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# Macro-Policy to Micro-Implementation: Responses to China's Inward Migration in Guiyang's City Center

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*Investment in China's interior has shifted as a result of the 12th Five-Year Plan's imperative towards medium-size western cities and away from the major coastal mega-cities, which marks a change in migration patterns typical of the past three decades of growth. Focusing on employs a set of six strategies that translate national policy into on-the-ground city development. As the gateway to Western China, Guiyang represents an opportunity to shape a new paradigm of urban growth for this dynamic region focused on nature, culture, quality of life, and sustainability in historic city centers.*

## The Greatest Migration in Human History

Over the past 40 years, China has experienced what some have called the greatest migration in human history. Since 1978, more than 160 million people have moved from rural areas to cities (Chongqing and Jintang, 2012), partly in response to government economic policy and partly to seek better income and a higher quality of life. But this growth has been dramatically one-dimensional, in that it has focused on China's coastal mega-cities like Shanghai, Beijing, Hong Kong, and Shenzhen.

The result has been a concentration of people and social capital with little relationship to the vast natural resources of the country's interior.

To understand the scale of this disparity, it is worth considering the Chinese demographer Hu Huanyong, whose 1934 work "Distribution of China's Population" proposed the theoretical Heihe-Tengchong Line, which split the country into two roughly equal geographic parts. Today, nearly 96% of China's population lives to the east of this line, representing a population density of nearly 260 people per square kilometer. West of the line, the remaining 4% of the country's population lives at a density of just 11 people per square kilometer (Naughton, 2007). This misalignment of people and resources has economic and environmental consequences, requiring massive infrastructure projects to deliver goods and even basic services across the vast countryside.

## A New Direction for Growth

China's 12th Five-Year Plan (2011–2015) began to change the emphasis of national growth back towards the interior hinterlands. Recognizing that, among other problems, rapid economic development has resulted

in "a tightened constraint between economic growth on the one hand and resources and environment on the other," as well as "a gap between rural and urban development" (National People's Congress, 2011), the Five-Year Plan proposes a strategy of large-scale development to "vigorously accelerate the rise of the central region." To do so, it relies on infrastructure construction, resource extraction, industrial expansion, and tourism, concentrated primarily in and around a web of cities where on-the-ground implementation of these ideas takes place, from Xi'an to Kunming, and centered on Chongqing and Guiyang.

The government forecasts that another 100 million rural residents could move to cities by 2020 (Chongqing and Jintang, 2012). The 12th Five-Year Plan changes the focus of this migration towards the country's interior and, interestingly, favors big and medium cities over mega-cities like Shanghai and Hong Kong. However, little proscription is given at the national level to the nature of growth in these cities. How will they actually accommodate so many people? Where – and how – will this growth occur? A deeper dive into the scale of cities is required.



Right: The Heihe-Tengchong Line. Source: The World Bank

Opposite Top: A renewed focus for development in Western China. Source: Skidmore, Owings & Merrill

Opposite Bottom: Historic map of Guiyang's historic city center. Source: Skidmore, Owings & Merrill



