

DEMOGRAPHIA



MUMBAI (BOMBAY): AFFLUENT ARCHIPELAGO IN A SEA OF POVERTY

BASIC INFORMATION: 2001		Similar To
Metropolitan Area Population (1)	19,200,000	New York Mexico City
Urban Area Population (2)	17,000,000	Mexico City, Seoul-Incheon
Urban Land Area: Square Miles	250	Quebec, Grand Rapids, Curitiba, Athens, St. Petersburg
Urban Land Area: Square Kilometers	648	
Population per Square Mile	68,000	Hong Kong
Population per Square Kilometer	26,200	
(1) Per Forstal, Green & Pick (2003) ¹ (2) Continuously built up area. Includes urbanized portions of the municipal corporations of Greater Mumbai (the city of Mumbai), Thane, Kalyan-Dombivli, Navi Mumbai, Bhiwandi, Mira-Bhayandar, Ulhasnagar, Ambarnath, Kulgaon-Badlapur and Panvel.		

26 December 2006

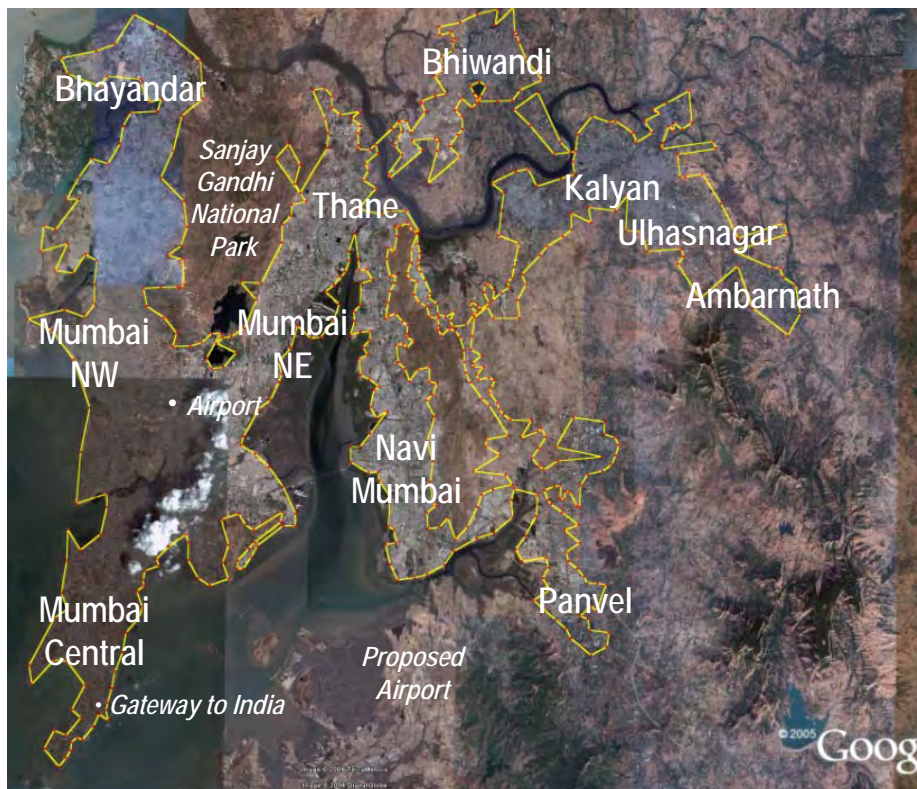


Figure 1: Mumbai Urban Area & Municipalities

Mumbai: Shanghai or Kolkata?

When parts of Mumbai (Bombay)² begin to resemble Paris, it means you have spent too much time in Kolkata (Calcutta) and Delhi. Kolkata, Delhi, Mumbai --- this is the order an optimist should take when visiting the three Indian megacities (urban areas over 10 million population). Kolkata, while perhaps not as dreadful as some reports, shows only the faintest sort of light.³ The poverty is pervasive and little of the urban area is either clean or attractive. Delhi⁴ is a step above that. The parts of the city planned for the national capital, while generally less than tidy, are far better than Kolkata. Indeed, the mall from the Secretariat to India Gate is as attractive as Washington's mall and more pleasing to this observer than Brasilia. However, most of Delhi is, poor, untidy, and even filthy (as is nearly all of Kolkata). Further, many areas are over-planned, rivaling the sterility Stalinist architects imposed on Eastern Europe and the former Soviet Union.

