need to go through a reorientation process or urban orientation upgrading. Upgrading urban functions is also known as the city changed its "career," which includes upgrading both the fundamental and nonessential functions. Upgrading the

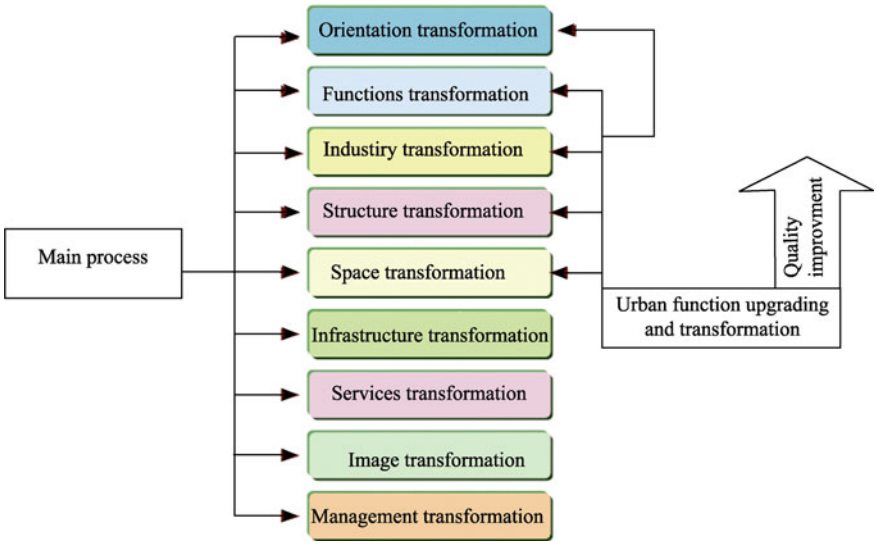

Fig. 2.2 Diagram of urban function upgrading and transformation

fundamental urban functions is to upgrade the cities as centers to provide external services for the economy, transportation, factors of production distribution, culture, and technology. Upgrading other nonessential functions of the city refers to meeting the needs of citizens' residential, commercial, educational, and public services demands. The trend for urban function upgrading is turning from a single function to integrated functions, from regionalization to internationalization. Upgrading urban industrial structure is also known as the city changed its "stuffing," which is the key to upgrading the entire city, including the industrial upgrading, product upgrading, industrial chain upgrading, and value chain upgrading. Industrial upgrading is defined by upgrading from the resource-based traditional manufacturing industries to advanced manufacturing and modern service industry, from resource-intensive industries to capital-intensive, technology-intensive, and intelligence-intensive industries. Product upgrading is defined as upgrading from resource-based, primary processing products to moderate and deep processing products, from resource-intensive and capital-intensive goods to technology-intensive and intelligence-intensive products. Industrial chain upgrading refers to extend the industrial chain from upstream to midstream, and then downstream, from no chain to a group of industrial chains. Upgrading the value chain is defined by upgrading from the low value to high value-added chains. Upgrading urban structure is known as the city changed its "frame," referring to the process in which cities rationalize, harmonize, advance, and globalize their industrial structures. In addition, it also includes upgrading of product structure (from low-end product to the medium-end product, and then high-end products),

spatial structure (points to lines to areal to network), and resources structure (natural resources to human resources to innovative resources).

2.3.1.2 Promoting Urban Industrial Cluster Coupling Mode from no-Chain no-Groups to Have-Chain Have-Group

The urban industrial chain consists of business suppliers, manufacturers, vendors, etc. based on the composition of the industrial context. According to the source of the main driving forces, it can be divided into the resource-driven industry chain, market-oriented, and technology-oriented industrial chain. In the globalization era, urban competition has evolved from competing among businesses and business groups to competition between the urban industrial chains. Among them, the urban combination mode with have-group and have-chain is the most competitive type. In China's current urban development, the urban industrial cluster coupling mode is dominated by either no-chain no-group, or have-group no-chain, or have-chain no-group, with relatively weak competitiveness. Apparently, such status quo needs to be changed (upgraded) from no-group no-chain to have-group have-chain, from a single cycle to multi-cycle economic structure [2]. This is the only way to enhance the international competitiveness of Chinese cities.

2.3.1.3 Promoting Urban Development Functions from Localization to Globalization

It is imperative to foster conditions for the development of international cities, international metropolis, and world cities in China and evolve them to be global growth centers. Following economic globalization, the replacement and upgrading of urban functions is closely related with global industrial, global supply, and global value chains. Cities become indispensable strategic nodes on these value chains. With these cities serving as global growth centers, we are able to generate a development environment in which supply of resources is on a global scale; industrial chain extends within the context of globalization; the flow and sharing of talent are also on a global scale. In so doing, the urban development functions change from the previous endogenous and local to internationalization. In the process of shifting from localization to the internationalization, we will build a modern international city industrial system, and continue to extend the industrial chain for a certain period of time, foster industrial clusters, and form an international industry cluster area. Cities in China will gradually grow into international industry clusters and global manufacturing base with modern services and international significance, and eventually become international metropolis or even world cities.

2.3.2 *Low-Carbon Path: Pollution Reduction Sustainability for Low-Carbon City*

The low-carbon path of urbanization requires low-carbon economy and low-carbon industry. To fulfill the requirement, we need to adjust the high-carbon industrial structure, implement low-carbon consumption, and promote sustainable development and emission reduction for low-carbon society and low-carbon cities. Low-carbon city refers to the city maintains energy consumption and carbon dioxide emissions at a low level in the context of rapid economic development. Low-carbon urban development means to minimize or stop the dependence on carbon-based fuels to achieve energy consumption and economic development transition, and in the meantime maintain the stability and sustainability of urban development. Development of low-carbon economy and building a low-carbon city are the inevitable choices of China's response to global climate change, and growth pattern change. It is an important part of a resource-saving and environment-friendly society emphasizing ecological civilization, and also the inherent requirements of sustainable development for China. The cities as the key human settlements are not only the main locations for greenhouse gas emissions, energy consumption, and carbon dioxide concentration, but also the prime territory for experimenting "low carbon economy" and "low carbon society" theories to achieve low-carbon development.

Urban development in China currently still follows the path of "high resource consumption, high energy consumption, high carbon emissions, and low development efficiency." The current urban development modes in China are a typical "high energy consumption and high pollution production" mode, and "pollution first and treatment later, low-end first and high-end later, extensive development first and intensive development later" pattern. In order to fundamentally change such unsustainable urban development, future development should be gradually transformed into a "low resource consumption, low energy consumption, low carbon emission, and high development efficiency" (sometimes referred to as the "three low and one high" model of economic development). Urban development will gradually become less dependent on high-carbon industries. The goals are to maximize economic, environmental, and social benefits with minimal resource consumption, minimum energy consumption, and minimum carbon emissions. New Urbanization hence will promote the low-carbon city through the following approaches.

2.3.2.1 Promoting Urban Low-Carbon Energy

Urban and economic development depends on energy consumption. If there is no low-carbon energy sources and consumption, there will be no economic development of low-carbon city. Therefore, promoting low-carbon energy production is the

only way to realize low-carbon urban economic development. For most of Chinese cities' current development modes, the coal-based energy structure is difficult to change for a relatively long time. To achieve low-carbon energy consumption and low-carbon urban development, on one hand, we need to advance the technology to economically extract hydrogen from coal, and develop efficient hydrogen storage and transportation technologies. Coal can then be used in a clean and efficient low-carbon way. On the other hand, urban development in China shall make full use of hydropower, wind power, solar energy, tidal energy, nuclear energy, and other relatively clean and renewable energy sources. Urban development shall gradually increase the proportion of new energy in the energy mix, and actively promote clean coal conversion technologies. In the short term, increasing the proportion of oil and gas consumption while promoting the use of new energy sources and the development of new energy industries shall be regarded as the prime task for a clean, low-carbon urban development.

2.3.2.2 Promoting Low-Carbon Urban Economic Development

To promote low-carbon urban economic development, it is imperative to focus on encouraging upgrading urban industrial and establish low-carbon industrial structure. The traditional high energy consumption industries need to be reformed and transformed to new and high-technology-oriented industries. To do so, we need to accelerate the strategic adjustment of industrial structure, develop strategic emerging industries and modern services that are in line with the requirements of low-carbon, and promote the development of tertiary industry. This is the trend for most of China's urban industrial upgrading and an important way to reduce carbon emissions.

2.3.2.3 Promoting Urban Social Low-Carbon

Foreign experience shows that guiding low-carbon lifestyle, implementing low-carbon construction, promoting low-carbon transport, and encouraging use of "low-carbon products" are not only important parts of low-carbon urban construction, but also the necessity to implement low-carbon development strategies. It is estimated that carbon emission of transporting the same amount of goods by rail transport is only 5–20 % that of by highway. The bicycle as a zero-emission transport mode, its movability in a limited space in the city is 20 times of that of cars'. Therefore, public transportation shall be the leading mode of transport in cities with specific bus lanes. In China the traditional bike paths and walking trails shall be retained and further expanded, with being "fast, punctual, inexpensive and excellent" as the goal to optimize bus trip to reduce traffic emissions.

2.3.2.4 Promoting Environmental Low-Carbon

Environmental low-carbon refers to absorb and fixate greenhouse gases by certain engineer after they are discharged from the cities. If carbon dioxide emissions can be absorbed and all or most fixated, it is equivalent to reducing carbon dioxide emissions. This requires that the city continues to expand carbon sinks, improve urban space coverage, and develop and promote carbon capture and sequestration technologies. This can be done through active industrial, energy, carbon tax and carbon trading, monetary, and other policies to promote the construction of low-carbon society and low-carbon cities.

2.3.3 Ecologic Urbanization Path: Ecological Sustainability for Ecological Civil City

The ecologic urbanization path requires promoting ecologic sustainable development, developing ecologic economy, promoting ecological national economy and socioeconomic activities, building ecological industrial system, and national ecological civil cities.

2.3.3.1 Strategic Goals for Ecological Urbanization

The world has evolved from agricultural civilization to industrial civilization, and today to a new era of ecological civilization. Under such circumstance, ecological civil cities will serve as the role model and play a leading role for the construction of ecological civilization in China. Through the analysis of the various foundations for building ecological civil cities in China, we shall be able to synchronize agricultural modernization, new industrialization, New Urbanization, and information technology. In particular, these foundations for ecological civilization include natural environment and ecological capital base, ecological resources endowment and biodiversity, the development basis for ecologic economy and recycling economy, the foundation of Chinese cultural and social civilization, the ecological environment quality, ecologic cities, towns and communities, ecological ethics, ecological justice, and ecological education. Through the ecologic civil cities' leading roles, the goal is to achieve harmony among people, between human–land, of citizens' residential areas, of environment and ecology, and of socioeconomic systems. We intend to promote and develop cities in China to be world-class cities of ecological civilization, global ecological civilization exemplar area, international technology demonstration zone for ecological civilization, and civilization heritage of Chinese urban ecology. These cities will be green, ecological, low-carbon, environmentally friendly, intelligent, and innovative.

