

# Cities SHIFT

Capacity building and networking for  
climate - and people-friendly mobility

**I.C.L.E.I**  
Local  
Governments  
for Sustainability



**PROJECT CITY PROFILES**

# CitiesSHIFT Project

## *Capacity building and networking for climate- and people-friendly mobility*

One of the common challenges while the city administrations plan and implement policy and plans to improve mobility services and infrastructure is the lack of direct feedback on the effectiveness of the system. It is commonly acknowledged that the need to measure is critical to avoid ineffective solutions. Hence, to make ecomobile modes of transport attractive, such services not only need to be planned and operated well, they also need to be assessed on a continual basis.

The overarching goal of the “CitiesSHIFT: Capacity building and networking for climate- and people-friendly mobility” project is to support cities to identify challenges and opportunities of urban mobility system in hope that the city could shift towards more ecomobile modes of travel i.e. walking, cycling, shared and public transport. To achieve this goal, the project works with six selected project cities from China, India and Uganda through three intervention points.



### PERFORMANCE MEASUREMENT

A key part of this project is to conduct the EcoMobility SHIFT+ assessment, which is a tool developed by ICLEI, to receive feedback on the current mobility system for more strategic planning and implementation. Upon completing the SHIFT+ assessment, cities will be better positioned in creating and strengthening the mobility plans through informed decision.



### CAPACITY BUILDING

The project seeks to strengthen institutional capacity through thematic working groups that facilitate knowledge exchange and transfer among project cities, current EcoMobility Alliance cities, and with external partners.



### GLOBAL DISSEMINATION

Learning outcomes and experiences gained are collated and disseminated in the form of case studies and/or presentations at international workshops and conferences. While this project seeks to benefit project cities through the interventions mentioned, it also encourages replication to other cities.

Successful implementation of this project would allow cities to be more efficient and effective in identifying projects and solutions with regards to sustainable urban mobility. Furthermore, it hopes to inspire replication to other cities within the project country.

The following city profiles explore the urban mobility information about the project cities and their demographics.



# Entebbe Municipal Council, Uganda

## CitiesSHIFT project city profile

### City description

Entebbe Municipality is situated in Wakiso District in the south west of Kampala, the capital city of Uganda. Located on a peninsula into the Lake Victoria, the second largest fresh water lake in the world, the municipality spreads across an area of approximately 56.2 square kilometres (km<sup>2</sup>), of which almost 36% is water.

Entebbe hosts the Entebbe International Airport (EIA), which is the only international airport in the land-locked country and it handles international passenger and cargo traffic as well as domestic flights. The central area which stretches roughly from Entebbe to Jinja in the east of Kampala forms the economic centre of the country and is the densest area in terms of population.

### City vision and mission

Uganda Vision 2040 emphasizes its urgent need for an integrated transport infrastructure to spur its economic growth. In line with the vision, Entebbe developed its second Municipal Five Year Development Plan (2015-2019) (MDP). Entebbe is envisioned to be a model self-sustaining municipality with a prosperous people by 2040, and strives to strengthen its competitiveness for sustainable service delivery and inclusive growth. The MDP details Entebbe's strategic direction, development strategies and implementation measures by prioritizing interventions that contribute to the core projects and programs of the municipality. In terms of transport, the MDP touches on the road construction, building and physical planning.

### Thematic areas

#### Road transport

##### 1. Road network and infrastructure

Road transport is the dominant mode in Entebbe. The municipality has a total of 140.22 kilometers (km) of road network, out of which 32.7km are paved and of the paved roads, 19.58km are in good condition. In order to support the municipal urban needs for infrastructure improvement and to enhance the capacity targeted municipalities, the Ministry of Lands, Housing and Urban Development (MoLHUD) launched the Uganda Support to Municipal Infrastructure Development (USMID) Program. The first phase of USMID will run over a period of six years (FY 2013/14-FY 2018/19) at a total cost of US\$160 million.

Under the program, Entebbe has received a large amount of boost and rehabilitated several roads, for instance Church Road, Nyondo Road and Basude Rise Road. In addition, the municipality has opened up more roads, improved the road infrastructure and installed solar lights over 3km of roads, which increased the accessibility of the network and enhanced road safety. Routine maintenance of the roads has also been regularly carried out, which include repairing drainage channels, cleaning culvert, cutting grass, removing debris and patching potholes.



#### Population

70,219 (2014 census)

#### Land area

56.2 square kilometers (km<sup>2</sup>)

#### Municipal budget

2,528,930 Euro  
(11,350,084,270 UGX)

#### Mayor

Mr. Vincent de Paul Kayanja

#### Website

entebbe.go.ug



## 2. Public transport/ informal transport

In Entebbe, public transport services are mainly provided by informal and private sectors, resulting in unreliable and inefficient transport services. In general, there are three different modes of public transport, including inter-city buses, matatus (minibus taxis, typically a 14-seater bus), motorcycle taxis (boda boda) (Kamuhanda and Schmidt, 2009).