### Case Study: Guiyang

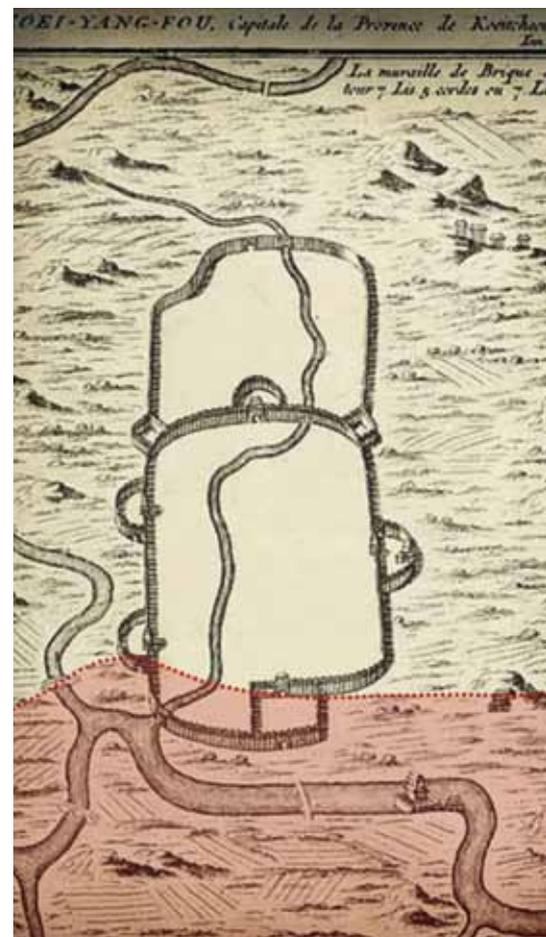
As the “western gateway” to China, the city of Guiyang, which is the provincial capital of Guizhou, is currently the focus of unprecedented development. A city of just over four million people today, Guiyang is projected to double in size in the next 15 years, to nearly the scale of its mega-city cousins on the coast. This profound change is already evident in every corner of the city, where hundreds of construction cranes dot a sprawling skyline. More than 10 million square meters of new development is already in the pipeline for the next five years – a built-up area larger than Center City, Philadelphia.

Due to this remarkable growth, the city has expanded significantly outside its original Yuan Dynasty walls along the Nanming River. Despite encompassing the entire extent of the city for centuries, the wall is now a relic that has been engulfed by the broader city, which has sprawled from its original few dozen hectares to cover an urbanized region of over 8,000 square kilometers. It is recognized, however, that this type of continued peripheral expansion is not sustainable and cannot accommodate the projected need. Thus, a new approach is required.

### Guiyang CBD: A Unique Opportunity

This development case study – the Nanming Riverfront Cultural CBD – encompasses 800 hectares at the center of the city. It focuses on Zhongtian Urban Development Group’s investment in the historic city center to bring life back to the urban core, establish precedent for reversing the trend of incessant urban sprawl, and maintain a legacy of development around the Nanming River.

The site today includes an incredible diversity of existing uses, from modern high-rise office buildings to historic temples, but a large majority of land is dominated by low-slung housing. The Nanming River weaves its way through the heart of the district, providing a unique urban asset where its boundaries have been respected and protected for public use. The vision for the future of the Nanming Riverfront Cultural CBD calls for an extensive transformation of this place in support of four main goals, which were crafted through a collaborative process with the development team and city leaders. These goals are aspirational and do not suggest particular design solutions. They aim instead to create a place that celebrates cultural assets, increases the value of





surrounding areas, and strengthens the city and the river, making for a great place to live, learn, work, and play.

#### *Celebrate Guiyang's Past and Future Culture*

Guiyang is renowned for its rich, western Chinese cultural legacy, the origins of which are rooted in its ethnic diversity. The Nanming Riverfront CBD must continue this legacy by incorporating additional spaces for cultural and performance activities within the proposed parks and riverfront areas.

#### *Connect the Nanming River to the City*

By integrating proposed city parks with the Nanming River, the plan must re-establish both a physical and symbolic relationship between the community and its origins. It is a renewed commitment to the historic riverfront identity, as experienced through a contemporary urban vision.

#### *Create a Unique Identity for the City and People of Nanming*

A renewed focus and commitment to the riverfront is not only a step towards the future, but also a glance into the past. This project presents an opportunity to embrace the history, pride, and importance of the city

through the revitalization of its most valuable asset. It must become an expression of urban identity unique to Guiyang.

#### *Support Healthy Living*

The organization, connectivity, and sustainable principles of a community are directly linked to the health and wellbeing of its inhabitants. By thoughtfully creating a healthy dynamic between the riverfront area and the people moving through it, the project will foster a better environment and a better quality of life for residents.

