

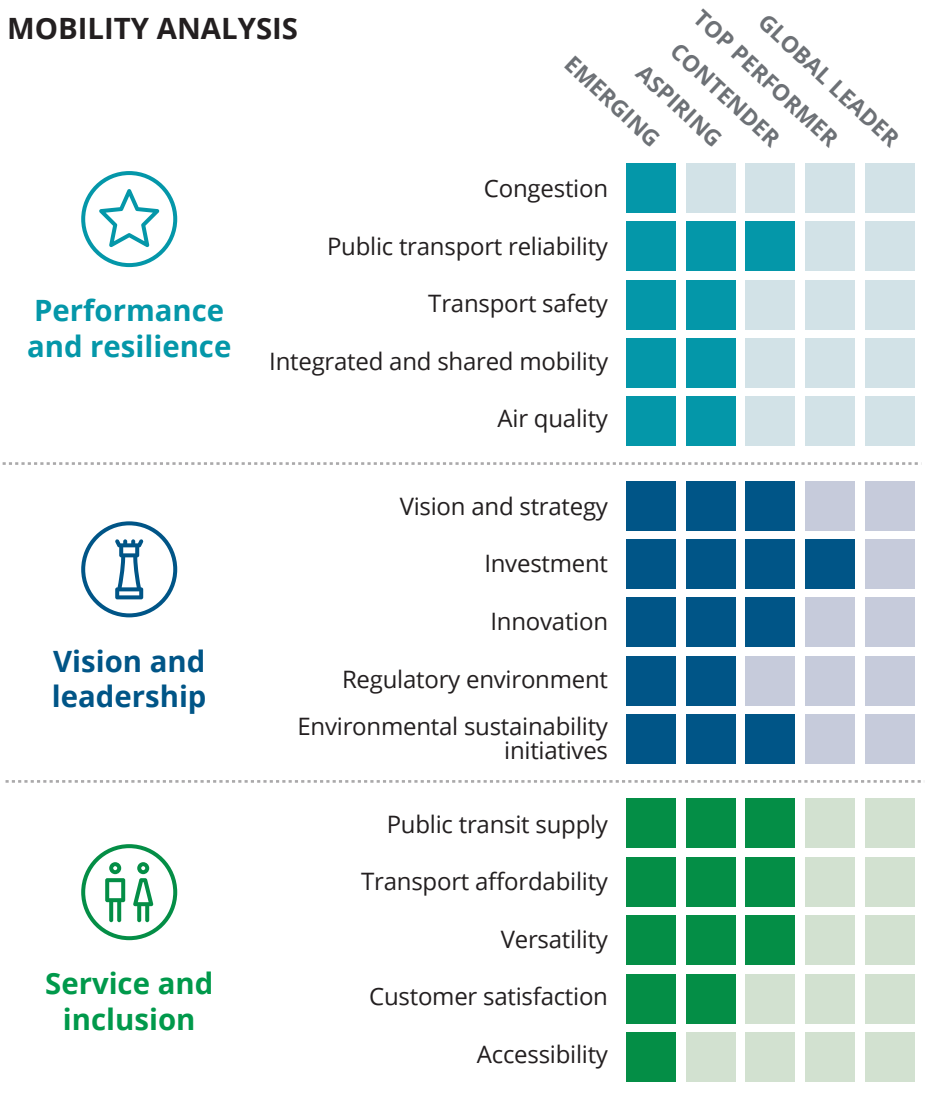
Analysis area

Mumbai

Analysis area: 4,355 km² | Population: 22,046,000 (2016) | Population density: 5063/km²

Definition of analysis area: Mumbai Metropolitan Area, which comprises Greater Mumbai, Thane, Kalyan, Navi Mumbai and Ulhasnagar

MOBILITY ANALYSIS



KEY MOBILITY STATISTICS

Public transport options*
Metro, bus, light rail, commuter train, taxi

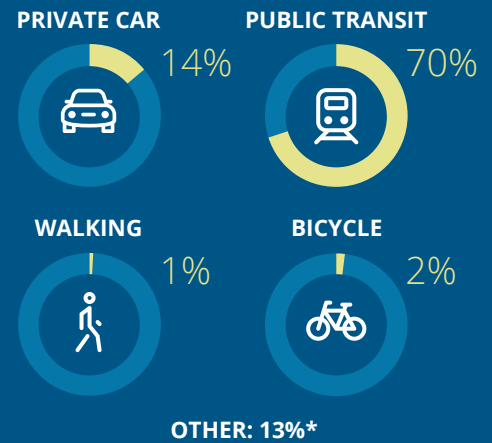
Monthly public transport pass
US\$15

GDP
US\$416 billion (2017)

Principal transport authorities
Mumbai Metropolitan Region Development Authority, local municipal bodies of Mumbai, Thane, Kalyan, and Western and Central Railways

*Regulated, operated, and monitored by principal transport authorities.