## Air transport

Entebbe is an important entry point into Uganda internationally for both trade and other aspects of international relations thus is of important strategic value. There has been a steady increase in international passenger traffic, growing from 1.33 million in 2012 to 1.53 million in 2016. Meanwhile cargo traffic has been unstable from 2012 to 2016, reducing from 57,919 tonnes to 54,856 tonnes in 2014, but it increased to 59,556 tonnes in 2016. The international cargo traffic mainly consists of exports, including vegetables, fruits, flowers and other perishable products.

The Korea International Cooperation Agency (KOICA) project, which is funded by a grant of 9.5 million US Dollars from the Republic of Korea government aims to improve the air navigation services and automation of the Entebbe International Airport. Since April 2016, a number of project activities have been implemented, including development of airport infrastructure and IT technology (e.g. Airport Operations Database, Computerized Maintenance Management System), investment in tourism infrastructure (e.g. installation of Air Traffic Service Message Handling System) and human capacity building activities. Through this initiative, the municipal hopes to improve safety, efficiency and effectiveness of airport systems. Several other major projects are in the pipeline to upgrade the EIA. For instance, 150 additional parking slots will be added in the airport with an estimate cost of approximately 1.21 million Euros. Since June 2016, existing passenger terminal building has also been extended.

Since June 2018, the Kampala-Entebbe Express Highway (51km) which connects Kampala and the EIA is operational. The project was jointly funded by the Government of Uganda (GoU) and the Export-Import Bank of China (Exim Bank), with a total of 476 million US dollars. Developed and maintained by the Uganda National Road Authority (UNRA), the road hopes to reduce travel time from Kampala to Entebbe and ease traffic congestion.

## References

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Cities Alliance (2017). *Transformational Change in Sub-Saharan Cities - The Role of Informality in the Hybrid Economy of Uganda*. Available from: <https://www.citiesalliance.org/sites/default/files/Role%20of%20Informality%20Uganda.pdf>.



Kampala-Entebbe Express Highway connected to the Entebbe International Airport (Photo credit: Uganda Ministry of Works and Transport)



# Jinja Municipal Council, Uganda

## CitiesSHIFT project city profile

### City description

Jinja Municipal Council lies 81 kilometers east from the capital of Kampala, Uganda, also in the Busoga sub-region. Jinja has the second largest economy in the country, after Kampala. It is located at the source of the River Nile and is on the northern shores of Lake Victoria with rich freshwater ecosystems and wetlands. Jinja forms part of the emerging Entebbe-Kampala-Namataba-Jinja corridor and is connected by railway. It also has a small airport with national and regional flights.

Given its strategic location, Jinja enjoys good links to other major urban centers. Its beautiful sceneries and cultural sites make it a high tourism attraction.

### City vision and mission

The Uganda Vision 2040 aims to attain an integrated network and connectivity by optimizing the use of rail, road, water and air transport modes. One of the key strategies is to establish special economic zones (SEZs) and Jinja, as the core industrial region in Uganda, was named. This is also aligned to the National Development Plan (NDP, 2015/16 – 2019/20), whereby Jinja is identified as one of the five regional and strategic cities to spur national urban growth, with a focus on industrial development.

Kampala-Jinja Expressway (KJE) is one of the five major which serves as a trade link to the sea from the land-locked country. KJE is 95 kilometers long and includes an 18km bypass to the South of Kampala City and is expected to cost approximately 1.0 billion US dollars. The project aims to reduce vehicle operating costs, reduce congestion and promote efficient transport system to spur economic growth.

### Thematic areas

#### Active mobility

Active mobility or non-motorized transport (NMT) i.e. walking, and cycling, is the most popular means of transport in Uganda. Since the Pan African Bicycle Conference (PABIC) held in Jinja in 2001, there have been discussions on developing a NMT Master Plan for Jinja to ensure appropriate and safe infrastructure for pedestrians and cyclists. However, Jinja Council rejected the proposed master plan. One of the reasons was that car parking spaces, which were an important source of income in the municipality, would have been removed because of the proposed cycle lanes (Heyen-Perschon, 2004).