2.3.3.2 Strategic Approaches for Ecological Urbanization

In order to build ecological civil cities, we need to adjust and optimize ecological economic structure, create green innovation, recycling and efficient industrial system of ecological civilization. These strategies include building eco-agricultural, eco-industrial, and eco-services civilization systems, developing green ecological products, and optimizing the ecology–production– living spaces. The ultimate goal is to form a scientific and reasonable spatial urban ecological civil pattern. Specifically, the strategic approaches include ten primary tasks. The first is to build strategic emerging eco-industrial Demonstration Park. This includes nurturing and developing eco-food industry, bio-pharmaceutical industry and the medical device industry, new eco-materials industry, the digital ecosystem and cloud computing industry, eco-energy industry, and other strategic emerging eco-industrial industry. The second is to build ecological civilized living demonstration zones and ecological civilized demonstration cities, towns, and villages. This includes actively developing ecology tourism and cultural and creative industries, ecological education and training industry, ecological health care industry, eco art industry, digital animation industry, the ecological financial industry, ecological civilization exhibition industry, ecological health industry, rural home SOHO industry, ecological and cultural real estate, ecology information services, and ecology services industry such as ecological civilization Expo industry. The third is to build the infrastructure support system for ecological civilization. This includes accelerating construction of low-carbon eco transport systems, smart electricity and green lighting systems, intelligent information network system, new energy supply security systems, environmental protection systems, ecological restoration systems, etc. The fourth is to build public service security system for ecological civil cities. This includes accelerating the construction of ecological civilization urban ecological education and training system, social security system, ecological civilization heritage systems, ecological civilization security systems, and ecological barrier system. The fifth is to accelerate the construction of key ecological civil cities. This includes strengthening the implementation of the ecological product engineering, cell engineering, eco-park project, ecological enterprise engineering, and ecological civilization heritage projects. The sixth is to build innovative operating mode for investment and financing system of urban ecological civilization construction. The seventh is to strengthen technological innovation to ensure technical support system for international urban ecological civilization. The eighth is to create innovative operational mechanism, improve pluralistic, coordinated, democratic and efficient management system of ecological civilization, strengthen administration mechanisms and the organization and leadership of ecological civilization construction, implement target responsibility and corporate responsibility for ecological civilization construction, improve the ecological civilization construction information management platform, and generate the roadmap for ecological civilization building strategies. The ninth is to strengthen the awareness of ecological civilization, promote ecological civilization map, and expand channels for public participation.

The tenth is to implement innovative system design and policy support system of urban ecological civilization construction.

2.3.4 *Environmental Protection Path: Environmental Sustainability for Environment-Friendly City*

The environmental protection path for urbanization requires actively protecting the environment, maximally minimizing environmental pollution, and constructing environment-friendly cities and national environmental protection model city.

Environment-friendly city is the result of an urbanization mode that is guided by the principles of sustainable development. Environmental-friendly cities will rationally allocate it resources, equally meet, and respect the developmental and environmental needs of future generations. In such cities, they will not focus on just promoting prosperity of the city in the short term with "predatory" approaches because of the immediate benefits. The development of such cities will not undermine regional ecological environment, and will ensure urban health, coordination, and sustainable development. Environment-friendly city is a model of urban development that is within the regional ecological, water, and resource carrying capacity. Environment-friendly urbanization includes clean urbanization, reduced emission urbanization reduction and recycling urbanization, etc.

It is realized that cities are where serious environmental pollution concentrates, and hence the foci for environmental treatment and remediation. Healthy urbanization must be environmentally sustainable development. A sustainable city is one that the social, economic, and material development achievements can be maintained in the long run. Its development has a lasting supply of natural resources, and is able to maintain lasting security, to avoid potential environmental hazards that threaten development results. Since cities are where the serious environmental pollution is concentrated, environmental pollution control should begin in the cities. Therefore, the healthy development of urbanization must be based on the carrying capacity of resources and the environment, and be environmentally friendly. To promote such New Urbanization principles, first, we must change the high energy, noncyclic operation mechanism of today's cities, and improve the efficiency of all resources and human capitals so that materials are best used and talents are best allocated. Specifically, materials and energy shall be used at multi-levels, and waste will be recycled and new materials regenerated, so that urbanization will become material and energy recycling and efficient process. Second, the city's economic operation shall achieve the goal of high-yield, low-emission (individual industries and enterprises can achieve "zero emissions"). To do so, at the macro level, a reasonable industrial structure that focuses on the development of resources and energy-saving production methods, the formation of the efficient operation of the production, and control systems is a must. At the micro level, we need to actively develop production techniques that are conducive to healthy environment, to design

more durable and repairable products, and to minimize waste and expand recycling and reusing of materials to build clean and reduced emission-reduced cities.

2.3.5 *Resource-Saving Path: Resource Sustainability for Resource-Saving City*

The resources saving path for urbanization require promoting sustainable resources usage. In particular, the task is to build water-saving, energy-efficient, land, and materials-saving cities.

From the point of view of resources supply security, land is the main carrier; water is the lifeblood, and energy is a primary "power" of the New Urbanization. Land, water, energy, and other resources are important safeguards for urban and regional sustainable development. Lessons learned from other nations' experiences indicate that in the rapid development period of industrialization and urbanization, arable lands were losing the fastest. This is understandable since industrialization and urbanization require large amount of lands that were often easily available from converting the arable lands. With the further development of urbanization and industrialization, and increased consumption after income growth, the demand for land resources and energy resources will increase rapidly even further. Urban development will inevitably face greater pressure on resources and the environment. For this reason, sustainable urban development must take the path of intensive use of resources, centralized urban layout, and compact development. The patterns of the New Urbanization shall focus on prioritizing conservation pattern and environmental protection. We must implement water-saving, land-saving urbanization, material-saving, and energy-efficient and saving urbanization. In particular:

Water-saving urbanization is urbanization considering regional water carrying capacity. It mainly focuses on limiting the development scale, implementing and popularizing water-saving technology, building a water-saving system of industrial structure, and determining the development scales for large, medium, and small cities. The goals are to build an urban system whose water demand and foreseeable increases are within the regional water carrying capacity. This is to ensure that urban development is coordinated with population, resources, and environment carrying capacity. City sizes and socioeconomic development level are determined according to available water under the current technology. The general principle is that ecological water demand is the highest priority, and then city sizes, land-use scale, population size, production capability, and urbanization speed will all be determined by available water.

Land-saving urbanization indicates an intensive land-use mode for urbanization. Land-use for urban development shall follow the principles of promoting industrial clusters, centralized distribution, and intensive land development. Instead of the past extensive land-use, urban sprawl mode of development, the New Urbanization

intends to tap the full potential of existing urban land, determine reasonable amount of land for urban development, and increase output efficiency per unit of land.

Material-saving urbanization refers to save and use a variety of materials, employ available technology to reduce the consumption of energy and raw resources in the process of urbanization. The goals are to ensure sustainable and efficient use of various raw materials to build material-saying cities and society.

Energy-saving urbanization refers to efficient use of energy during urbanization. Maximizing energy savings shall be promoted and enforced in all energy consuming city activities, including the urban architectural environment, lighting and security control, high-speed data networks and local emergency backup generators, etc. The goals are doing everything possible to reduce all aspects of energy consumption, to reduce energy consumption per unit of output, and build energy-saving and energy-efficient urban society.

2.3.6 *Creative Path: Science and Technology Sustainability for Creative City*

Implementing innovation-driven development strategy, promoting the sustainable development of technology, enhancing the capability of independent innovation and collaborative innovation, and building an innovative city and the state of global innovation-oriented city are the main driving forces to promote the New Urbanization, as well as the soul of healthy development of China's urbanization.

Innovative city refers to cities that are based on scientific and technological progress as the driving forces, self-innovation as the primary guidance, and innovative culture as the basis. The primary driving elements of urbanization are science and technology, knowledge, human capital, culture, institutional innovation, and the like. Innovative city is an important source for carrying out national innovation activities, and key for strengthening and building an innovation-oriented country and national innovation system. It is the core engine to accelerate the transformation of economic development modes, and strategic locations to accelerate the New Urbanization and rural construction. Building innovative city is imperative to explore the new models of urban development and promote sustainable urban development, which has important strategic position in China's economic and social development. For this reason, the following guiding documents by the Chinese Central Government, "China's Long-term Technology Development Plan (2006–2020)" (National Development Committee [2005] No. 044), "National Economic and Social Development Twelfth Five-Year Plan" "National Twelfth Five-Year Plan" for "Science and Technology Development Plan" (National Science and Development Plan [2011] No. 270), "National Development and Reform Commission on the Promotion of National Innovation-oriented City Pilot Work Notice" (Development and Reform Committee High-tech [2010] No. 30), and the National Science and Technology Ministry all have proposed building an innovative city. Moreover, even

the "Constitution of CCP" as amended in 2012 also proposed building an innovative nation, and implementing innovation-driven development strategies. At present, China has entered a crucial stage to build an innovative nation by 2020. Building innovative cities, hence, has very important practical significance to enhance our capacity for independent innovation and international competitiveness, and accelerate the process of building an innovative nation [3].

2.3.6.1 Innovative Cities: Patterns and Modes

To successfully carry out China's New Urbanization strategies, we must implement the industrial innovation led mode (including high-tech industries led and advanced manufacturing led modes), the cultural innovation led mode (including the modern culture innovation led and traditional cultural heritage guide modes, etc.), service innovation led mode (including cultural and creative industries led mode the modern service led mode, etc.), technological innovation led mode (including knowledge innovation and technological innovation led modes, etc.), institutional innovation led mode (including the market operation mechanism innovation led and the Government Management System Innovation led modes, etc.), and multi-drive linkage innovation. The implementation will use high-tech parks as carriers to modify from simple manufacturing to active creating in order to build the industry innovation city. The central business district will serve as the carrier to change businesses to be services to build service industry innovation city. The agricultural science and technology parks will serve as the carrier to modify the farm field to manor field to build modern agricultural innovation bases. The Research and Development institutions will serve as the foundation for building a scientific innovation city. The information technology will serve as a means to change the regular manufacturing to smart manufacture, to build an intelligent innovative city. Societal harmony will be the primary purpose of this collaborative innovation city. Livable environment is the goal, and developing ecological economy and low-carbon economy is the ways to build a green innovation city. Open collaboration will be the primary approach to build an internationally innovative city. The ultimate goal is to gradually build a five-level hierarchical national innovative urban space network [4], namely, the world's innovative cities, national innovation-oriented city, regional innovative city, innovative city areas, and innovative developing cities.