JOURNEY MODAL SPLIT



*Includes auto rickshaws, private two-wheelers, private taxis

FUTURE OF MOBILITY CAPABILITY



STRENGTHS

- Extensive bus and commuter train network that serves more than 3 billion passengers in a year
- Investments to expand the number of transport options, including the Mumbai Metro and the Mumbai Monorail
- Plans to invest US\$17 billion on a high-speed rail corridor to increase connectivity between Mumbai and other economic hubs

CHALLENGES

- Vulnerability of the transport network to the external environment—the chronic breakdown of the system during the monsoon season can cause more than US\$500 million worth of economic loss annually
- Deteriorating road infrastructure and absence of separate bus lanes causing congestion and accidents
- Increasing burden on commuter rail, with trains on average packed to 2.6 times their capacity

Key focus areas to improve city mobility and realize the Future of Mobility:



Identify alternative financing solutions, such as congestion pricing, to support the public transport system



Develop automated toll booths to ease rush-hour congestion on arterial roads



Deploy data analytics solutions to optimize traffic signal timings in areas such as Santa Cruz, Andheri, and Bandra

MOBILITY ANALYSIS FURTHER DETAILS:



Performance and resilience

Mumbai has a heavily used transit network, with an aging public transport system. Lack of capacity is causing issues such as reduced public transport reliability, traffic collisions, and high road congestion.

- Performance of the public transport system deteriorated during 2016. The railway system reported 40 percent more disruptions than in 2015. The government plans to introduce a new signaling system, and create open spaces around tracks to avoid disruptions during monsoon season.
- In 2015, Mumbai recorded 23,468 traffic collisions, the highest in the country. Along with poor road infrastructure, the lack of adherence to road rules is seen as the main cause.
- The city does not have a smart card for public transport. Transport authorities have proposed an integrated ticketing system for public transport and private taxis by 2018–19.



Vision and leadership

The Mumbai Metropolitan Region Development Authority (MMRDA) is investing in an overhaul of the commuter train system. The government has also laid out plans to increased electric vehicle (EV) adoption in Mumbai.

- The Comprehensive Mobility Plan for Greater Mumbai outlines strategies for the transportation system by 2034, with a focus on public transport and road infrastructure. Nonetheless, it does not include new mobility models, such as self-driving vehicles and shared mobility.
- To modernize the commuter train system, the MMRDA has plans to order US\$7.5 billion worth of new coaches, signaling equipment, and rolling stock.
- Under the Maharashtra Electric Vehicle Policy 2018, the state government plans to add 500,000 EVs over a five-year period. The policy also proposes tax refunds to companies making EVs, subsidies for EV customers, and aid in setting up charging infrastructure.



Service and inclusion

Mumbai is expanding its public transport network and options, but neglects issues such as accessibility for disabled people.

- Under the Mumbai Urban Transport Project, the city has expanded the rail network to surrounding regions, increasing the public transport supply. Cofinanced by the World Bank and the Indian government, the project has been running since 2002 and will be complete by 2030.
- Apart from commuter rail and buses, Mumbai has added the metro and the monorail since 2014. In addition, the city has cheap transit options, such as taxis and auto rickshaws, which work as first- and last-mile solutions.
- In 2017, an independent survey revealed that 98 percent of railway stations in Mumbai pose a high risk or are “dangerous” to persons with disabilities and senior citizens, lacking basic structures such as ramps and escalators.

SUMMARY

Faced with an aging public transport infrastructure, Mumbai—the financial capital of India—hopes to revamp its public transport network with an ambitious investment program. Peak-hour congestion on roads, traffic collisions, and public transport accessibility are the main hurdles to overcome for Mumbai to become a global leader in transportation. Although it starts from a low base, the city is actively pursuing initiatives such as integrated payments and new signaling systems for commuter rail, and promoting EVs and rapid transportation options, such as bullet trains. However, the city lags in mobility solutions such as bikesharing.

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About the Deloitte City Mobility Index

The Deloitte City Mobility Index reviews major cities on key aspects of mobility and the resulting relationship to economic performance. Drawing on publicly available data, client conversations, and bespoke Deloitte analyses, we assess each city's ability to transport its citizens both now and in the future and therefore its potential to bring prosperity to the city.

As we receive feedback, we will update and expand the analysis, which may mean the results shown in this document may change.

For the full interactive index, visit the Deloitte City Mobility Index at deloitte.com/insights/mobility-index.

For Deloitte's insights on the Future of Mobility, visit deloitte.com/insights/future-of-mobility.

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