According to the national NMT policy, developed by the Ministry of Works and Transport since November 2012, urban footways exist in Jinja. However, most are in poor condition, not continuous or universally accessible. In the central area, there have been footways which were designed to be comfortable for pedestrians; however they are often congested by motorcycle taxis (boda boda) and small businesses. Lack of proper maintenance and encroachment by vehicles also result in road accidents and other problems. In addition, only several office buildings provide cycling rack in Jinja. Most racks are in the form of front-wheel bicycle racks which is less



#### Population

72,931 (2014 census)

#### Land area

88 square kilometers (km<sup>2</sup>)

#### Municipal budget

6,235,804 Euro  
(27,138,655,000 UGX)

#### Mayor

Mr. Majid Batambuze

#### Website

[jinja.go.ug](http://jinja.go.ug)



popular due to poor security. Nevertheless, the national NMT policy stipulated regulatory framework and guidelines for walking and cycling in transport planning, street design and infrastructure provision. What is lacking is consistent enforcement in the municipality.

## Informal transport

With the government disengaged from providing an efficient public transportation system, informal sectors such as the matatus (minibus taxis, typically a 14-seater bus) and boda bodas flourish. The matatus have unregulated routes, inconsistent stops and fares based on demand. As in many other cities and towns in Africa, informal transport is firmly entrenched and dominates the public transport scene in Jinja.

While the matatus can be seen as mass transport, boda boda functions as taxis in the Western understanding. It is estimated that the numbers of boda boda operators in each division of Jinja are close to 1500. However, the municipality authorities do not know the exact numbers due to their informal nature: no tax collection, no registration. Sentiments towards boda bodas are conflicting. On one hand, the municipality recognizes its contribution to the public as they provide short distance, low-capacity passenger and freight services. From the social perspective, it is an important source of income for operators/ drivers. On the other hand, regulating this informal sector is challenging and often poses safety problem due to aggressive or untrained drivers.

## Water transport

The geographical location of Jinja as an inland port city makes it well connected to other regional cities. However, the port is not regularly used and is in poor condition with most of the rail infrastructure deteriorated and the rail links poorly maintained. Against this backdrop, the National Transport Master Plan (2008-2023) emphasizes that large investments will be made at ports with high traffic potential, including Jinja Port. The national government plans to rehabilitate the port and develop an alternative route to the sea through Lake Victoria as to reduce dependence on the northern corridor and improve overall connectivity.

## References

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The New Jinja Bridge, the first cable-stayed bridge with pedestrian walkway and dual highway in Uganda, commissioned in 2018 restricts boda motorcycles from using it (Photo credit: Beatrice Ch'ng)



# Ludhiana Municipal Corporation, India

## CitiesSHIFT project city profile



## City description

Ludhiana is the fastest growing city in the State of Punjab in northern India. It is the most populous city in the State that qualifies for a metropolitan character with a population of 1.6 million and it is also the largest city in the State in terms of area.

Ludhiana is the largest business and trade hub in Punjab and Asia's biggest bicycle manufacturing hub. It is well known for its small scale industrial units, which produces machine parts, auto parts, hosiery and industrial goods. With strong industrial and manufacturing base, the city is set to be the economic powerhouse for the region.

## Sustainable profile

According to the World Health Organization, Ludhiana is among the top 10 most polluted cities in India, which is a major health concern for its residents. The city has more than 1.6 million registered vehicles with an annual growth rate of 9.79%. It also has higher vehicle ownership (automobiles per 1,000 persons) than larger metropolitan cities like Mumbai, contributing to approximately 70% of the air pollution. Furthermore, the city is facing some major challenges in terms of road safety, competing use of road space, lack of public transport facilities as well as challenges related to poor governance.

## Smart City Mission

Under the Smart City Mission, Ludhiana is envisioned to become more livable and sustainable by providing enhanced quality of life to its residents with less dependence on cars, reduced traffic congestion, better air quality and various modes of mobility. As part of the Smart City Proposal (SCP), Ludhiana identified area-based-development (ABD) strategies and proposed landscape improvements, mobility and transportation improvements as well as rehabilitation of infrastructure.

The Municipal Corporation also developed the City Development Plan (2007-2021), which analysed the traffic and road network and revealed that an integrated road development strategy is needed to solve the current conditions. It aimed to cut down the air pollution within the city.

According to a case study on low-carbon mobility plan (2013) in Ludhiana, effective policies should be enforced coupled with the latest technologies to bring about low carbon mobility to the city. Technological measures include: change in fuel used, vehicle technology, the introduction of electric vehicles and hybrid vehicles. In order to reduce energy consumption and CO<sub>2</sub> emissions from road transport, other interventions include switching to clean fuels and shifting to public transportation.