2.3.6.2 Transition from "Made in the Cities" to "Created in the Cities"

With the drive of urban development from factor-driven to innovation-driven, and from "Made in the Cities" to "Created in the Cities," the nature and orientation of urban development, urban development strategy, urban industrial structure, urban form, urban industrial system, and urban system also are going through profound

transformation. For instance, a comprehensive restructuring of Jiaozuo City is a successful example. Jiaozuo City used to be a mining city. Yet, by carefully implementing the strategic transformation, it changed gradually from a pure coal-centered local economy to a regional economic center. Or some would prefer that it changed from black to green. Its resource development strategy changed from focusing within the ground to on the ground. Its economy changed from the development of the mine toward the development of tourism, finishing the fundamental urban industrial restructuring. The successful implementation of the transformation of urban functions (Zhongyuan urban agglomeration modern industrial city, and an international tourist city), the city image rebuilding and reorientation certainly provide a very good example for similar cities that are in dire need of this transition. Specifically, by restructuring its economic and industrial structures, Jiaozuo's industrial structure changed fundamentally. The traditionally dominant energy, chemicals, and metallurgy industries declined in the city's GDP, of which coal dropped from 5 % in 1995 down to 2.6 % in 2008, and the electric power industry dropped from 5.7 % in 2000 down to 4.3 % in 2008. On the contrary, resource-intensive processing industries such as aluminum industry rose from 1995s 0.56 to 8.3 % in 2008. Agricultural processing industries as represented by Mengniu, Huaiyao rose from 1.5 % in 1995 to 7.2 % in 2008. New material industries as represented by automotive parts rose from 1.32 % in 1995 to 9.3 % in 2008. The proportion of the tertiary industry (mainly tourism) is now more than 30 % in the city's GDP.

2.3.7 *Intelligent Path: Knowledge Sustainability for Intelligent City*

Smart (or Intelligent) city is an advanced form of urban information that makes full use of the new generation of IT industries in the city among the next generation of innovation and knowledge-based society (sometimes refer to "innovation 2.0"). Smart city is also an innovative and sustainable urban form, which is based on new generation of IT, such as the Internet of things (IOT) and cloud computing, and applications of various methods and tools such as Wikipedia, social networks, Fab Lab, Living Lab, and comprehensive integration in urbanization. Smart city creates an "ecology-system" that facilitates innovation to achieve a comprehensive and thorough perception, to maintain ubiquitous broadband connectivity, and to encourage intelligent integrated applications and user innovation, open innovation, public innovation, and more importantly, collaborative innovation. These are all primary characteristics of sustainable innovation city mode. With the rise of the "Internet empire," the convergence of mobile technology, and the innovative process of democratization, the smart city that emerged from the wisdom legacy of the knowledge society is an advanced form of city informatization development after digital city. Being smart means the city develops based on technology

(technological smartness) and people (intelligence), with technology as the facilitator, people lead the development.

2.3.7.1 Smart City Is the Advanced Form of Informatizated Urban Development that Is Knowledge-Driven

Smart cities increase their wealth via knowledge flows, highlighting the development of knowledge-intensive industries and promoting the sustainable development of knowledge cities. Drivers of urban development shift from innovation-driven to a higher level of knowledge and intelligence-driven. Smart city uses information and communication technology (ICT) to make city life more intelligent, use of resources more efficient. Developing smart cities will result in cost and energy savings, improve service delivery and quality of life, reduce impact on the environment, and support innovation and low-carbon economy. Smart city focuses on development of highly integrated smart technology, high-end smart industry, promotion of convenient and efficient intelligence services, and people-oriented continuous innovation. Smart city is really a solid representation of smart Earth, and also the ultimate form of the city informatization development. Smart city will change our living environments, relationship among things, and people and things. It will also profoundly affect and changed the way people work, live, play, social behavior, and all other operating modes.

In IBM's white paper, "Smart Cities in China," based on a new generation of IT-based applications, the definition of the basic characteristics of the smart city is comprehensive IOT, fully integrated, innovation encouraging, and collaborative operation. Specifically, smart sensor device will integrate urban public infrastructure into the IOT, the Internet and the IOT will be completely fused, government and business will apply science and technology innovatively innovation into their daily activities based on intelligent infrastructure, and all the key systems and participants of the city will engage in harmony and efficient collaboration. "Smart City from the Innovation 2.0 Perspective" emphasizes that smart city will not only focus on IOT, cloud computing, and other new generation of information technology, but also emphasize on people-oriented, collaborative, open, and innovative user participation. In this regard, smart city is defined as the urban form that is supported by the new generation of information technology and the next generation of innovation and knowledge society (innovation 2.0). Smart city is also based on comprehensive and thorough perception, ubiquitous and broadband Internet, application of intelligent fusion, and construction of institutional environment and ecology that are conducive to innovation. Smart city aims to create people-oriented sustainable innovation characterized by user innovation, open innovation public innovation, and collaborative innovation. Development of smart city will shape urban public value, create unique value for the life of every citizen in between, and achieve sustainable development of cities and regions. Therefore, we can summarize the four main features of the smart city as follows: a comprehensive and

thorough perception, ubiquitous broadband connectivity, intelligent integration of applications, and people-centered sustainable innovation.

2.3.7.2 Developing Smart Industry Based on Information and Internet Technology, Building Smart Urban Complex

The connotation of smart sity includes smart technology, smart industry, smart services, smart management, smart humanities, and smart life. Technology innovation and application are the means and driving force for building a smart city. Smart industry is the carrier. Smart services, smart management, smart humanities, and smart life are the goals of smart city. Specifically, smart industry includes smart transportation, smart electricity grid, smart logistics, smart health care system, smart food system, smart medicine systems, smart environmental protection, smart water resource management, smart weather and climatic forecasting system, smart business, smart banking, smart government, smart home, smart communities, smart schools, smart architecture, smart buildings, smart oil field, smart agriculture, and many other aspects. Using visual collection and identification, various types of sensors, wireless location systems, radio-frequency identification (RFID), bar code recognition, visual tags, and other top technology, we are able to build intelligent vision of IOT, sense the elements of the urban complex intelligently, and automate data collection, which covers the commercial, office, residential, hotel, exhibition, restaurant, conference, entertainment and transportation, lighting, information and communications, and display of the urban complex. The collected data will be visualized and standardized, so that managers can visualize urban complex management to create a smart urban complex.

1. Building smart urban public services and management system. By strengthening employment, health care, culture, housing and other professional application system construction, increasing construction and management standardization, precision and intelligent level, effectively sharing urban public resources in the city, and actively promoting coordinated and efficient population flow, logistics, information flow, capital flow, smart city managers will be able to operate efficiently and enhance the city's public services while promoting the transformation and upgrading of urban development.
2. Construction of smart city government comprehensive management operation platform. The smart platform includes the command center, computer network room, intelligent monitoring systems, digital public library, and street network systems. Among them, the command center includes the six central systems of government intelligence, namely, public security emergency systems, public service systems social management systems, urban management systems, economic analysis systems, and public opinion analysis systems. The platform provides technical support for the scientific leadership of decision-making.
3. Construction of smart settlement services system. The smart settlement services system carries out pilot smart community research projects to fully take into

account the different needs of the public areas, business districts, and residential areas. By integrating the IOT, the Internet, mobile communications, and other information technology, and developing community-government, smart home systems, intelligent building management, smart community services, community remote monitoring, security management, smart business other intelligence office applications, the smart settlement services system will be able to enable urban residents to experience "smart development."

4. Construction of smart education and cultural services system. Through improving urban education metropolitan area network (MAN) and campus network projects, promoting intellectual development of education, focusing on building an integrated educational information network, online schools, digital courseware, teaching resource library, virtual library, integrated teaching management system, remote education system, resource sharing database, and shared application platform, we intend to build a learning society.
5. Construction of smart logistics service applications. Through embedding information technology into the integrated logistics park, promoting applications of RFID, multi-dimensional bar codes, satellite positioning, cargo tracking, e-commerce, and other IT technologies in the logistics industry, we will be able to accelerate the construction of information platform based on IOT and the fourth-party logistics. In addition, via integrating logistics resources, we will be able to achieve the integration of government services and logistics business, and promote the development of information technology, standardization, logistics companies, and smart logistics industry.
6. Construction of smart e-commerce system. Building smart city also indicates supporting enterprises through encouraging them to build their own websites or through third-party e-commerce platforms to implement e-commerce activities, such as online inquiry, online purchasing, online marketing, and online payment. In addition, the smart e-commerce system will also seek to improve service levels and actively promote the modern business services, tourism and convention industry, intermediary services, and other modern services via application of e-commerce tools and innovative services. The e-commerce system also will actively build online e-commerce platforms, encourage the development of public information service platforms that use e-commerce platforms as the aggregation points, and foster the development of e-commerce businesses. The emphasis will be on the development of comprehensive e-commerce businesses or industry e-commerce websites that integrate products, information dissemination, transaction, and payment.
7. Construction of smart health care system. The smart health care system focuses on promoting the establishment of a "digital health care" system. A smart health care system intends to establish health service network and urban community health service system, build regional health information management system as the core information platform to facilitate communication and interaction among various healthcare information systems. Hospital management will be "digitized" and electronic medical records created. The digital health care system focuses on establishing national electronic health records to build a hospital

services network. In so doing, the smart city will be able to promote remote appointment and registration, electronic billing, remote medical services, remote diagnostic systems, and other remote and digital services to enhance the health care services and health of the citizens.

8. Construction of intelligent transportation system (ITS). The ITS is an integrated system that focuses on building "digital traffic" projects through monitoring, surveillance, traffic distribution, and optimization technology. The goals of ITS are to improve public security, urban management, road, and other monitoring systems and information network systems. In so doing, we are able to build a unified intelligent urban traffic management and integrated service system that focus on traffic guidance, emergency coordination, smart travel, taxis, and buses management systems. Moreover, with ITS, we will be able to share traffic information, monitor, and manage of road traffic conditions real time for a smart traffic management.

Via the development of smart industries, we shall be able to promote the cities to the development from digital city, intelligent city, to smart city. The smart city will be comfortable, convenient, green, and harmonious location for its residents.