Mumbai is altogether different from Delhi and Kolkata. Many small pockets of Mumbai --- often single high-rise building surrounded by squalor, have the look of first world prosperity, something absent in both Kolkata and Delhi. At the same time, Mumbai, like the others, has a large third world population that is dreadfully poor. Perhaps as in no other urban area in the world, the complete array from wealth to poverty is on display in Mumbai.

Local officials, however, are not without vision. Many articles have appeared in recent months suggesting that Mumbai strive to become another Shanghai. This is an aggressive goal, because Shanghai and other Chinese urban areas have made broad economic progress in recent decades.⁵ Chinese urban areas such as Shanghai and Shenzhen could achieve high-income world status before long. The challenges in China, however, pale by comparison to those of India.

India's International Urban Area

Yet, unlike Delhi and Kolkata, Mumbai has the look of an international or "world city." Numerous high-rise residential buildings are spread throughout not only the municipality of Mumbai (the Municipal Corporation of Greater

Mumbai), but also into Thane, the master planned city of Navi Mumbai and Kalyan-Dombivli. There are many signs along the roads advertising new high-rise housing projects. Mumbai has something of the look of a mainland Chinese urban area or of Jakarta or Bangkok, with its highly decentralized high-rise development. This intensity of modern residential development is simply not to be found to any extent in Delhi or Kolkata.

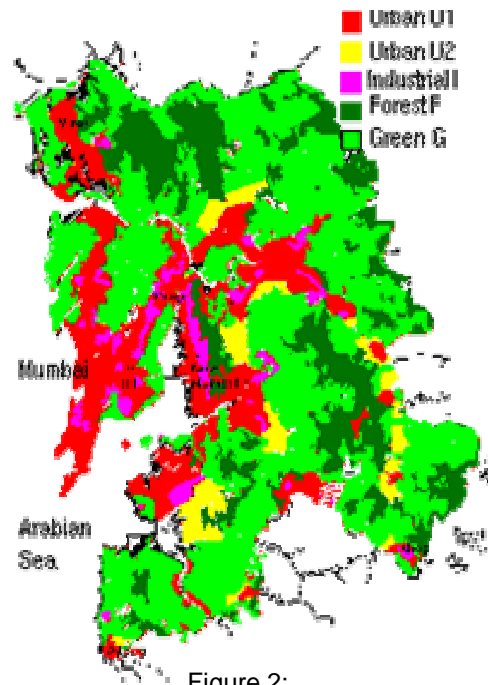


Figure 2:
Corridors of the Mumbai Urban Area
(Source MMRDA)

Further, Mumbai has a strong central business district (downtown) and edge cities (suburban office centers) of international standard are developing outside the central business district. In Kolkata, the central business district is small, while in Delhi the central business is virtually non-existent. The Mumbai central business district (the "Fort") may have the most intense collection of 19th century British commercial architecture in the world.

The Geographical Setting

The Mumbai urban area is on the west coast (Arabian Sea) of India in an area with a harbor, waterways and mountains. The original

westernized name of the city, Bombay, was derived from the Portuguese meaning good bay.

The municipality of Mumbai occupies a long peninsula to the west of the harbor and Thane Creek. There are a number of modest mountain ranges in the area, including Sanjay Gandhi National Park in Mumbai and Thane, the hills of Navi Mumbai and other mountains to the east. The peaks of these ranges are in the range of 1,500 to 2,000 feet (500 to 700 meters). In this regard, Mumbai is somewhat like the Los Angeles urban, with large areas of flat land interrupted by moderate sized hills, around which the urban area has developed. Mumbai, however, does not have the substantial mountain ranges that border Los Angeles on the north that reach 10,000 feet (3,000 meters).