## Thematic areas

### A safe and healthy city

Ludhiana is the first city in North India to be covered under the Safe City Project. Aligning with the 'Safe and healthy city' vision, the city seeks to develop smart solutions for public spaces with street lighting and



#### Population

1,618,879 (2011)

#### Land area

159.37 square kilometers (km<sup>2</sup>)

#### Municipal budget

151,323,000 Euro (12,798,500,000 INR)

#### Commissioner

Mrs. Kanwalpreet Brar (IAS)

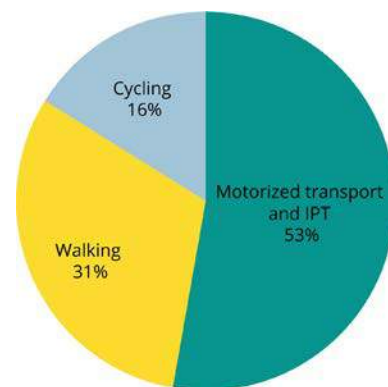
#### Website

[mcludhiana.gov.in](http://mcludhiana.gov.in)

video surveillances. It aims to ensure proper monitoring for public with the installation of 1,700 CCTV cameras in phases covering 25 points of the city. Furthermore, Ludhiana is committed to developing a healthy city strategy with a focus on infrastructure improvements. One of the most ambitious projects is retrofitting the Sarabha Nagar market and addressing up-keep issues such as congestion and lack of parking space. The idea is to revitalize the urban space by increasing green areas, enforcing strong parking regulations, and improving pedestrian accessibility and safety. Through the interventions, the city aims to reduce congestion and pollution in the market area and create more additional opportunities for the market. In addition, car-free zones (e.g. in Ghumar Mandi) will also be enforced to improve overall mobility and walkability in the area.

## A walking and cycling city

Ecomobile modes of mobility (walking and cycling) constitutes approximately 47% of total trips in Ludhiana, among which walking accounts for 31% of total trips and cycling 16%. According to the SCP, Ludhiana will prioritize the development of 29 kilometer footpaths and 21 kilometers of cycle tracks along the Ferozpur Road and Ghumar Mandi. As the cycle manufacturing hub of India with more than 1,500 factories producing bicycle parts, Ludhiana strives to revamp its existing manufacturing industry and transform from being a car-centric city to a walking- and cycling-friendly city. It aims to be the clean and green bicycle capital of the country and aims at doubling the bicycle share on roads by the year 2020. In collaboration with prioritizing streets for pedestrians and cyclists, a public 'Rent a Bike Program' will be introduced. The goal is to enhance last mile connectivity and changing mindsets to be less automobile dependent.



Modal split (Source: SCP)

## Public transport system

Ludhiana has a limited public transport network with only 50 buses operating on 5 routes of 70 kilometer length. A bus rapid transit (BRT) system of a 48 kilometer route was originally planned in as a pilot project; however the system was not implemented due to lack of funds.

The absence of an efficient public transport system in Ludhiana has led to the growth of intermediate public transport in the form of auto rickshaws. It is estimated that 30,000 auto-rickshaws operate daily in the city. Despite that it is convenient, affordable and easily-accessible for users, diesel driven autos rickshaws contribute largely to the city pollution and road congestion. In 2017 Ludhiana introduced the Global Positioning System (GPS) enabled 'smart' electric rickshaws and replaced auto-rickshaws. Rs 57.50 crore (around 6,737,850 Euro) was proposed for the initiative and subsidies are provided to the auto-rickshaw drivers, prioritizing the population living below the poverty line. The door-to-door data collected from the e-rickshaws are analyzed in an integrated platform and can be used for street design and planning to improve users' experience.

In conclusion, all investments made by the city to improve the mobility system are vital to reduce pollution, road congestion, GHG emissions, as well as to enhance the quality of life to its residents.



Retrofitting the Sarabha Nagar market (Photo credit: Ludhiana Municipal Corporation)



# Visakhapatnam Municipal Corporation, India

## CitiesSHIFT project city profile

### City description

The City of Vishakhapatnam, commonly known as Vizag, is Andhra Pradesh's largest city, both in terms of population and economy. Located on the southeastern part of India, it is one of the largest municipal corporations with a population of around 1.7 million, spreading across 515 square kilometers (km<sup>2</sup>) of land area.

This hilly coastal city is connected by different transport modes: east coast railway, national highway, airport and sea port. Visakhapatnam Port is one of the largest ports in the country and has the only natural harbor on the east coast. The geographical advantage coupled with a myriad of infrastructural facilities positioned the city on the international market as the financial and industrial capital. The rapid pace of growth made the city the fifth-fastest growing industrial city in the Asian subcontinent. It has also attracted in-migration from the surrounding sub-urban areas and villages.

However, the high population growth is not met with the supply of efficient public transport system while the better economic situation of the population resulted in higher automobile ownership. Like in any other cities in India, Visakhapatnam faces an all too familiar problem: the increasing motorization rate resulted in traffic congestion and air pollution.