2.3.8 Safe Path: Societal Sustainability for Safe City

The safe path for urbanization shall be clear on the mentality that "safety is the first concern" of urban development. Urban public safety shall be given the highest priority to promote sustainable development of society, build a moderately prosperous and harmonious society and a national security city. Within a safe city, there should have no dangerous elements; the public is not threatened; production and daily life shall be accident-free, and the people shall generally have a satisfactory sense of security. The ultimate goal of ensuring the safety of the city is to build the safest cities from the outset. Via promoting sustainable urban development, minimizing security risks, and ensuring the safety factors of the city to the highest degree, the safe path of urbanization intends to achieve the strategic objectives of the healthy cities.

2.3.8.1 Safe Urbanization and Urban Public Safety

Urban safety refers to a state of dynamic stability and coordination in resource supply, environmental, economic, social, cultural, health and other aspects, and the resilience to natural disasters and social and economic anomalies or incidents. Urban safety has broad and narrow senses. The broad urban safety includes secure resource supply, safe environment, safe economic development, safe society, safe culture, and safe health, etc. Safety in these aspects has profound impact on the entire city's safety, and hence can be referred to as "macro safety." The narrow

sense of urban safety refers only to policing and crime prevention, and hence is also called the "micro safety." Urban safety within the meaning of urban planning usually refers to the broad urban safety. According to the "macro" sense of urban safety, it has two primary connotations. First includes approaches that prevent the sense of insecurity caused by disasters, including natural disasters and man-made disasters. The second is to improve supplies to reduce the sense of insecurity caused by various shortages, including water resources, land resources, energy resources, food, various productions, and subsistence shortage of supply due to inadequate supplies.

In general, urban safety has rather broad contents, including urban resources security, urban ecological security, urban economic security, urban social security, urban production security, and urban living security.

1. Urban resource security refers to the necessary resources supply and reserve that protect the city's normal production and normal life of residents, including water security, energy security, land security (arable land security), and mineral resource security. For instance, in the 656 cities in China, 75 % of them suffer water resources shortage. Among them, a quarter suffers serious water shortage, and hence are very unsafe cities. Moreover, due to the depletion of mineral resources, the so-called resource-exhausted cities also belong to the unsafe city category. For instance, Yumen city of Gansu Province prospered due to oil development, yet now degraded to a "ghost town" because of the depletion of oil resources.
2. Urban ecological security refers to the status of urban ecological environment staying in good condition, and free from damage and pollution (harm). In this state, the city's environment maintains a well-structured and sound ecology function, and is able to self-regulate and self-purify. Urban ecological environment is the fundamental material basis for human social and economic activities, and the support system for the formation and continued and sustainable development of cities; therefore, urban ecologic security is the most fundamental condition of urban safety.
3. Urban economic security refers to the fact that urban economy is able to maintain normal operation and development when subjected to a variety of external threats, such as natural disasters, inflation, financial crisis, and the cyclical economic fluctuations. With higher economic security, the city's economic development and the overall situation will not be disrupted easily, and be able to secure a favorable position and a favorable external environment in the competition both domestically and globally.
4. Urban social security refers to the organization, order and stability in city's daily operation, as well as the resilience and prevention while under the threats of internal or external disturbances (such as violence, war, floods, earthquakes, tsunamis, landslides, haze, landslides, terrorist attacks, etc.) so that they will not cause severe social unrest and even subvert.
5. Urban production security refers to the city's resilience toward incidents that are inevitable in a variety of production activities, and work-related injury. Urban

production security indicates that the incidents can be contained locally so as not to cause serious damage to urban production systems, and can be immediately processed even if the inevitable happens.

6. Urban life security refers to the city's capability to ensure food security and health security. In particular, through strengthening health legislation, oversight and enforcement of food production, and other daily necessities, the city is able to ensure that food, drinking water, and other diet-related products are safe and healthy. Moreover, strengthening animal quarantine, improving animal disease surveillance, prevention and control, quarantine, and supervision system are also important to ensure the safety of animal products, in order to fully ensure the safety of city life.

2.3.8.2 Safe Urbanization and Key Points of Urban Security and Prevention

Since urban security issues become more prominent and safety problems become more serious, we propose to work on the following five key points (aspects) in the New Urbanization paradigm to ensure urban safety:

1. A safe city must be people-oriented, focus on safety as the first priority, and emphasize on both protection and prevention equally. Urban safety issues must have the highest priority for any ensuing planning. This requires that we highlight "prevention" and "safeguard" as the two main themes in urban planning. We will then be able to compile the "urban security system planning," so that we can handle the relationship between the costs and benefits of urban security investment more appropriately to ensure safe, healthy, and sustainable development of the city.
2. A safe city will strengthen the construction of security and emergency defense system. In urban planning, the so-called "seven defense," namely, urban flood control system, antipollution system, firefighting systems, earthquake preparation system, antiterrorism system, epidemic diseases prevention system, and air defense systems, shall be well-planned and built. The goals are to build forward-looking and strategic disaster prevention system.
3. A safe city will strengthen security support system according to the city resources and environment carrying capacity. In the preparation of the master plan of the city, it is recommended to add a specific chapter devoted scientifically analyzing resources and environment carrying capacity of the city. We will then determine the reasonable capacity of the population and the economy according to the carrying capacity of the city's resources and environmental basis. In so doing, we will be able to ensure various supplies and resources are within the safety operating range.
4. A safe city will also strengthen the citizens' safety awareness. Good urban safety publicity will enable every citizen to feel the responsibility and obligation to protect the city (their city). It is imperative to strengthen education and improve

national security awareness among the mass public. Public safety knowledge courses shall be included in the curriculum as required courses of primary and secondary schools. At the neighborhood level, we need to strengthen the development of social volunteers and social assistance services team and construct residential street grassroots emergency management network.

5. A safe city will have a set of robust urban safety evaluation indicator system, and information for that system shall be kept up-to-date. The indicator system shall include scientific decision-making command system, a complete legal system of public safety, efficient crisis early warning system, reliable information and control system, and the city public security system. The urban decision-makers can use the indicator system to pinpoint unsafe points within the city and then take relevant precautions and actions.

2.4 Strategic Guidelines for China's New Urbanization Development

Urban development guidelines are a set of specific codes of conduct for the nation to achieve the goal of urban development in a certain period of time [5], and also the guiding program for sustainable and healthy urban development. Urban development at different stages requires different guidelines. As a matter of fact, the principle of stage-like urban development dictates that the guideline for urban development is dynamic and changes with different stages of the city [6, 7]. China's urbanization has entered a stage of rapid development, while in the meantime at a critical transition period. Specifically, China's urbanization (measured by statistical yearbooks) has passed the level of 50 % (half of the residents now reside in cities). The urban disease issues now reach a level that improving urbanization quality is the only way for healthy and sustainable future of cities. Accelerating urbanization also faces severe resources and environmental restriction. This is the key period in which the coordinated development of urbanization, industrialization, modernization of agriculture, and information technology is of critical importance. The CCP's 18th Plenary Report and the Central Economic Work Conference have proposed to actively and steadily promote urbanization, and strive to improve the quality of urbanization, embedding the concept of ecological principle and civilization and into the entire process of urbanization, focusing on New Urbanization that is intensive, intelligent, green, low-carbon [8]. Under the new historical conditions, urbanization has become a historical task for China's modernization and the greatest potential for expansion of domestic demand. In some cases, promoting urbanization even became the country's "magic bullet" and "master key" for solving a series of problems in economic and social development. However, it is worth noting that the rapid urbanization process requires a scientific approach to guide the overall urban development. Since 1980, China has implemented the urbanization guidelines that "strictly control the development of large and megacities, and rationally promote the development of

medium-sized cities and small cities, and actively develop small towns." This is the first time that China legalized the guidelines of urbanization, and the guidelines are still in effect. After 30 years of implementation, the guidelines prove to have played an important role in guiding the acceleration of the healthy development of China's urbanization, the formation of the overall pattern of urbanization, and the promotion of China's urbanization and urban development [9]. However, these guidelines for urban development have exposed a series of issues that need to be addressed under the new circumstances. We need to propose new guidelines that are in line with the reality of the current development of urbanization and its future goals, so that we can guide the formation of a new pattern of urban development, and ensure the future of China takes a resource-saving and environment-friendly new urbanization development path.

2.4.1 The Evolving Course of China's Urbanization Guidelines

From the establishment of the People's Republic of China (1949) to now, China has experienced eleven "Five-Year Plans." The "Five-Year Plans" are critical governmental guiding master plans for the entire nation's societal, economic, urban, rural development, and many other aspects. For each "Five-Year Plan," the central government establishes national-level policies to directly or indirectly influence the development of China's urbanization [10]. It is under the guidance of these national macro-control policies that China's urbanization has made remarkable achievements as of today. Yet as we know that there were always different characteristics of urbanization policies and developing paths at different times, urban development was very keen to certain conditions and political history and the economic environment, which reflects the complex nature of urban development. Specifically, for the 58 years from 1953 to 2010, China has experienced project-driven "free" urbanization in the first "Five-Year Plan," the chaotic urbanization period in the second "Five-Year Plan," the turbulent yet depression and stagnant urbanization in the third and fourth "Five-Year Plan," active urbanization during the recovery and reform period of the fifth "Five-Year Plan," urbanization that controls the large and megacities, but promotes medium and small-sized cities in the sixth "Five-Year Plan," the so-called diversified urbanization in which all size of cities were encouraged to develop in the seventh and eighth "Five-Year Plan," healthy urbanization in the ninth "Five-Year Plan," coordinated urbanization in the tenth "Five-Year Plan," harmonious urbanization with Chinese characteristics in the eleventh "Five-Year Plan," and currently promoting active, steady, and healthy urbanization (Table 2.2) during the twelfth "Five-Year Plan." The urban development policies have been adjusted several times along the way to ensure the overall development of urbanization in China moves toward diversified, coordinated, and healthy development [11].