Each of these project goals ultimately serves a broader idea: pulling the city back to its historic center. By leveraging existing assets and integrating the city more holistically with its environment, the project seeks to reorient the city's development focus towards its existing core area and reduce the pressures of rapid horizontal urbanization on the region's natural resources.

#### **Urban Design Strategies to Accommodate Growth**

Successfully strengthening the city's center through compact, sustainable urban growth will position the Nanming Riverfront Cultural

CBD as an important catalyst of economic growth and success for the region. Moreover, it will establish Guiyang as a new paradigm for redevelopment in other middle- and large-scale Chinese cities. The urban design strategies employed in this project, when adapted to other contexts, can become a template for the future development of sustainable cities in China.

This template focuses on six key design themes, which together form the basis for long-term, sustainable growth. Each of these themes is transferable to other comparable cities, even if their exact on-the-ground implementation varies with the local context.

1. Focus growth inward, not outward
2. Upgrade urban networks as a framework for growth
3. Plan for dramatic increases in density
4. Use nature and open spaces to shape city form
5. Bring history and culture to the forefront
6. Design for resilience

Opposite: View of Guiyang from the river. Source: Skidmore, Owings & Merrill

Bottom: The Nanming River links civic and historic relics. Source: Skidmore, Owings & Merrill

*“The next generation of the great Chinese migration, which began with the 12th Five-Year Plan and continues today, is re-focusing the country’s attention on its interior. Up to 100 million people are projected to move to western cities including Guiyang and Chongqing in the next five years. What will their lives be like, and how will they impact the millions of people already living in these cities?”*



Bottom: Hong Kong is a city that focused its growth inward towards its historic center, rather than outward.  
Source: Steven Henry

Opposite: Aerial view of the new Nanming CBD Master Plan.  
Source: Skidmore, Owings & Merrill

Although they find particular application in the Nanming Riverfront CBD plan, these strategies have not been developed in a vacuum. They build on decades of collective experience with city-building projects in China, and are present in one form or another in the skyline-changing developments happening across the country. But shaping healthy urban landscapes through high-density, people-friendly metropolitan design requires bringing them all together into a single intellectual framework.

### Strategy 1: Focus Growth Inward, Not Outward

Rapidly growing cities must look inward towards their historic centers to realize the scale and character of development

required of them. At the same time, they must discourage continued peripheral expansion that consumes valuable agricultural or natural land and increases resource consumption. In Guiyang, turning development energy back to the city center is the cornerstone of future urban policy. The CBD area focuses on 800 hectares of land in the historic heart, as a counterpoint to other ongoing developments outside the city. The intent is to bring both people and investment back to the city core.

### Strategy 2: Upgrade Urban Networks as a Framework For Growth

A series of urban networks provide the foundation for major development in all CBD areas. Recommendations within the plan cannot be approached simply as a

series of infrastructure interventions, since their real value lies not in the individual parts but the whole. Like all cities, Guiyang relies on roadways, transit, open space, and neighborhood development to undergird urban dynamism. Upgrading these networks to serve 21st Century needs will be key to achieving renewed growth in the CBD.

### Enhancing City Avenues to Support New Transportation Networks

A series of existing avenues extends from the city to the Nanming Riverfront CBD district. These striking, tree-lined streets extend the idea of sustainability more fully into existing urban frameworks. Active programs along the avenues are supported by green infrastructure, including open spaces, remediation areas, and alternatives to non-motorized transportation.

### Revitalizing the Transit Network

The growth and prosperity of Guiyang will be enabled by the development of a fully integrated, multi-modal public transportation system that connects the new CBD with the rest of the city and the entire region. A municipal subway network connects to new high-speed rail lines and the expansion of the Guiyang International Airport. Complementary transit systems, such as light rail (LRT) and bus rapid transit (BRT), will further alleviate automobile dependency while fostering a safe and engaging pedestrian experience. The ultimate goal is to create a balanced environment where pedestrians, cyclists, public transit, and automobile users can co-exist safely and efficiently.