### Sustainable profile

#### Visakhapatnam Smart City

As part of the Smart Cities Mission under the Ministry of Urban Development (MoUD), Visakhapatnam is selected amongst the top 20 cities (ranked 8<sup>th</sup>). As set out in the Smart City Proposal (SCP), the vision of Visakhapatnam is to create "A Resilient and Healthy Metropolis for People". Its strategic focus revolves around becoming a leader in sustainability, livability and healthy living. Currently, Visakhapatnam is working on implementing the SCP and has taken up various sustainable initiatives, beginning with retrofitting designated areas in the city. Aligned with the vision, the city strives to revitalize public spaces, improve street designs, enhance safety conditions, especially making streets safe for pedestrians and cyclists, and providing more mobility options for its residents.

#### Low Carbon Comprehensive Mobility Plan

Visakhapatnam was one of the three cities selected by the United Nations Environment Programme (UNEP) for Low Carbon Comprehensive Mobility Plan (LCMP) in India. The LCMP articulates the path to develop sustainable and low-carbon urban mobility systems and suggests integrated transport solutions.

### Thematic areas

Current mode shares in Visakhapatnam comprises: 52% of walking, 18% of bus trips, whilst cars and 2 wheelers contribute to 17% of the total trips. According to an analysis on business-as-usual (BAU) scenario for 2030, the share of walking will shrink from 52% to 36%, whilst cars and two-wheelers will increase from 17% to 33%. The increase of vehicles will result in severe congestions on many corridors within the city. Considering these drawbacks, various interventions were identified including building a Bus Rapid Transit (BRT) system and



#### Population

1,728,128 (2011 census)

#### Land area

534 square kilometers (km<sup>2</sup>)

#### Municipal budget

361,354,000 Euro  
(30,562,325,000 INR)

#### Commissioner

Sri M Hari Narayanan, I.A.S.

#### Website

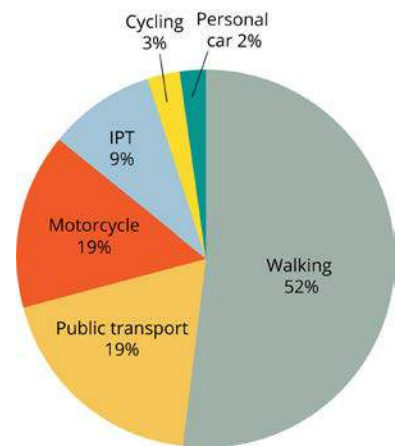
[www.gvmc.gov.in/gvmc](http://www.gvmc.gov.in/gvmc)

infrastructure for active mobility.

## Active mobility

According to the LCMP, although most people walk (52% of modal share for walking), there are only 78 kilometers of footpaths. 41 Kilometers of priority corridors for footpaths and safe crossings are identified for further development. Aligning with the 'Urban Road Design Guidelines' which was released by the Ministry of Urban Development, Visakhapatnam aims to upgrade the footpaths by making it continuous and more universally accessible.

Cycling currently accounts for only 3% of the total trips in the city. One of the major reasons is that there is a lack of cycling infrastructure and cycling conditions are poor. Thus, Visakhapatnam has plans to install better cycling infrastructure: bicycle parking, crossing facilities, vehicle-free zones, free bicycles, dedicated and shared cycling lanes. A public bike sharing system is piloted along the beach front road and it has garnered much support from the residents, particularly the residents under 40 (68% favoured it based on a 2011 census).



Modal split (Source: LCMP - Visakhapatnam)

## Public transport system

Public bus is the key public transport mode with a modal share of 18% in Visakhapatnam, with a fleet of 670 buses catering 50,000 trips everyday. There is lack of information at the bus stops in terms of the time, routes, delays, real time information on accidents as well as a lack of automated fare system. In order to reduce the travel time for people using buses and improve the network connectivity, the city is currently exploring two Bus Rapid Transit (BRT) corridors (Pendurthi Transit Corridor and Simhachalam Transit Corridor) with a length of 43 kilometres. Furthermore, the city has planned to upgrade the existing public bus system by retrofitting intersections with priority signalization for buses, upgrading docking and boarding system at the stations as well as improving queue bypass lanes at intersections.

## Informal transport

Auto rickshaws form an efficient mode of first and last mile connectivity in Visakhapatnam's urban road transport system. It caters to an estimated 15% of the travel demand with a total of 25,000 registered vehicles plying on the roads in the city. According to a survey in the LCMP, around 80% of the auto rickshaws in Visakhapatnam are privately owned while 20% are rented by the drivers.