An Urban Area of Corridors: Mumbai is an urban area of corridors (Figure 2). The northwest and northeast corridors emerge from the broad southern section of the city's suburban district which spans the peninsula south of Sanjay Gandhi National Park. The northwest corridor is served by the Western Railway and the Western Express Highway. The northeast corridor is served by the Central Railway and the Eastern Express Highway. The northwest corridor continues through Bhayandar and then out of the urban area, across Vasai Creek to Virar. At the municipality of Thane the northeast corridor splits into two. One is directed toward Bhiwandi. The other is a thin corridor to Kalyan-Dombivli, and then to Ulhasnagar, Ambarnath and Kurla-Badlapur. On the east side of the Thane Creek, another corridor leads southward through the eastern part of Thane to Navi Mumbai. The corridor continues to Panvel. Finally another corridor is developing along the east side of the hills on the eastern boundary of Navi Mumbai, which is developing to merge with the more northerly Thane to Kalyan corridor.

The Urban Form of Mumbai

Urban Area (Urban Agglomeration): The Mumbai urban area (Figure 1) has a population of 17,000,000 people, in a land area of 250 square miles (Table 1)⁶ for a population density of 68,000 per square mile (648 square kilometers, 26,200 residents per square kilometer). This makes Mumbai the second most dense urban area with a

population of more than 1,000,000 in the world, following Hong Kong (76,200 per square kilometer). The Mumbai urban area is approximately six times as dense as the Tokyo-Yokohama urban area, seven times as dense as the Paris urban area, and 13 times as dense as the New York urban area and 20 times that of density seeking Portland, Oregon. Mumbai is the 7th largest urban area in the world and the largest in India.

The international airport is located just south of Sanjay Gandhi National Park in the municipality of Mumbai and may be the most centrally located such airport among the world's megacities. There is discussion of building a new international airport to the west of Panvel, to the southeast of the municipality of Mumbai.

Municipal Corporation of Greater Mumbai:

The core city, Mumbai, is the capital of India's richest state, Maharashtra. Maharashtra is a large state, ranking third in the nation in land area, with approximately 115,000 square miles (310,000 square kilometers), approximately the size of Italy or Arizona. The state extends halfway across the sub-continent. It is the second most highly populated state in India, with a population of nearly 100,000,000,⁷ almost three times the population of California. Mumbai is the largest municipality in the world if the larger province level municipalities of China are excluded (Chongqing, Shanghai and Beijing⁸). The municipality had a population of 11.9 million according to the 2001 census.

The municipality of Mumbai is composed of two principal urban sections. The first is the island city, which is the original area of Bombay. It was originally composed of islands, which have now been connected. The island city is also "Mumbai City," a separate district (analogous to a US or English county or a European Union NUTS-3 jurisdiction) of the state. In this regard, Mumbai is like New York, which is composed of five state districts (counties). The island city covers only 30 square miles (78 square kilometers), has 3.3 million people and a population density of 111,000 per square mile or 43,000 per square kilometer. This is somewhat less than Hong Kong Island and Kowloon in Hong Kong. Nonetheless, this is exceedingly high density, well above the approximately 60,000 and greater per square mile

(25,000 per square kilometer) density of Manhattan and the ville de Paris (excluding the peripheral parks or bois). If cows, pigs and goats were counted, Mumbai would doubtless be the most dense urban area of any size.

Components of the Mumbai Urban Area

The balance of the Mumbai municipality is also a separate state district, called Mumbai Suburban. Mumbai Suburban, which is really not suburban because it is in the city limits, extends across the peninsula for a few miles beyond the Mahim Creek border with the island city. The wide southern sector of Mumbai Suburban is below the international airport and Sanjay Gandhi National Park... The urban portions of Mumbai Suburban have a population of 8.6 million and a population density of 73,000 per square mile (28,000 per square kilometer).

There are nearly 5,000,000 residents in the southern sector and 2.7 million residents in the northwest sector. The northeast sector is not as long as the northwest sector and has a population of approximately 1,000,000. A large share of the northeast sector is tidal flats along Thane Creek. The fastest growing sector of the municipality is the northwest, which added 41 percent to its population between 1991 and 2001. The southern suburban sector also grew strongly at 23 percent, while there was a 19 percent increase in the

northeast sector. The island city added five percent to its population and has more than regained losses that occurred between the 1981 and 1991 censuses.⁹

Suburbs: While Mumbai is the world's largest municipality by some accounts, its suburbs contain a relatively small share of the population, amounting to approximately one-third of residents.¹⁰