### Creating Distinct Neighborhoods with Clusters of Support Program and Amenities

Diverse and vibrant urban districts and residential neighborhoods will define the character of the new CBD. The plan calls for walkable, mixed-use, urban neighborhoods that encourage urban living, employment, education, and recreation within close proximity to transit. These neighborhoods – typically arranged as areas that are within





a 500-meter walking radius – will each have parks and schools that act as neighborhood anchors, as well as community-focused retail that provides everyday goods and services within walking distance. Smaller-scale blocks will accommodate a variety of housing types and will ensure that the district remains connected, walkable, and actively urban. Open spaces and residential courtyards will ensure abundant access to light, air, and green space for all. The district's density, which is required to shelter the expected population growth, is increased considerably in the plan while still maintaining a human scale in the articulation of the CBD's buildings and spaces.

### Strategy 3: Plan for Dramatic Increases in Density

A rapidly urbanizing world requires critical rethinking of long-held norms of urban density. It seems clear that the cities of the future will be taller and denser than they are today, particularly the rapidly urbanizing cities of the developing world. Doubling the size of Guiyang in the next 15 years will require sustained, major new building projects. In the simplest understanding of this imperative, the city must either build out or it must build up. In the city center,

where land is at a premium, the latter strategy must be a priority.

The existing Nanming Riverfront district includes approximately 8 million square meters of gross area, with a floor area ratio (FAR) of 1.8. Given the proposed redevelopment, the new target FAR has increased to 3.8, more than doubling the district's density. This dramatic increase will accommodate the growth of the city core for several decades, and will contribute to the wellness of new city residents by integrating efficient and responsible strategies for densification. By way of comparison, London's Canary Wharf has roughly 1.4 million square meters of office space on a 400,000-square-meter peninsula – an aggregate density of 3.5 FAR. Guiyang's CBD area would achieve slightly higher overall density across a project almost ten times as large.

Through the process of densification, the urban core can also be rebalanced to provide a rich new network of open space. Currently, the historic city center has 73% percent of its area dedicated to development parcels and only 6% to open space. In the process of adding density, the urban fabric must

be recalibrated to bolster this percentage, increasing open space to 16% of the core area. To achieve this, ultra-efficient, mixed-use development nodes are designed to host most of the new development area, allowing the city to allocate more open space through its verticality.

As with any urban intervention in China, the sunlight approval process for planning is of primary concern. With urban densification, sun patterns and access to daylight must be thoroughly studied to comply with national standards. Block configurations were designed to allow for residential-daylight penetration by using a perimeter-based solution: each block contains a retail perimeter at grade, with a limit of two tower podiums. The two towers are staggered to avoid significant shadow casting and to allow for maximum solar exposure. Given the constraint and need for solar exposure for residential program, office uses are clustered near significant open spaces and within walkable distances of residential areas.

Building on broader city plans for transit, the CBD area capitalizes on transit-oriented development (TOD) nodes at significant



“pinch-points” of the primary circulation networks. At the heart of each TOD node, a landmark tower carries a significant portion of the new floor area. The CBD is essentially decentralized into active and densely arranged corridors of development. The city’s major commercial corridor is connected to Zunyi Road and the Main Guiyang Station (regional rail network); this commercial core hosts two significant TOD nodes which stretch across the primary circulation arteries. The commercial core acts as an interface that filters pedestrian traffic between primary open space – the new Central Park of Guiyang – and residential neighborhoods.

#### Strategy 4: Use Nature and Open Spaces to Shape City Form

The push towards more sustainable cities all across China has begun to emphasize the need for urban form that responds more contextually to existing natural conditions. From rivers and waterfronts to dramatic mountains and valleys, nature, which was once deliberately hidden under layers of urban infrastructure, is once again becoming the defining feature of these locales. Ensuring these ecological features receive daylight is key to ensuring long-term resiliency.