Under the Smart City Proposal, Visakhapatnam plans to replace the diesel auto rickshaws with e-rickshaws. New "E-Zones" will be set up, where vehicle charging stations will be installed and electrical substations will be upgraded. The city hopes to increase the use of electrified 2 wheelers and 3 wheelers with the aim of reducing air pollution. In order to improve the operations of auto rickshaws, other measures have also been planned in terms of policies and infrastructure s (e.g. stopping and boarding facilities in sync with bus-stops).



To make the city more attractive for tourists, an "integrated tourist project" is being proposed to upgrade the facilities along the Beach Road including construction of cycling tracks and traffic management (Photo credit: Smart City Vishakhapatnam)



# Kaili Municipal People's Government, China

## CitiesSHIFT project city profile

### City description

Kaili City (凯里市) is a central regional city of eastern China's Guizhou province. Known as the Pearl of the Miaoling Mountain, it is also the epicentre of the Guizhou economic zone and the capital of Miao and Dong autonomous prefecture. The city attracts throngs of local and international tourists each year charmed by the scenic landscape, ancient architecture and colorful mix of Chinese ethnic minorities, predominantly the Miao group.



Kaili is traditionally one of the leading rice producers in China. To the south of the city is the Guizhou-Kaili Economic Development Zone which was established in 2000 to catalyze industrial development for the region. The construction of railways, high-speed rail, airport and water transport significantly improved regional connectivity, positioning Kaili to be the main gateway connecting Guizhou province to eastern and southern China, catapulting economic development of the city in recent years.

### Sustainable profile

Kaili City established the "Sustainable City and Green Development" strategy, to improve air quality and urban health. One of the critical interventions is the creation of public squares and green parks. The city increased 260,000 square meters (m<sup>2</sup>) of green areas through 43 urban greening projects, including beautifying riverside landscapes, the creation of nine public squares and parks, vegetating mountains, and others. Today, Kaili maintains a total of 1,577 hectares of urban green space, with 36.68 percent of green area rate at built-up areas, 40.71 percent of the green coverage area, and 13.98 m<sup>2</sup> of green space per capita. Furthermore, the city relocated and strengthened inspections on polluting industries; phased out motor vehicle exhaust; and is continuously replacing energy source from coal to gas or electricity. Kaili's urban ambient air quality compliance rate reached 100 percent in 2017, of which more than 85 percent are excellent days.

### Thematic areas

#### Improving rural and regional connectivity

Due to the undulating terrain of the city, accessibility has been a fundamental challenge area for the residents in the past, often relying on walking and where possible, traditional trishaws and bicycles, making access the key focuses of the municipality. Since 2008, the city focused on improving rural access through the construction of road networks, including highways (1722 kilometres, km), county roads (258 km), township roads (422 km), and village roads (680 km) implemented over four phases. Since 2017, the goal of reducing travel time between the capital of the autonomous prefecture, urban areas, and surrounding villages to 30 minutes was achieved, benefiting the rural poor to have faster access to job opportunities and social facilities through better quality and safer road network.

In recent years, the city government has been working together with the regional and national governments to further enhance regional connectivity by developing long rail, air and water network. Since 2018, the Shanghai-Kunming Railway (Xiangyu Line) and Shanghai-Kunming Highspeed railway line also pass through Kaili City, significantly reducing travel time to the western metropolians. There are also two main waterway routes in

#### Population

522,601 (2014)

#### Land area

1,570 square kilometers (km<sup>2</sup>)

#### Municipal budget (2019)

265,684,000 Euro

(¥ 1,995,060,000 CNY)

#### Mayor

Yang Bo (杨波)

#### Website

[www.kaili.gov.cn](http://www.kaili.gov.cn)

Kaili with two docks, namely the Kaili Wharf and the Bypass pier. The Kaili Huangping Airport is operational since 2013, serving flights daily to other bigger Chinese cities. The airport serves districts around the province with the long distance bus routes provided by nine private transport companies.

## An intelligent and clean public bus system

Kaili City is named as the “Priority Demonstration City of Guizhou Province” for public bus system as it is the main public transportation for Kaili City although there are plans to develop the Kaili-Dudu tram system. Public transport is a strategic development for the city. Managed and operated by the municipality, there are currently 28 bus lines in Kaili City with 522 stops and 62 bus platforms, with an annual passenger volume of 76.16 million passengers and 19 million km of annual operating mileage. Under the “one city and 14 districts system”, Kaili’s public buses have expanded to serve all districts within the province with 715 buses and 71 lines.

The city leverages on big data and technology to improve operational efficiency, integration and convenience of commuters. The Municipal Public Transport Corporation researched and invested in a Kaili Intelligent Bus Management System which consists of three key components: (1) smart card system to support seamless transfer and integrated payment within the province; (2) 3G video real-time monitoring system to enhance safety; and (3) intelligent dispatching system to provide timely and efficient service.