Most of the suburban population lives to the east. To the northeast, the municipality of Thane has 1,300,000 residents, while Kalyan-Domblivi has 1,200,000 residents. Bhiwandi, to the north of Thane, has a population of 600,000. The three municipalities to the south of Kalyan-Domblivi have a total of 750,000 residents. Across the harbor from Mumbai, the master planned municipality of Navi Mumbai has a population of approximately 700,000. Even with its planning, Navi Mumbai has intense poverty, with people living in tents and informal dwellings right next to new and under construction high rise-rise buildings. Mira-Bhayandar, directly to the north of the northwest suburban corridor has more than 500,000 residents. The population density of the suburbs is 49,000 per square mile (19,000 per square kilometer), which is probably the highest suburban density in the world. Near Panvel and east of Navi Mumbai, there is a large industrial area in Talaje.

Table 1
Mumbai Urban Area and Metropolitan Area: 2001

Sector	Population	Square		Square KM	Density
		Miles	Density		
Island City (Mumbai City District)	3,327,000	30	110,900	78	42,819
Mumbai Suburban District	8,588,000	117	73,402	303	28,340
Municipality of Mumbai (Subtotal)	11,915,000	147	81,054	381	31,295
Suburbs Outside Mumbai	5,085,000	103	49,369	267	19,061
Urban Area	17,000,000	250	68,000	648	26,255
Outside Urban Area	2,200,000				
Metropolitan Area	19,200,000				

Note: Municipality of Mumbai is urban portion only. Metropolitan area as defined by Forstal, Green & Pick

Metropolitan Area: The metropolitan area (labor market area) has a population of 19,200,000, according to Forstal, et al (above). The difference between the metropolitan area and urban area population represents the residents living in rural areas or exurban areas that are not a part of the continuous urbanization of Mumbai (Table 1).

Population Growth: Mumbai has experienced explosive growth in recent decades. From 1981 to 2001, the metropolitan area added nearly 8,000,000 residents, and added more than 4,000,000 between 1991 and 2001 (Table 2). The suburbs are now accounting for more than one-half of the growth. The suburbs are likely to

account for an even greater share of future growth, because greenfield land for urban expansion is becoming scarce in the municipality of Mumbai.

Some analysts have suggested that Mumbai will become the largest urban area in the world. This

would require substantial growth, since Mumbai is one-half the size of the largest urban area, Tokyo-Yokohama. Moreover, United Nations data indicates a falling growth rate that could lead to Mumbai losing its first place ranking in India to Delhi by 2015.

Table 2
Population Growth in the Mumbai Metropolitan Area: 1991-2001

Sector	Population Change	% Change	Share of Growth
Island City (District of Mumbai City)	152,000	4.8%	3.5%
Mumbai Suburban District	1,887,000	28.0%	43.0%
South	927,000	23.3%	21.1%
Northwest	795,000	41.7%	18.1%
Northeast	165,000	19.3%	3.8%
Municipality of Mumbai (Subtotal)	2,051,000	20.7%	46.8%
Outside Mumbai	2,336,000	67.7%	53.2%
Total	4,387,000	32.3%	100.0%

Metropolitan area as defined by Mumbai Metropolitan Regional Development Authority (MMRDA)

Pervasive Poverty

As noted above, the poverty of India and Mumbai is overwhelming. While Mumbai exhibits a wealth absent in Kolkata and not obvious in Delhi, the poverty is nonetheless pervasive. This is not just a western perspective. In her classic book *Rediscovering Dharavi*, Kalpana Sharma says:

There are practically no areas in the city where you can avoid the sight of a slum because the urban poor, or people forced to live in informal settlements, are half the city's population.

The Census of India found the same number 2001 --- more than one-half of the Municipal Corporation of Greater Mumbai population lives in slums. This slum population of 6,400,000 is nearly as large as the population of Greater London. Mumbai has a larger share of slum residents than Kolkata and three times that of information technology rich Bengaluru (Bangalore).

Of course there is plenty of wealth in Mumbai. There is "Bollywood," the world renown colony of film studios and movie stars. A much different reality, however, is revealed in the unguided tours of Mumbai not on the map to the stars homes.

The whole range of poverty is present. Perhaps the most fortunate are the residents who live in the informal structures that have been built on large tracts of land. Those built before 1995 have been granted official status and are not subject to demolition by the government. However, most of those built since that time have remained, despite a spate of demolitions through the years.