Table 2.2 The changes of China's overall guidelines of urbanization and their effects

Development periods	Years	Main guidelines and policies	Effects
First "Five-Year Plan"	1953–1957	Project-driven, "free" urbanization, steady progress	Project-driven free urbanization
Second "Five-Year Plan"	1958–1962	Adjustment and consolidation, enrichment and promotion	Chaotic urbanization
Third "Five-Year Plan"	1966–1975	Controlling large cities, encouraging small cities	Turbulent yet stagnant urbanization
Fourth "Five-Year Plan"			
Fifth "Five-Year Plan"	1976–1980	Strictly controlling large and megacities, properly promote medium- and small-sized cities	Active urbanization
Sixth "Five-Year Plan"	1981–1985	Controlling large cities, encouraging small cities and townships	Rural urbanization
Seventh "Five-Year Plan"	1986–1990	Strictly controlling large and megacities, properly promote medium- and small-sized cities	Diversified urbanization with coordinated development
Eighth "Five-Year Plan"	1991–1995	Building development zones to drive large cities' development	Diversified urbanization with large cities dominated
Ninth "Five-Year Plan"	1996–2000	Strictly controlling the development of large cities, encouraging the development of small cities and townships	Healthy urbanization with coordinated development
Tenth "Five-Year Plan"	2001–2005	Diversified and coordinated development of large, medium, and small cities and townships	Coordinated urbanization
Eleventh "Five-Year Plan"	2006–2010	Focus on urban agglomerations, healthy and coordinated development of large, medium, and small cities and townships	Harmonious urbanization with Chinese characteristics
Twelfth "Five-Year Plan"	2011–2015	Coordinated development of urban agglomerations and large-, medium-, and small-sized cities and towns	Active, steady and healthy urbanization

2.4.1.1 The Project-Driven, Free Migration Urbanization in the First "Five-Year Plan"

From 1953 to 1957, the first "Five-Year Plan," urban development in China mainly concentrated on the key industrial cities where the 156 key projects were located. There was virtually no rural–urban migration (and vice versus) restrictions. Cities opened their doors to the countryside to quickly accumulate necessary labor forces. Then the urban development guidelines are "project-driven, steady progress, and freedom of movement." After the issuance of the first constitution of PRC in 1954, town was clearly defined as an administrative unit that was at the same level as townships or ethnic townships, and was under the jurisdiction of counties. After June 1955, the State Council promulgated the first municipal building regulations, "Decisions of the State Council on Establishment of the Town," and in December the same year promulgated the "Decision the Standards on Urban-Rural Division," which gradually put China's urbanization into the standardized track, greatly promoted the process of urbanization. By 1957, the number of cities increased from 135 in 1949 to 176 [12].

2.4.1.2 The Urbanization Guidelines of "Adjustment and Consolidation, Enrichment and Promotion" in the Second "Five-Year Plan"

In the second "Five-Year Plan" from 1958 to 1962, due to the impacts of "Great Leap Forward" "anti-rightist" campaign and the 3 years of natural disasters, in 1961 the country began to implement the "adjustment, consolidation, enrichment and improvement" guidelines for urban development. During this period, the urbanization guidelines encourage urban labors to return to rural areas and participate in the labor force in agricultural production, which led to sharp drop of urban population [13]. According to statistics, from 1961 to the end of 1963, a total of 18.87 million urban workers returned to the rural areas, which reduced the urban population of approximately 30 million people. Urbanization level (as measured by the percentage of urban population) dropped to 16.8 %. In December 1963, the central government also issued a "Directives on the Adjustment of Township Establishment and Reduction of Outskirt Sizes," which called for repeal of cities that were not qualified for being a full-fledged city, reduction of the existing cities' outskirts, and raising the standards for establishing townships. The Directives indicated that places with more than three thousand people and 70 % nonagriculture population qualify for township status. Places with over 100,000 people and 80 % nonagricultural population can be established as a city. The Directives also set the provisions that city and town population (the urban population as recorded in the annual statistic yearbooks) include only nonagricultural population living in the cities and towns, which narrows the scope of the urban population statistics. According to statistics, by the end of 1964, China had withdrawn 39 cities, so that the number of cities reduced to 169. By the end of 1965, a total of 1527 established

towns were revoked, which reduced the number of towns to 2902. Consequently, the national urbanization level stayed at 18 %.

2.4.1.3 The Urbanization Guidelines of "Controlling Large Cities, Encouraging Small Cities" in the Third and Fourth "Five-Year Plan"

During the third and fourth "Five-Year Plan" (1966–1975), China experienced the unprecedented "Cultural Revolution," which brought enormous turmoil to the nation's societal, economic, cultural, and demographic aspects. The general guidelines for that period were "preparation for war and famine," "Three Front Movement," and "no large cities." During the decade, 1.7 million so-called "educated youth" (Zhiqing) started the famous "Up to the Mountains and Down to the Countryside Movement," and over 10 million governmental officials were sent down to the rural areas to experience agricultural work. In this period, enormous amount of human capital and resources were withdrawn from the cities and invested to the "Three Front." There was almost no recognizable investment in any cities. Since the central government follows a strict guideline for urbanization that China shall "control the size of large cities and encourage small cities," population mobility was strictly regulated. During this decade, China's urbanization level stayed at 17 %, reflecting a unique urbanization process during the chaotic, depressive, and stagnant period in China's history.

2.4.1.4 The Urbanization Guidelines of "Controlling Large Cities, Encouraging Small Cities and Townships" in the Fifth and Sixth "Five-Year Plan"

During the fifth "Five-Year Plan" (1976–1980), urban development in China experienced serious difficulties. The national economy was severely imbalanced with artificially heightened industrial outputs. The population reached its peak of fertility. There was enormous employment pressure for the returned educated youth from the "Up to the Mountains and Down to the Countryside Movement." Urban infrastructure was way underdeveloped, especially in large cities since they experienced the most population inflow. To deal with this situation, the Third National Urban Working Conference in 1978 established the guidelines for urbanization to "control the size of large cities, but encourage the development of small cities and towns." From 1978 to 1980, the number of cities grew from 190 to 223. The level of urbanization correspondingly increased from 17.92 to 19.39 %. In 1980 the State Council approved the "Outline for National Urban Planning Working Conference," which proposed but not implemented the urbanization guidelines to "control the scale of large cities, rationally develop medium-sized cities, and actively develop small cities."

In the sixth "Five-Year Plan" from 1981 to 1985, the Third Plenary Session of the CCP's Eleventh National Conference adopted the "CCP Central Committee's Decisions on Economic Reform." The focus of reform started to shift from the countryside to the cities. In October 1984, the Ministry of Civil Affairs relaxed standards for establishing townships. As a result, the number of towns increased rapidly thereafter. On October 13, 1984, the State Council issued a "Notice regarding some Issues of Farmers Registering in the Townships." In the Notice, it was mentioned that "farmers and their family members who apply to work, do business, engage in the service industries, have fixed residence in the township, have certain management ability and serve as long-term workers in the township enterprises shall be allowed to have the permanent residence in the township. These people will be recorded as nonagricultural population." The establishment of this new household registration management policies and municipal standards has greatly promoted the development of China's cities and towns, especially small towns. The number of towns increased rapidly from 2678 in 1981 to 9140 in 1985. The number of cities increased from 226 to 324 during the same period. Consequently, China's urbanization level increased from 20.61 % in 1981 to 23.71 % in 1985.

2.4.1.5 The Urbanization Guidelines of "Strictly Controlling Large Cities, Encouraging Medium-Sized and Small Cities" in the Seventh "Five-Year Plan"

During the seventh "Five-Year Plan" (1986–1990), the central government explicitly proposed the urbanization guidelines that we need to "firmly prevent excessive expansion of cities and focus on the development of small cities and towns" [14]. "The People's Republic of China Urban Planning Law" that was in effect in April 1, 1990 also made it very clear that China's urbanization shall "strictly control the size of large cities, rationally develop medium-sized cities and small cities."

2.4.1.6 The Urbanization Guidelines of "Development Zone-Driven Development of Large Cities" in the Eighth "Five-Year Plan"

During the implementation of the eighth "Five-Year Plan," China has entered the stage that focused primarily on building development zones to drive large cities' development, or "development zone-driven development of large cities." Urbanization during this period was characterized as large cities expand rapidly. The number of cities increased from 479 in 1991 to 640 in 1995. In the boom of building development zones and promoting urban real estate market, China urbanized fairly quickly. Urbanization level increase from 26.41 % in 1990 to 29.04 % in 1995.

2.4.1.7 The Urbanization Guidelines of "Strictly Controlling the Development of Large Cities, Encouraging the Development of Small Cities and Townships" in the Ninth "Five-Year Plan"

From 1996 to 2000, the ninth "Five-Year Plan" was implemented. The State Council approved on June 10, 1997 "Urban Household Registration System Reform Plan" and "Opinions on Improving the Rural Household Registration System" proposed by the Ministry of Public Safety. The documents specifically indicated that the local authorities shall "allow farmers who have already been employed in small towns, and meet certain conditions to register the permanent residence in small towns." In so doing, we will be able to "promote rural surplus labor to orderly transfer to nearby small towns, which will eventually promote the comprehensive development of small towns and rural areas." In July, 2000, CPC and the State Council promulgated the "CPC Central Committee on the Opinions of Promoting the Healthy Development of Small Towns," which again emphasized the urbanization guidelines in China shall strictly control the development of large cities, but actively encourage the development of medium-sized and small cities and towns. Under such urbanization guidelines, the number of small towns in China had increased explosively from 17,532 in 1995 to 20,312 in 2000. The number of cities, however, remained relatively stable, changed from 666 in 1996 to 668 in 1997, and then reduced to 663 in 2000. Urbanization level changed from 29.04 % in 1995 to 36.22 % in 2000. China also stepped into the mid-stage of urbanization.

2.4.1.8 The Urbanization Guidelines of "Diversified and Coordinated Development of Large, Medium, Small Cities and Townships" in the Tenth "Five-Year Plan"

In the tenth "Five-Year Plan" (2001–2005), the "Tenth Five-Year Plan for National Economic and Social Development" had for the first time promoted urbanization development to the level of national development strategies. Diversified urbanization was proposed for the first time. The "Plan" clearly stated that "promoting urbanization must follow the objective laws and regulations of urbanization. The level of urbanization must coordinate with the level of economic development and degree of market development. Urbanization shall be ready to adapt, move forward step by step, and go in line with China's contemporary national conditions. The ultimate goals were to coordinate the development among large, medium and small cities and small towns for diverse urbanization development, and gradually form a rational urban system [15]." Specifically, we need to focus on developing small towns with great potential, actively promoting small cities, and improving the function of the regional central cities, encouraging large cities to play the leading role, gradually guiding the orderly development of dense urban areas. During this period, urbanization level increased rapidly from 36.22 % in 2000 to 42.99 % in 2005.

2.4.1.9 The Urbanization Guidelines of "Healthy and Coordinated Development of Large, Medium, Small Cities and Townships" in the Eleventh "Five-Year Plan"

In October 11, 2005, the Communist Party of China (CPC)'s Sixteenth Central Committee adopted the "Suggestions on the 11th Five-Year Plan of CPC Central Committee on National Economic and Social Development" during the fifth Plenary Session. The suggestions clearly stated that current guidelines for developing China's cities need to "promote the healthy development of urbanization, insist coordinated development of cities and towns at all levels and scales, and improve the overall carrying capacity of cities and towns. To achieve these goals, we need to follow the fundamental principles of gradual urbanization, land conservation, intensive development, and rational distribution, to actively and steadily promote urbanization" [16]. On October 15, 2007, the CPC's "17th Congress Report" once again made it very clear that "the urbanization with Chinese characteristics must follow the principles of coordinated urban and rural development, rational distribution, land conservation, complete function, and large city leading smaller ones. In so doing, it is possible to promote the coordinated development among large, medium and small-sized cities and towns. The ultimate goals are to enhance the overall carrying capacity, relying on the foundation of megacities to create urban agglomerations that can benefit larger areas, and cultivate new economic growth pole*."