In Guiyang, the landscape is dominated by two primary features: the Nanming River – part of the massive Yangtze River basin – and giant limestone karsts – outcrops of limestone formed over millennia as the river weaved through the valley and changed its course. Although common throughout Western China, the karst formations in Guiyang are particularly dramatic given their size and near-verticality. The Nanming CBD plan uses these topographical features as deliberate voids in the urban fabric, and then proposes to activate them as recreational spaces for the city. It also uses the hill and valley dichotomy to collect and treat rainwater runoff, using natural bio-filtration processes.

The river will become the backbone of a new network of parks and green spaces that augment these natural features while reinforcing the connection between the city and its primary waterway. These parks and green corridors will also host a number of ecological maneuvers, including the management of storm water to improve outflow quality into the Nanming River and increase biodiversity. In total, nearly 10 kilometers of riverfront will be revitalized and help create the primary pedestrian axis

Top: Site plan of Guiyang’s new Nanming CBD. Source: Skidmore, Owings & Merrill

Opposite: Diagram of compliance with daylight access for new residential projects in China. Source: Skidmore, Owings & Merrill

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through central Guiyang. This riverfront will become for Guiyang what the Huangpu Riverfront is for Shanghai: a great place for civic gathering, recreation, ecology, and the daily drama of city life.

The Nanming CBD will also be reinvigorated with a panoply of man-made open spaces, from eco-parks and small neighborhood pocket parks to a great central “Cultural Park,” which all together account for more than 54 hectares of green space. These parks form a critical framework for development of all types and sizes.

#### **Strategy 5: Bring History and Culture to the Forefront**

“Culture” means many different things to different people and in different contexts.

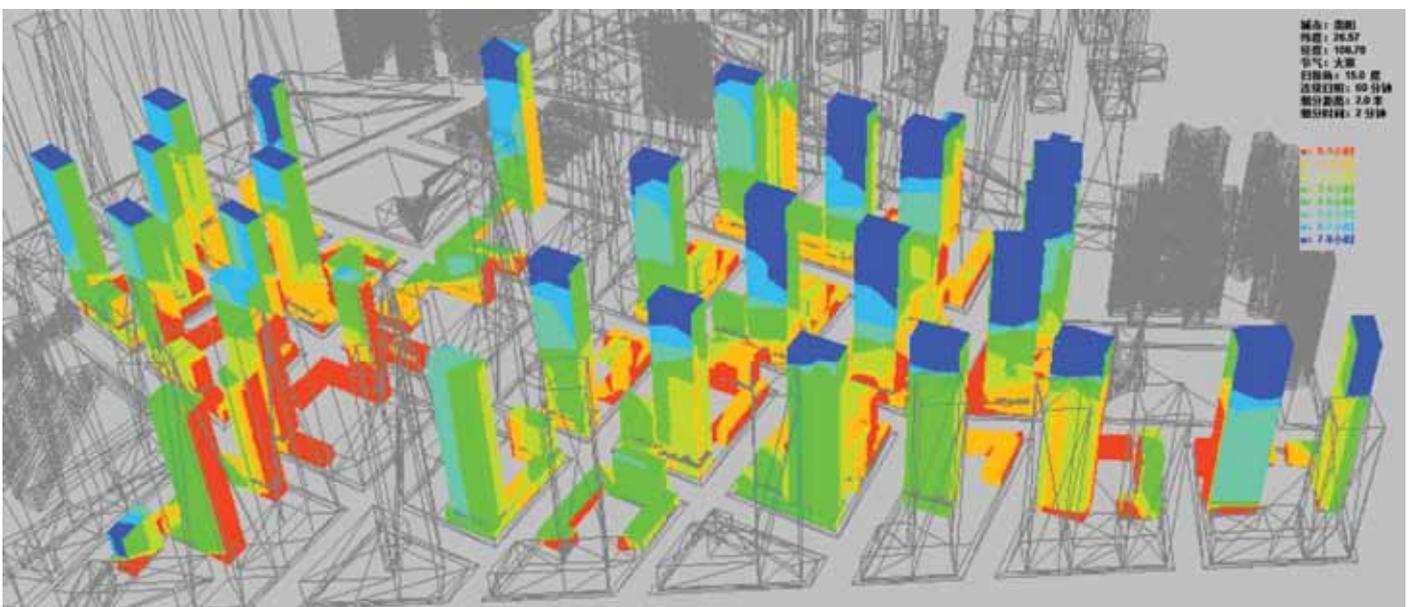
And there is an important duality between cultural history on the one hand and modern culture on the other. How can they be designed to coexist?