However, these are not slums by North American or Western European standards. They are far, far worse. The dwellings are often constructed of substandard materials, with roofs of flexible blue plastic sheeting, not unlike the materials used in manufacturing trash bags. Even worse, many of the slum dwellers live in dwellings made up of nothing more than sticks and plastic, while others live in tents. The condition of slum dwellers in Mumbai does not appear to be worse than in Delhi or Kolkata, but the physical extent of these shantytowns is much greater.

Then there are the pavement ("sidewalk" in American English) dwellers. Tens of thousands of such informal dwellings line many of the streets of Mumbai. Kalpana Sharma cites an estimate from 1999 indicating that 300,000 people were pavement dwellers. That's nearly as many people as live in the cities of Geneva or Wellington.

These dwellings are generally more humble than the more permanent yet essentially temporary dwellings that populate the shantytowns. But even this is not the bottom rung. Similar dwellings are located along the railroad tracks, though the closest thousands have been demolished because they were a safety hazard. Sharma says that there were 28,000 railway right-of-way dwellings before the demolition began --- this would equate to at least 140,000 people. There are the tent dwellers, who can be found in much smaller communities, but spread throughout the area. Tent dwellers will even be found in the planned new town of Navi Mumbai (New Mumbai).

There is yet another, lower level --- the people who live on the streets and do not even have tents for shelter. The street sleepers are not limited to the pavements or sidewalks, some of them actually sleep on the streets. Literally rows and dozens of people bunk down for the night along Jawaharlal Nehru Avenue in the Santa Cruz East neighborhood, just west of the international airport. Unlike North America or Western Europe, the homeless who sleep on the street are often families or women with children.

Then there are the squatters who set up their houses wherever they can find land. This is particularly offensive to planners and environmental lobby groups, who would apparently rather people have no shelter than shelter that does not meet their specifications. An environmental group played the lead role in a program that ended with demolishing the homes of 300,000 in Sanjay Gandhi National Park.

Again, according to Sharma, some of Mumbai's slums have ratios of up to 8,000 people per water tap. This compares to more water taps that people in most houses of the affluent West and Japan.

All of this co-exists with the luxury condominiums that are sprinkled throughout the urban area, especially within the municipality of Mumbai. The shantytowns climb up hills to middle-income and luxury condominium buildings. Tent dwellers live on lots adjacent to the condominiums. The homeless sleep outside the condominiums. A professional friend, who grew up in Nagpur (eastern Maharashtra) told me that it is as if separate societies live in parallel dimensions --- with one-another and yet with little contact. This

appears to be the case and is perhaps not surprising given India's history of extreme social stratification.

There are a number of uncompleted high-rise residential buildings in Mumbai. In some cases, it appears that squatters have established themselves in these building shells. Hanging laundry indicates their presence.

Thus, Mumbai only not has the island city at its core, but it contains comparatively small islands of affluence surrounded by pervasive poverty --- an archipelago of affluence in a sea of poverty.

Asia's Largest Slum: Dhavari or Airport East?

Dharavi, in Mumbai, is popularly known as Asia's largest slum. Dharavi covers less than one square mile (2.5 square kilometers) and hugs Mahim Creek near the northwest corner of the island city. Robert Neuwirth, in *Shadow Cities: A Billions Squatters, A New Urban World*, reports that this slum is vibrant, not a dead area. Sharma says that it is as much an industrial estate and a slum, because of all the businesses that operate within its confines. There are thousands of businesses, just as in Rio de Janeiro's vibrant Rocinha¹¹ of in the Kowloon Walled City of Hong Kong's before it was demolished in the early 1990s.¹² Sharma further cites a population of 1,000,000, which equates to more than 1,150,000 persons per square mile. At this density, all of California's population could be housed within about a three mile radius of Los Angeles City Hall. Dharavi may be the most densely populated place on earth. Hong Kong's most dense, but much smaller Tsuen Wan constituency area has a slightly lower density than Dharavi.

However, Dharavi may not be the largest slum in Mumbai, much less Asia. Not far across Mahim Creek is a vast and larger slum that sprawls over a number of districts. It stretches from the eastern runway of Mumbai International Airport and covers nearly two square miles (five square kilometers), more than double the land area of Dharavi.