2.4.1.10 The Urbanization Guidelines of "Coordinated Development of Urban Agglomerations and Large, Medium and Small-Sized Cities and Towns" During the Twelfth "Five-Year Plan"

Following the successful implementation of urbanization guidelines in the previous "Five-Year Plan," the Outline of the Twelfth Five-Year Plan of the PCR's National Socioeconomic Development specifically declares that the New Urbanization shall follow the ground Laws principles of urbanization, namely, principles of coordinated planning, rational distribution, complete function, and large city leading smaller ones. Under the guideline and principles, the New Urbanization will focus on the establishment of radiating urban agglomerations that is based on large cities, but focused on medium- and small-sized cities. Urban agglomeration will be ultimate spatial organization for coordinated development among large, medium, and small cities and towns. There will be five axes, with the Eurasian Land Bridge and Yangtze River as the horizontal axes, and the coastal China, Harbin–Beijing–Guangzhou railway, Baotou–Kunming railway as the vertical axes, on which a few major urban agglomerations will be established and other cities and towns will form a radiating, relatively complete urbanization spatial network pattern. The strategy is to actively and steadily promote urbanization. Urban agglomerations in eastern China shall be oriented for global competition; while in western China, policies will

be focused on establishing urban agglomerations that serve the vast inland regions. Within each urban agglomeration, it is critical to follow scientific principles to plan and assign different industries and urban functions to different cities based on local conditions, historical development trends, and current infrastructure status. With scientific planning and resources allocation, we will be able to mitigate the pressure on the central districts of large cities, while in the meantime strengthen the industrial functions for medium- and small-sized cities, and improve the public services and residential functions for small cities and towns. The structure will enable the integrated and networked infrastructure development for large, medium, and small cities and towns. Specifically, the imminent tasks are to actively exploit the existing development potential for small and medium cities. Priority shall be given to medium- and small-sized cities with obvious advantages, strong resources base, and environment carrying capacity. In addition, we need to pay extra attention to the development of small towns, and gradually develop promising town centers in eastern China, county centers in central and western regions, and major border crossing towns into medium and small cities*.

From the above narration, during the past half a century, China's general urbanization guidelines experienced several adjustments. The general trend of China's urbanization guidelines is toward healthier direction. In the meantime, the current urbanization guidelines still exhibit outdated limitations compared to the principles of New Urbanization.

2.4.2 Weakness and Limitation of Current Urbanization Guidelines

2.4.2.1 The Current Urbanization Guidelines Are not Compatible with China's Urban Development Reality

The vast majority of the existing prefecture-level cities in China are large cities (or at least will become large cities in their five-year plans) with urban resident population of 500,000 people. Many county-level cities have also reached the scale of large cities population wise. If the guidelines of strictly controlling the development of large cities continue to be implemented, it will not be conducive to the formation and development of new urban development pattern of all prefecture-level cities, and will also hinder the implementation of New Urbanization strategies. As a matter of fact, although the State has proposed to strictly control the development of large cities for a long time, the effects are rather limited. Based on the statistics from the Sixth Census data, the total number of cities of more than 500,000 people has seen a net increase of 183, from 59 in 1990 to 242 in 2010. Their proportion of the total number of cities increased from 12.63 to 36.83 %. In the big cities, ultra-megacities where the urban population is over 10 million in the urban center emerged from scratch, a net increase of 6. They are Shanghai, Beijing, Chongqing, Tianjin,

Guangzhou, and Shenzhen. Megacities with 5–10 million people increased from 2 in 1990 to 10 in 2010. They are Wuhan, Dongguan, Chengdu, Foshan, Nanjing, Xi'an, Hangzhou, Shenyang, Harbin, and Shantou. Big cities with 2–5 million people increased from 7 in 1990 to 37 in 2010. They are Jinan, Zhengzhou, Dalian, Suzhou (Soochow), Changchun, Qingdao, Kunming, Xiamen, Ningbo, Nanning, Taiyuan, Hefei, Changzhou, Tangshan, Zhongshan, Changsha, Xuzhou, Wenzhou, Guiyang, Urumqi, Wuxi, Zibo, Fuzhou (Fujian), Shijiazhuang, Huai'an, Lanzhou, Linyi, Nanchang, Huizhou (Guangdong), Yantai, Yangzhou, WulanchabuUlaan Chab, Nantong, Haikou, Weifang, Zaozhuang, and Xiangyang [17–21]. Large cities with 1–2 million people increased from 22 in 1990 to 83 in 2010. Large cities with 500,000–1 million people increased from 28 in 1990 to 106 in 2010 (Tables 2.3 and 2.4).

From the analysis of contributions from different cities to China's urbanization, we can see that contributions from cities with populations over 500,000 increased from 27.01 % in 1990 to 46.09 % in 2010. The contribution of medium-sized cities increased from 12.07 % in 1990 to 13.85 % in 2010. The contribution of small cities dropped from 10.72 % in 1990 down to 3.63 % in 2010. The contribution of small towns dropped from 50.2 % from 1990 down to 36.44 % 2010 (as shown in Tables 2.5 and 2.6; Fig. 2.3). In a nutshell, the contribution of large- and medium-sized cities to China's urbanization over the past 20 years has increased from 39.08 % in 1990 to 59.94 % in 2010. In the meantime, the contribution of small cities and towns to urbanization has plummeted from 60.92 % in 1990 to 40.07 % in 2010. Apparently, small cities and town's contributions to China's urbanization do not match the policy emphasis in the current urbanization guidelines, leading to a series of urban disease problems. If the existing urban development guidelines are to be continued, it will not help promote the health of China's urbanization and nor is it conducive to achieve the goals of building a moderately prosperous society.

2.4.2.2 Urban Agglomeration Is not Explicitly Defined or Emphasized in Current Urbanization Guidelines

The existing urban development policy was proposed around the 1980s, when China's urban agglomerations were still in their infancy. After nearly 30 years of development, China's urban agglomerations have emerged to be the nation's key and priority development zones. Not only did they become the nation's dominant economic development strategic areas, but also for 10 consecutive years from 2005 to 2015 (two consecutive five-year plans) will they be the main spatial form to accelerate China's urbanization, dominating the overall pattern of urbanization in both today and in the future [22]. The existing urban development guidelines, however, limited by the Chinese urbanization development stage and history, do not integrate the development of urban agglomerations into the general urbanization development strategies.

Table 2.3 Change of the numbers of various scale cities in China

City size	Criteria for classification/10,000 people	1990	1995	2000	2005	2010	
						Statistics	Sixth census data
Large cities	≥1000	0	0	0	1	3	6
	500–1000	2	2	2	3	8	10
	200–500	7	9	11	17	33	37
	100–200	22	21	27	32	80	83
	50–100	28	43	53	78	106	106
Medium-size cities	20–50	117	192	218	243	265	253
Small cites	<20	291	373	352	287	162	162
Total of cites	≥20	467	640	663	661	657	657
Total of cites and townships	–	12,084	17,532	20,312	19,522	19,410	19,683

Note limited by statistics, the data before 2000 is the urban nonagricultural population, after 2000, it is the municipal district population

Table 2.4 Change of the titles of various scale cities in China

City size	Criteria/10,000 people	1990	1995	2000	2005	2010	
						Statistics	Sixth census data
	≥1000	–	–	–	Shanghai, 1128	Shanghai, 1343, Beijing, 1181, Chongqing, 1426	Shanghai, 2231.54, Beijing, 1882.7, Chongqing, 1569.34, Tianjin, 1109.03, Guangzhou, 1107.07, Shenzhen, 1035.79
	500–1000	Shanghai, 750, Beijing, 577	Shanghai, 834, Beijing, 620	Shanghai, 938, Beijing, 727	Shanghai, 855, Tianjin, 532, Wuhan, 503	Tianjin, 807, Guangzhou, 660, Xi'an, 562, Nanjing, 547, Chengdu, 528, Wuhan, 518, Shenyang, 514, Shantou, 510	Wuhan, 979, Dongguan, 822, Chengdu, 768, Foshan, 719, Nanjing, 717, Xi'an, 650, Hangzhou, 624, Shenyang, 616, Harbin, 588, Shantou, 533
Large cities	200–500	Tianjin, 457, Shenyang, 360, Wuhan, 328, Guangzhou, 291, Chongqing,	Tianjin, 474, Shenyang, 379, Wuhan, 376, Guangzhou, 317, Chongqing,	Tianjin, 499, Wuhan, 441, Guangzhou, 401, Shenyang, 395, Chongqing,	Shantou, 484, Guangzhou, 482, Chongqing, 478, Dongguan, 460, Nanjing,	Shijiazhuang, 243, Tangshan, 307, Taiyuan, 285, Dalian, 303, Changchun, 363, Harbin, 473, Wuxi, 238,	Jian, 434, Zhengzhou, 425, Dalian, 410, Soochow, 407, Changchun, 391, Qingdao, 372, Kunming, 355,

(continued)

Table 2.4 (continued)

City size	Criteria/10,000 people	1990	1995	2000	2005	2010	
						Statistics	Sixth census data
		227, Harbin, 244, Nanjing, 209	275, Harbin, 252, Nanjing, 226, Xi'an, 216, Chengdu, 200	382, Harbin, 264, Nanjing, 256, Xi'an, 253, Chengdu, 228, Changchun, 218, Dalian, 208	411, Shenyang, 410, Chengdu, 388, Xi'an, 310, Harbin, 308, Jinan, 273, Qingdao, 265, Changchun, 246. Hangzhou, 246, Dalian, 241, Shijiazhuang	Xuzhou, 312, Changzhou, 227, Soochow, 241, Nantong, 212, Huai'an, 276, Hangzhou, 432, Ningbo, 222, Hefei, 214, Fuyang (Anhui), 206, Putian, 214, Nanchang, 222, Jinan, 348, Qingdao, 276, Zibo, 279, Zaozhuang, 221, Linyi, 202, Zhengzhou, 298, Xiangyang, 223, Changsha, 241, Shenzhen, 253, Foshan, 369, Nanning, 268, Guiyang, 220	Xiamen, 353, Ningbo, 349, Nanning, 343, Taiyuan, 336, Hefei, 335, Changzhou, 329, Tangshan, 319, Zhongshan, 312, Changsha, 309, Xuzhou, 305, Wenzhou, 304, Guiyang, 304, Urumqi, 304, Wuxi, 301, Zibo, 298, Fuzhou (Fujian), 292, Shijiazhuang, 286, Huai'an, 263, Lanzhou, 263, Linyi, 260, Nanchang, 236, Huizhou (Gangdong), 235, Yantai, 223, Yangzhou, 221, Wulanchabu, 214, Nantong, 209