This system results in the creation of a mobile app which provides real-time information and payment system. Since 2018, the system is also fully integrated with the popular social messaging app, WeChat, using scan code system for cashless payment. The frequency of bus service within the urban area increased to every three to five minutes and commuters are allowed free transits within one hour upon analysis of commuters’ travel patterns. Furthermore, free bus services are offered to retired military personnel, people with reduced mobility, and elderly above 70.

In 2019, 151 electric buses started operations in Kaili City and expect to transport 33.7 million passengers per year. It is envisaged that it will reduce 11,290 tonnes/ annum of carbon emissions, marking a new achievement in the city’s public transport industry. It does not stop here. Some of the strategic public transport targets by 2020 are: 100% public transport coverage within 500 meters; 85% passenger satisfaction; and public transport trips account for 60% of the modal split. Kaili City’s exciting development demonstrates how a developing city leverages on technology to leapfrog and provide an inclusive, efficient and clean public bus system.



151 electric buses began operations in January 2019 in Kaili City (Photo credit: Kaili Municipal People’s Government)



# Foshan New City, Foshan Municipal People's Government, China

CitiesSHIFT project city profile

## City description

Foshan City (佛山市) is a prefecture-level city in southern China's Guangdong Province. It is located at the hinterland of the Pearl River Delta (PRD), adjoining Guangzhou on the east and Hong Kong and Macao in the south. As a junction of PRD's transportation system, Foshan is well connected with other cities via air, rail, highways and water transport.

Due to its strategic location, Foshan New City (佛山新城) was established in 2003 in the south-central part of Foshan City, with demarcated zone known as the Foshan Sino-German Industrial Services Zone or previously known as Dongping New City. As a national cooperation platform, it has been acknowledged in the "Joint Declaration to Further Advance Two-way Investment" under the strategic partnership between China and Germany. Additionally, it is among the first batch of China-European Union Urbanization Cooperation Demonstration Areas, supported by the Chinese national government. Foshan New City is poised as a key economic development catalyst and has invested in physical developments to attract high value-added international investments. Its industry is based on three pillars: advanced manufacturing, convention and exhibition as well as pharmaceutical industry.



### Land area

534 square kilometers (km<sup>2</sup>)

### Municipal budget

60,149,836 Euro  
(¥ 453,610,300 CNY)

### District director

Qu Bangmin

### Website

[www.sino-german.gov.cn/English/](http://www.sino-german.gov.cn/English/)

## Sustainable profile

Foshan New City serves as a reference for other Chinese cities in urbanization and sustainable development. It takes a regionally integrated approach and places a strong emphasis on creating a green and livable city. One of the key interventions is to accelerate sustainability in the built environment sector. To date, Foshan New City has built approximately 1.16 square kilometers (km<sup>2</sup>) of green areas, 400 km<sup>2</sup> of green buildings have achieved environmental sustainability standards, and rooftop and vertical greenery are also test-bedded for a more pleasant living environment.

In addition, eight kilometers (km) of ecological corridors along riversides was created for residents to enjoy as public spaces. In particular, it features "cultural characteristics unique to the Lingnan region (岭南特色)" in its urban development. It won the Euro-China Green and Smart City Awards for its achievements in sustainable urban development in 2015 and 2016.

## Thematic areas

### Planning for integrated transport

In anticipation of a growing population and affluence, there is a need to build a comprehensive transport system that connects more destinations efficiently and comfortably. This includes expansion of the metro, high-speed intercity rail and bus system to cater to growing mobility needs guided by the Foshan Transportation Development Whitepaper (2013). To date, the Guangzhou-Foshan intercity metro line is operational, providing rapid linkage to Guangzhou. Being the first intercity metro line in China, it carries more than 330,000 passengers a day. It has three underground stations in the Foshan New City area, including Shijilian station, Dongping station and Xincheng Dong station. While Foshan Metro line 2, line 3 and the Guangzhou Metro line 7 are at an advanced stage of construction, the connectivity of Foshan New City to nearby cities will be enhanced upon its

completion.

## Transit Community for optimized bus service

Before changes were made in Foshan, private bus companies operated only in profitable bus routes, while there were fewer buses at areas with less demand. Recognizing the need to balance its public service and market-oriented operations, Foshan Municipal Government introduced a "Transit Community" (TC) concept in 2008. Under this scheme, each district TC is structured into three entities: 1) public transport regulatory authority; 2) transport management company; and 3) transport operator. Each entity has its responsibilities: the regulatory authority provides strategic decisions; the bus management company collects fares, tenders and monitors transport operations, while the operator provides bus services and is paid by the management company based on a contract-based agreement. Such complementary role reduces competition while allows bus operators to improve their operational efficiency and optimize routes.

