AECOM

STRENGTHENING RESILIENCE

IMAGINE MUMBAI:

IMPROVING LAND USE IN INDIA'S BURGEONING CITIES

In the first of a series covering our Imagine 2060 partnership with Asia Society, now in its third year and focusing on 'Earth', AECOM's India Chief Executive **Avinash Misra** discusses how Mumbai is tackling the urgent issue of land utilisation in the face of rapid urbanisation.

Land in Mumbai has always been a precious commodity. A rapidly growing population, combined with years of coastal land reclamation and major building works, have put a great deal of pressure on what is now the most populous city in India. By 2060, Mumbai's population is projected to more than double, reaching 42 million people — equivalent to the population of Canada living in one city.

Similar to many dense, developing cities throughout India, Mumbai is looking for sustainable ways to utilise its finite land resources and keep the city moving and thriving despite the massive influx of citizens.

What can be done today?

When our participants came together in Mumbai, as part of the launch of our Imagine 2060 [1] series on 'Earth', it became clear that — compared to places like Singapore — developing countries, such as India, often face additional challenges in their long-term planning process, due to the more immediate pressures that they face in housing, clean water supply, air quality and congestion. It makes long-range planning (for example, with a forty-year timescale) less viable for those cities that need to find urgent solutions to these complex, interconnected issues as well as secure the political will and funding to fix them.

42M

Mumbai's projected population in 2060

When it comes to improving Mumbai's land use today, enhanced connectivity tops the list. Increased congestion[2] can be a sign of economic prosperity when tied to a population surge, but the problem must be alleviated quickly before the time lost in traffic translates to productivity loss, wasted fuel, environmental degradation and a decrease in GDP.

THE BUILDING OF NEW BRIDGES, TUNNELS, ROADS, AND METROS CAN HELP CHANGE A CITY'S DENSITY DISTRIBUTION, IMPROVING THE WAY IT RUNS.

Mumbai Sealink

The building of new bridges, tunnels, roads, and metros can help change a city's density distribution, improving the way it runs. The capacity to move crucial infrastructure like this underground, as well as out to sea where possible, can also free up surface land for other uses and helps cities make the most of their connectivity.

But easing congestion in a city requires the government and private sector to work together. It also calls for an integrated, holistic approach to development. Simply put, there's no one-size-fits-all solution to cities' congestion issues. Instead a combination of travel solutions[3] works best to reduce citizens' reliance on private vehicles and improve connectivity across the board. Here, drawing on AECOM's experience working on major infrastructure projects in Mumbai and across the world, we discuss some of the reasons why transportation development is crucial to achieving this.

A city on the move

AECOM is partnering with the Government of Maharashtra to alleviate Mumbai's over-crowded and often insufficient transportation systems. Identified as "one of the world's most audacious transit projects"[4], the 21-mile (33.5-kilometre) Mumbai Metro Line 3 (MML3), is part of a 172-mile (277-kilometre) metro network. Once complete, MML3 will increase the line's existing capacity by about five times, carrying 1.6 million passengers per day, and Mumbai will be the world's most crowded city to have built an underground metro.

21

mile Mubai Metro Line 3 is part of a 172-mile metro network

Crews are working 24 hours a day to speed the delivery of this project, aiming for a planned completion by 2021.

Unlocking land value

The addition of transit-oriented developments (TOD) along metro corridors could further decrease the number of cars on the road by enabling people to live next to or directly atop metro stations, thus reducing their commute time as well as the need for extensive last-mile services. TODs push the boundaries of traditional mixed-use developments to create vertical cities that seamlessly utilise above- and below-ground space. Innovative construction methods can also enhance transportation speed, consistency and sustainability.

Integrating TOD into a city's overall design requires a clear vision and alignment across both public and private sectors. Without these, developments run the risk of becoming simply transit-adjacent, instead of transit-oriented. Coordinating efforts through each phase of the process serves to avoid competing developments from the mass transit network that could undermine TOD and further exacerbate congestion and environmental degradation. It is essential that all parties collaborate with the goal of improving transit accessibility rather than just easing the use of private vehicles.

Building capacity

Recognising that there will still be cars on the road for the foreseeable future, the next component is to increase road space and bridges either by building new roads or expanding the capacity of existing ones.

The Mumbai Coastal Road is an eight-lane, 18-mile (29 kilometres) long freeway that will run along the city's western coastline, connecting Marine Lines in the south to Kandivali in the north. The project is expected to host nearly 130,000 cars per day[5], provide relief to lakhs of commuters who currently take up to three hours to travel the distance in peak-hour traffic, and create large patches of open green space, a rarity in Mumbai.

The longest sea bridge in India is also currently underway. The Sewri-Nhava Sheva, Mumbai Trans Harbour Link (MTHL) is a 13.6-mile long (22-kilometres) six-lane viaduct and freeway grade road bridge connecting Mumbai and Navi-Mumbai across the Mumbai Harbour. MTHL is seen as an important project to decongest the city, especially south Mumbai. →

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Toward 2060

An integrated approach to land planning in Mumbai may serve as an example for other rapidly growing cities throughout India and around the world. Integrated connectivity through infrastructure allows people to live, work and play in different realms of a city. Places that were previously inaccessible can suddenly be reached within an hour and adding mixed-use developments around transit hubs can make a city run even more efficiently.

While 2060 may be too far ahead for some to plan, there are many steps that can be taken in the interim to progressively improve a city's land utilisation, ensuring that people on its streets, trains and sidewalks are moving smoothly. With holistic transportation planning, including metro, transit-oriented development and strategic road improvements, Mumbai can ensure that it makes the best use of its land today and tomorrow. WL

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