(continued)

Table 2.4 (continued)

City size	Criteria/10,000 people	1990	1995	2000	2005	2010	
						Statistics	Sixth census data
					224, Taiyuan, 216, Wuxi, 210	Kunming, 264, Lanzhou, 210, Urumi, 233	Haikou, 205, Weifang, 204, Zaozhuang, 204, Xiangyang, 203
	100–200	Xi'an, 199, Dalian, 172, Chengdu, 171, Changchun, 168, Taiyuan, 153, Jinan, 146, Qingdao, 146, Anshan, 120, Fushun, 120, Lanzhou, 119, Zhengzhou, 116, Zibo, 114, Kunming, 113, Changsha, 111, Hangzhou, 110, Nanchang, 109, Qiqihar, 107	Changchun, 195, Dalian. 188, Taiyuan, 169, Qingdao, 166, Jinan, 164, Zibo, 140, Zhengzhou, 136, Lanzhou, 133, Anshan, 127, Kunming, 126, Fushun, 125, Changsha, 123, Shijiazhuang, 122, Hangzhou, 121, Nanchang, 119, Urumqi, 115,	Taiyuan, 185, Qingdao, 184, Jinan, 180, Zhengzhou, 160, Kunming, 150, Zibo, 148, Lanzhou, 148, Shijiazhuang, 145, Hangzhou, 144, Changsha, 144, Nanchang, 134, Urumqi, 131, Guiyang, 131, Anshan, 129, Tangshan, 126, Fushun, 125, Jilin, 124, Baotou, l13,	Tangshan, 166, Handan, 122, Datong, 111, Baotou, 113, Anshan, 129, Fushan, 127, Jilin, 126, Quiqihar, 112, Xuzhou, 150, Changzhou, 110, Soochow, 142, Huai'an, 117, Suqian, 109, Ningbo, 121, Hefei, 150, Fuzhou (Fujian), 146, Nanchang, 167, Zibo, 143, Yantai, 126, Linyi, 139, Zhengzhou, 188, Luoyang,	Handan, 148, Baoding, 106, Datong, l55, Hohhot, 120, Baotou, 142, Wuhai, 121, Anshan, 147, Fushun, 148, Jilin, 184, Qiqihar, 142, Daqing, 132, Yancheng,163, Yangzhou, 122, Zhenjiang, 104, Suqian, 160, Wenzhou, 145, Huzhou, 109, Taizhou (Zhejiang), 155, Wuhu, 108, Huainar, 181, Huaibei, 109, Suzhou, 185, Lu'an, l86,	Hohhot, 198, Baotou, 198, Jilin, 198, Putian, 195, Luoyang, 193, Taizhou (Zhejiang), 190, Nanchong, 186, Nanyang, 181, Huainan, 177, Datong, 174, Tai'an, 174, Fuyang(Anhui), 168, Bayannur, 167, Anshan, 167, Quanzhou, 166, Daqing, 165, Suzhou, 165, Lu'an, 164, Yancheng, 161, Zhanjiang, 159, Fushun, 158, Zhuhai, 156, Qiqihar, 155, Shangqiu, 154,

(continued)

Table 2.4 (continued)

City size	Criteria/10,000 people	1990	1995	2000	2005	2010	
						Statistics	Sixth census data
				Qiqihar, 112, Fuzhou (Fujian), 112, Xuzhou, 109, Hefei, 108, Handan, 105	107, Changsha, 173, Shenzhen, 182	Bozhou (Anhui), 161, Fuzhou (Fujian), 187, Xiamen, 179, Quanzhou, 103, Yichun, 105, Fuzhou (Jiangxi), 113, Yantai, 179, Weifang, 182, Jining (Shandong),112, Tai'an, 159, Rizhao, 123, Laiwu, 129, Liaocheng, 115, Heze, 140, Luoyang, 163, Pingdingshan, 103, Anyang, 109, Xinxiang, 101, Luohe, 135, Nanyang, 187, Shangqiu, 175, Xinyang, 147, Yichang, 125, Ezhou, 104, Jingzhou, 115, Hengyang, 104, Yueyang, 108	Guigang, 149, Changde, 146, Handan, 144, Baoji, 143, Suqian, 144, Liuzhou, 144, Yichang, 141, Bozhou (Anhui), 141, Luzhou (Sichuan), 137, Mianyang, 135, Heze, 134, Chifeng, 133, Jining (Shandong),132, Rizhao, 132, Wuhu, 131, Laiwu, 130, Suining, 130, Luohe,129, Huzhou, 129, Yinchu, 129, Zigong, 126, Neijiang, 125, Yiyang, 125, Yueyang, 123

(continued)

Table 2.4 (continued)

City size	Criteria/10,000 people	1990	1995	2000	2005	2010	
						Statistics	Sixth census data
		Urumqi, 105, Tangshan, 104, Jilin, L04, Guiyang, 102	Guiyang, 115, Jilin, 114, Tangshan, 112, Qiqihar, 111, Baotou, 104	Luoyang, 104, Shenzhen, 100	Jiangmen, 134, Maoming, 121, Huizhou (Guangdong), 115, Nanning, 128, Guiyang, 148, Lanzhou, 171, Kunming, 170, Urumqi, 150	Changde, 14 l, Yiyang, l33, Yongzhou, 115, Zhuhai, 103, Jiangmen, 138, Zhanjiang, 149, Maoming, 132, Dongguan, 180, Zhongshan, 148, Liuzhou, 104, Qinzhou, 135, Guigang, 188, Hezhou (Guangxi), 110, Laibin, 106, Haikou, 159, Zigong, 150, Luzhou (Sichuan), 146, Mianyang, 122, Suining, 151, Neijiang, 142, Leshan, 115, Nanchong, 193, Guang'an, 126, Bazhong, 141,	Xinyang, 123, Liaocheng, 123, Maoming, 122, Leshan, 121, Jiaxing, 120, Zhenjiang, 120, Qinzhou, l20, Xining, 119, Tianshui, 120, Jingzhou, 115, Anyang, 115, Hengyang, 113, Bazhong, 113, Huaibei, 111, Baoding, 110, Zuyi, 110, Benxi,109, Fuzhou (Jiangxi), 109, Jinhua, 108, Zhangjiakou, 106, Yulin (Guangxi), 106, Zhuzhou, 106, Lianyungang, 105, Ezhou, 105,

(continued)

Table 2.4 (continued)

City size	Criteria/10,000 people	1990	1995	2000	2005	2010	
						Statistics	Sixth census data
						Ziyang, 109, Baoji, 142, Ankang, 100, Tianshui, 128, Wuwei, 101, Xining, 114	Xinxiang, 105, Yichun, 105, Pingdingshan, 103, Qinhuangdao, 103, Jinzhou, 102, Huludao, 102, Wuwei, 101, Yongzhou, 101, Hezhou (Guangxi), 101, Dongying, 100
	50–100	28	43	53	78	106	106
Medium-size cities	20–50	117	192	218	243	265	265
Small cites	<20	291	373	352	287	162	162
Total		467	640	663	661	657	657

Note the data of 2010 is the urban nonagricultural population, the data of 2010 from the 6th National Population Census is the municipal district resident population

Table 2.5 Population change in various scale cities in China/10,000 people

City size	Criteria/10,000 people	1990	1995	2000	2005	2010
Large cities	≥1000	0	0	0	1128.37	3944.98
	500–1000	1326.34	1453.2	1665.09	1890.92	4646.11
	200–500	2117.73	2716.2	3542.36	5654.76	7895.32
	100–200	2813.9	2826.5	3349.77	4416.32	6955.39
	50–100	1899.4	2969.5	3591.35	5171.25	7426.67
Medium-size cities	20–50	3644.25	5783.7	7267.37	8505.34	9275.56
Small cites	<20	3236.18	4266.7	5309.89	5568.13	2430.12
Total of cites		15,037.8	20,015.8	24,725.83	32,335.09	42,574.15
Total urban population		30,195	35,174	45,906	56,212	66,978
Total population		114,333	121,121	126,743	130,756	134,091

Note limited by statistics, the data before 2000 is the urban nonagricultural population, after 2000, it is the municipal district population

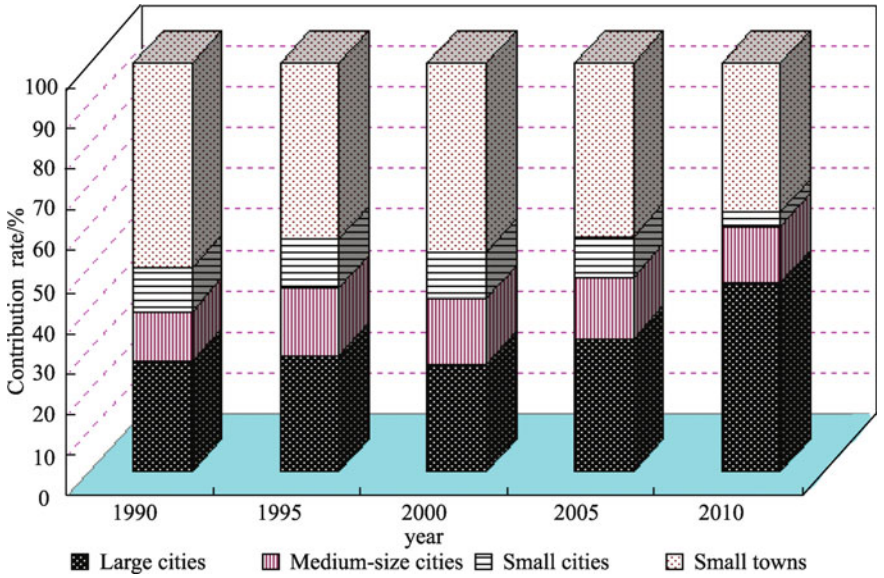

Fig. 2.3 Changes of various scale cities' contribution to China's urbanization in the past two decades