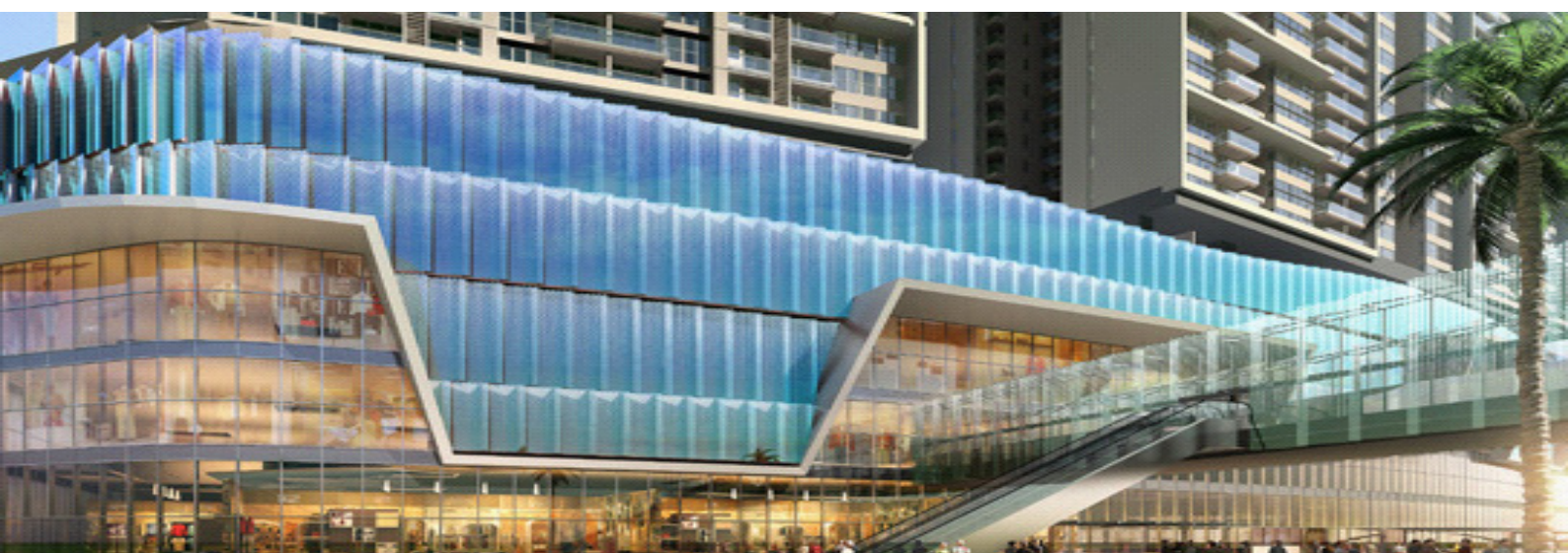
As of 2018, Foshan's bus network comprises 620 bus routes and 15.3 km dedicated bus lanes for express services. Eight express lines, including four vertical, two horizontal and two ring routes run at an average speed of 24 Kilometre per hour (km/h) during weekdays. It has a total of 6790 buses, among which 1714 buses are electric buses and 593 are hybrid buses, serving 1.90 million passengers daily. Foshan New City has 12 bus routes provided by various bus operators. As part of the city's efforts to improve innovation in public transport, the city plans to create a demonstration lane for hydrogen buses by 2020.

## Integrated fare and passenger information

Using the bus services in Foshan is convenient. The WeChat electronic payment system can be used throughout the city's bus network, which facilitates secure, seamless and straightforward user experience. Passengers can also use rechargeable transportation cards, UnionPay credit cards and other cashless payments to pay for the fares. Real-time information improves bus service. Data reveals that more than 1.35 million passengers actively use the mobile application Che Lai Le ("车来了"), which informs them about the arrival time of buses, interchange possibilities and next departures. Timetable and schedules are well coordinated to ensure steady and smooth bus services. For instance, buses in Foshan New City usually run at 20-minute intervals and less than 10 minutes on main roads during peak hours.

## A vision to be a regional transport hub

The city cleverly positions itself to be a strategic regional hub linking to the neighboring cities which are also economic powerhouse through the development of a transport hub with bus interchange, metro and intercity rail stations. Even within the city, the transport hub will also be connected to residential, commercial, recreational, and public amenities within this 700,000 square meters (m<sup>2</sup>) site to be developed. The goal is to make this vast city to be human-scaled, making areas attractive as places to live and work, and ultimately, to invest.



*A transport hub will be built, integrating land use and transportation planning in the Foshan New City (Source: Foshan New City Development and Management Committee)*





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