In Guiyang, cultural history is abundant. Despite decades of industrialization and progress that largely ignored centuries-old traditions, a number of important cultural sites still exist in the city’s center. The Guiyang Exhibition Hall is located near the major commercial corridor on Zunyi Road, and has been the historic host to many important events for the city throughout the last century. The Nanming River contains a series of civic relics: the Qiannan Temple, the Jiaxiu Pavilion, and the House of Wang Boqun. Recent additions to this family of riverfront civic structures

include Hebin Park, Zhucheng Plaza, Guiyang Grand Theater, and the Guizhou Governmental Office. The Nanming River is the essential, catalytic link between old and new civic structures. The plan calls for a strengthened relationship between the river, historic sites, and major new cultural facilities.

#### **Strategy 6: Design for Resilience**

Planning for a climate-responsible future requires shifts in current practices that, in many instances, are taken for granted. To build the foundation for a sustainable and resilient city, it is imperative to put forward a post-carbon, climate-responsive building environment.





The Nanming CBD addresses sustainability at every scale of development, from the street and building level to district- and city-wide approaches. It does so with an environmental framework that utilizes cyclical design to harmonize natural and technologic processes. The elements of this framework work in tandem with several central government programs which impact Guiyang, including the 12th Five-Year Plan and the Pilot Low Carbon Cities and Renewable Energy Demonstration City programs. The Nanming Riverfront CBD will play a critical role in transforming Guiyang from a manufacturing hub to a service-oriented city that can offer quality of life and cultural amenities to its citizens through progressive approaches to energy, water, waste, emissions, open space, and transportation.

Since 2010, Guiyang is also a Renewable Energy Demonstration City, with plans to complete 2.72 million square meters of renewable energy demonstration projects. Being a member of these programs can be leveraged into the planning and development of buildings in the CBD, as direct funding for advanced technologies is available in addition to those allocated

by the 12th Five-Year Plan. As part of the initial Low Carbon Pilot Program for China, Guiyang has six focus areas:

- Energy efficiency in industrial processes
- Restructuring local economies to favor low carbon business
- New and existing building energy efficiency
- Low-carbon transport
- Increasing renewable and decentralized energy generation systems
- Reducing consumption through education and behavior change

Anticipating the innovations of tomorrow is critical when designing cities today. By maximizing the potential of its key infrastructure investments, the Nanming CBD will pave the way for the city of Guiyang to grow and evolve in a sustainable and holistic manner, with an eye towards environmental stewardship and future climate resiliency.

### Final Thoughts

The next generation of the great Chinese migration, which began with the 12th Five-Year Plan and continues today, is refocusing the country's attention on its interior. Up to 100 million people are projected to move to western cities including Guiyang and Chongqing in the next five years. What will their lives be like, and how will they impact the millions of people already living in these cities? The Nanming Riverfront CBD plan suggests a path forward for these cities based on renewal of urban core areas. It advocates for extensive networks of natural and man-made open spaces, infrastructure investment focused on transit, and development at densities far exceeding common practice today. It leverages existing city assets and culture to create a 21st century identity, and it approaches development through the lens of sustainability and resiliency. The plan can become a model for western Chinese cities to implement—at the micro-scale—the macro-level government imperative to develop China's vast inland areas, and to do so in a manner that both honors the heritage and is responsible to future of the country.



Left: A view of the open space along the river beside the “Central Park” of Guiyang (future vision). Source: Skidmore, Owings & Merrill

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