2.4.2.3 Demarcation of Large, Medium and Small Cities in the Current Urbanization Guidelines Is not Entirely Reasonable

Demarcation of various scales of cities in the current urbanization guidelines is somewhat outdated. In particular, the standard for large cities does not agree with the reality. In 1984, China attempted a new trial standard for cities and towns. The main contents of the new regulations are that the village government can upgrade to township if the nonagricultural population is more than 2000 people. If nonagricultural population is over 60,000 or more, with an annual GNP of over 200 million RMB yuan, it will be established as a city. County-level cities with nonagricultural population of 100,000 or more, nonagricultural industries account for 60 % or more of local GNP and an annual GNP over 300 million RMB yuan or more, it will be established as prefecture-level cities. In Article 4 of the "People's Republic of China Urban Planning Law" issued in 1989, it is established the State would strict control the size of large cities, focus on developing medium-sized cities and small cities. Large cities refer to nonagricultural population in the urban and near suburban areas that are over 500,000. Medium-sized cities refer to nonagricultural population between 200,000 and 500,000. Small cities refer to cities with less than 200,000 nonagriculture population [23]. But this law was repealed in January 1, 2008. The new "People's Republic of China Urban and Rural Planning Act" does not have specific numbers to define size of the city. In Article 4, however, it is

Table 2.6 Comparison of various scale cities' contribution to China's urbanization/%

City size	Criteria/10,000 people	1990	1995	2000	2005	2010
Large cities	≥1000	0	0	0	2.01	5.89
	500–1000	4.39	4.13	3.63	3.36	6.94
	200–500	7.01	7.72	7.72	10.06	11.79
	100–200	9.32	8.04	7.3	7.86	10.38
	50–100	6.29	8.44	7.82	9.2	11.09
Medium-size cities	20–50	12.07	16.44	15.83	15.13	13.85
Small cites	<20	10.72	12.13	11.57	9.91	3.63
Townships	–	50.2	43.09	46.14	42.48	36.44
Total		100	100	100	100	100
National urbanization level		26.4	29.1	36.2	42.9	49.9

mentioned that "local governments at the county or above level shall reasonably determine the overall development scale, steps and construction standards of cities and towns according to local economic and social development in the master urban and town planning" [24]. In the absence of clear rules, urban development tends to expand the spatial scale endlessly. At present, since urban population is no longer calculate based on the nonagricultural population, on the permanent resident population, urbanization level, urban scale, and classification criteria/standards are fairly inconsistent due to different calculation methods. This is especially true for cities that have population over 1 million, 5 million, or even 10 million people. The standards for urban infrastructure and public service facilities in these cities are still treated as being equivalent to that of a large city, which was initially defined as cities with over 500,000 people. This is apparently unreasonable, and is also one of the main reasons leading to a series of urban disease in big and megacities.

2.4.2.4 The Urban Hierarchical Structure Under the Current Urbanization Guidelines Is Not Compatible with the Administrative Division

The size of a city directly affects the overall urban planning, sizes of population and construction land, and the scale and standard configuration of infrastructure and public service facilities. Reasonable size of a city is an important prerequisite for urban construction, and improving the operating efficiency of the city. Different cities with different administrative levels have different investment intensity and administrative privileges. For over 30 years, the total number of all types of city increased from 223 in 1980 to 656 in 2011, including municipalities from three to four, sub-provincial cities from zero to 15, prefecture-level cities from 107 to 268, and county-level cities from 113 to 369 [25] (Table 2.7).

Table 2.7 China's urban administrative division changes (counts)

City size	1980	1985	1990	1995	2000	2005	2010	2011
Municipalities	3	3	3	3	4	4	4	4
Sub-provincial cities	–	–	–	16	15	15	15	15
Prefecture-level cities	107	162	185	194	244	268	268	268
County-level cities	113	159	279	427	400	374	370	369
Total	223	324	467	640	663	661	657	656

By simply comparing the numbers, we can see that in 2010, the ratio between sub-provincial level cities, prefecture-level cities, and county-level cities in China was 2.89 %:40.79 %:56.25 %. In the same year the ratio between large cities, medium cities, and small cities was 35.01 %:40.33 %:24.66 %. Apparently, there is a clear lack of coordination between these two ratios. Due to difficulty to adjust administrative divisions, there are towns in eastern China with permanent population over 200,000–500,000 people, but still established as towns from an administrative perspective and the standards for infrastructure and public service facilities are set at town level. This apparently causes those towns to be overburdened and overcrowded.

2.4.3 Strategic Guidelines for the New Urbanization

Article 23 of the "CPC Central Committee Decisions on Major Issues in Deepening Reform" announced in the Third Plenary Session of the Party's Eighteenth Conference clearly stated that one of the primary missions in the New Urbanization is to implement innovative population management system, accelerate the reform of the household registration system, fully relax registration restrictions for towns and small cities, gradually relax registration restrictions for medium-sized cities, reasonably determine registration conditions for large cities, but still strictly control urban population in big and megacities. In addition, it is imperative to establish a unified construction land market, improve the secondary market for land lease, transfer, and mortgage. This expression sets the policy foundation for the adjustment to China's New Urbanization.

2.4.3.1 Increase the Urban Scale Classification Standards Appropriately, Establish Six Different Scales

Based on the fact that China's overall urban development scale is too large, it is recommended to increase the size criteria for various cities based on national resources and environment carrying capacity and urbanization conditions. The basis

for classifying different urban scales shall be based on urban resident population that was served by urban infrastructure and public service facilities. In particular, we suggest dividing Chinese cities into six different sizes, namely,

Supercities: Urban resident population size ≥10 million;
Megacities: the urban resident population is between 5 million and 10 million people;
Large cities: the urban resident population is between 1 million and 5 million people;
Medium-sized cities: the urban resident population is between 500,000 and 1 million people;
Small cities: the urban resident population is between 100,000 and 500,000 people;
Small towns: township resident population size <100,000.

The standards for urban infrastructure and public service facilities in various cities shall be configured based on the population sizes. Specifically, cities that are classified based on population sizes shall not share the standards nor have to fit with municipalities, prefecture-level cities, county-level cities, and administrative-townships. In other words, cities and county-level cities can become large cities and megacities, towns can also be medium-sized cities or small cities, and even large cities if residential population size reaches the standard. On the contrary, the provincial capital cities do not necessarily have to be megacities or supercities. Prefecture-level cities do not necessarily have to be large cities or megacities; they may be small cities or medium-sized cities.

With these criteria and standards in mind, it is suggested that the building departments shall determine the land-use and infrastructure configure standards based on the actual size of the cities, instead of the administrative levels.

2.4.3.2 Promote the New Urbanization Development Guidelines

Using the six city classes as outlined above, and the proposal of promoting healthy urbanization in the Eleventh and Twelfth "Five-Year Plans" and considering the development of both urban agglomerations and small cities [26], we propose the guidelines for New Urbanization as "to strictly control the two "Big ones" (mega- and supercities), and encourage the two "Small ones" (small cities and towns)" promote "urban agglomeration," rationalize spatial distribution, and balance development among various cities. In particular, the primary goals are to guide the development of urban agglomerations, strictly control the mega- and supercities, rationally develop large cities, encourage the development of medium-sized cities, and actively develop small cities and small towns. Ultimately, we intend to build a spatial urban pattern with coordinated development among urban agglomerations and large, medium, and small cities and small towns. Urban agglomerations will continue to be the main space form that will promote actively and steadily the development of China's urbanization. Small towns will serve as the primary means

to promote urban and rural development, sustainably sustainable conversion of farmers to citizens, and gradual improvement of urbanization quality.

2.4.3.3 Adjust the Structure of Urban Systems, and Optimize the Spatial Patterns of Urbanization

With the adjustment of national urban development policies, we suggest adding four hierarchies, namely, urban agglomerations, supercities, megacities, and small towns, in the national structure of urban systems. In so doing, the national structure of urban system will have seven layers, from top to bottom: urban agglomerations–supercities–megacities–large cities–medium-sized cities–small towns. Based on the structure, the national urban system hierarchy will be national key urban agglomerations (first grade centers), national central cities (second grade centers), national regional central cities (third grade centers), regional central cities (fourth grade centers), regional subcentral cities (fifth grade centers), and national key small towns (sixth grade centers). The national urban system's functional and spatial structure shall also be adjusted based on the adjusted national urban hierarchical system [27] to continue to optimize the spatial pattern of urbanization development in China.

2.4.3.4 Dialectically Analyze the Pros and Cons of Migrant Workers in the Cities and College Graduates to the Countryside, Improve Urbanization Development Quality

There are views that the urbanization policies shall allow most (if not all) migrant workers to stay as urban citizens. Such views, however, could be rather biased and one-sided. First, it is neither wise nor possible to allow all 260 million migrant workers to move to and stay in the city. Many of these migrant workers do not necessarily want to permanently reside in the city. Working in the cities is but one way (lucrative and with more opportunities, that is for sure) to earn money. Their ultimate goals are to build a house in their hometown. These migrant workers just want to continue to do migrant work. Second, being a migrant worker can purchase houses in the cities, yet in the meantime, they can retain their homestead lands in rural areas. Third, the majority of migrant workers have rather limited educational level. According to the National Bureau of Statistics, among the 260 million migrant workers, only 25 % received nonagricultural vocational and technical training, more than 60 % barely graduated from middle school* (Southern People Weekly, 2013, 34, 21). If we force these migrant workers to rush into the city, there will be a de facto decrease of China's urbanization quality, which is directly against the current urbanization policy to treat improving the quality of development as the top priority. Fourth, there were suggestions that cities shall lower the quota of college graduates to ensure that migrant workers can stay in cities. Such suggestions are most likely going to work against improving urbanization quality.

In addition, other than suggestions that allow migrant workers to become urban citizens, many have viewed allowing college graduates to work in the rural areas as local chief executives being a successful approach to control the sizes of mega- and supercities. Such views, unfortunately, are rather groundless. In municipalities and a few mega- and supercities, such practices are relatively successful. In other areas, however, they are basically unsuccessful. In a nutshell, allowing college graduates to work as local chief executives is really a waste of China's higher education resources. Although at least one-third of college graduates worked as local chief executives, while in fact the real time they spent in their allocated villages was less than 2 months a year. Therefore, from the point of view of improving China's urbanization quality, we recommend a modest reduction of migrant workers to the cities and college graduates to the villages.

2.4.3.5 Legalize the Guidelines of New Urbanization Development to Urban and Rural Planning Act

China's urbanization process is now facing increasingly severe pressure on resources and the environment. The future urbanization process must treat enhancing the quality of urbanization as the topmost priority [28]. The most important tasks are to relieve and cure urban disease. To do so, it requires rigorous and scientific attitude to study the theory, practice, and laws of urban development, and formulate corresponding scientific development policies and guidelines for urban development. Considering that the new "Urban and Rural Planning Act" has deleted the descriptions about urban development guidelines as outlined in "Urban Planning Act," we suggest adding more in-depth contents of the urban development policies and guidelines to legalize such policies and guidelines [29]. In so doing, healthy urbanization in China will have both the legal and scientific support.

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