We will call the slum is called "Airport East." There are aerial photographs of this area at the end of the article and Figure 3 shows the outline of the slum. The Airport East slum has a large

core, with fingers stretching out from the eastern side. The slum extends from the airport northward to near the crest of the hills, then to the east and northward along the eastern hills of Sanjay Gandhi National Park. Finally, the slum reaches the right of way of the Central Railway near Ghatkopar West. Mumbai street maps provide little detail of this area or the other shantytowns, because there are really few if any streets in the sense that the term is normally understood. There are relatively narrow walkways through the area.

Our examination of satellite photographs, renders an estimate of 300 to 400 houses per acre (800 to 1,000 per hectare). Not even Britain's urban planners require this density. If it is conservatively assumed that the average number of residents per dwelling is 5.0, then the population of Airport East would be between 1,000,000 and 1,250,000 -- about the size of the Adelaide, Lyon or Calgary urban areas. On the other hand, if Airport East is as dense as Dharavi, the population could exceed 2,000,000.

This would indicate density for Airport East of 500,000 to 625,000 per square mile (200,000 to 250,000 per square kilometer). This is below the highest densities in Hong Kong. Seven Hong Kong neighborhoods (constituency areas) have densities above 625,000 per square mile, with the highest at more than 1,125,000 per square mile (425,000 per square kilometer).¹³ However, Hong Kong's constituency areas are much smaller in land area and population than Mumbai's Airport East.

In Hong Kong, the high density occurs because people live in high-rise buildings, while much of the high density Mumbai development is single story. The second difference is that Hong Kong's highest densities occur at high-income world standards, in sharp contrast to the desperate situation in Mumbai.

Urban Sprawl: Meaninglessness of the Term

Mumbai provides a good example of why the term "urban sprawl" is of little value in serious analysis. Various sources refer to the sprawl of Mumbai or its sprawling slums. As is indicated above, Mumbai is the second most dense large urban area in the world, and is thus the second *least*

sprawling. Hong Kong, the most dense urban area, has also been termed as sprawling. The term urban sprawl is rather like the air pollution of Mumbai, denoting a fog that defies understanding.

Why People Live in Slums

Slums are not attractive and certainly the affluent population of the West, Japan or South Korea would not live in them. However, for the people who live in the slums, life is usually better than where they came from. Indeed, that is why they came. Just as people have left the impoverished northeast of Brazil to live in the favelas of Rio de Janeiro and Sao Paulo, people from rural areas and crowded into Indian urban areas seeking better opportunities.

Large urban areas are significant attractors of people from the even poorer rural areas. Slums and shantytowns are necessary in poorer countries and have existed in the United States and Europe within the last century. The hope is that economic progress accelerates and that the vast majority of Mumbai's residents (and Delhi's and Kolkata's) will live in relative comfort in not too many decades. The challenge in India, however, is likely to be far greater than in nations with lesser poverty rates. The risk of Mumbai's Shanghai envy is that part of Mumbai will become Shanghai-like, while most of it will be more like Lagos.

Luxury in Filth

One of the most striking features of India's urban areas is, frankly, the filth. This is evident throughout. There seems to be garbage virtually everywhere around the informal dwellings. However, the filth is perhaps most surprising on middle market and luxury high-rise condominium buildings. There are many buildings of not very great age that are covered, in large measure, by dirt on the outside. It is as if no attention is given to the commonly owned space of these buildings. Shaashi Thoroor, in his classic book on India since independence (*India: From Midnight to the Millennium*) details this phenomenon, saying that middle and upper income Indians maintain spotless private spaces (apartments and condominiums) in these buildings, surrounded by filth, not only on the outside but also in interior common spaces. The filth is not so evident in the very high-rise buildings --- 20 stories and more ---

of Mumbai, but most of these are very new and it remains to be seen whether these structures will be kept clean.

Detached Housing

The Indian megacities have single family detached housing, but it must be searched for. It is largely

the province of the rich and may be in less than good repair. The contrast with Jakarta, Indonesia's capital, which has a similar income level to the Indian megacities could not be more stark. In Jakarta, there are many new, attractive detached housing developments throughout the suburbs. Not so in Kolkata, Delhi or Mumbai.

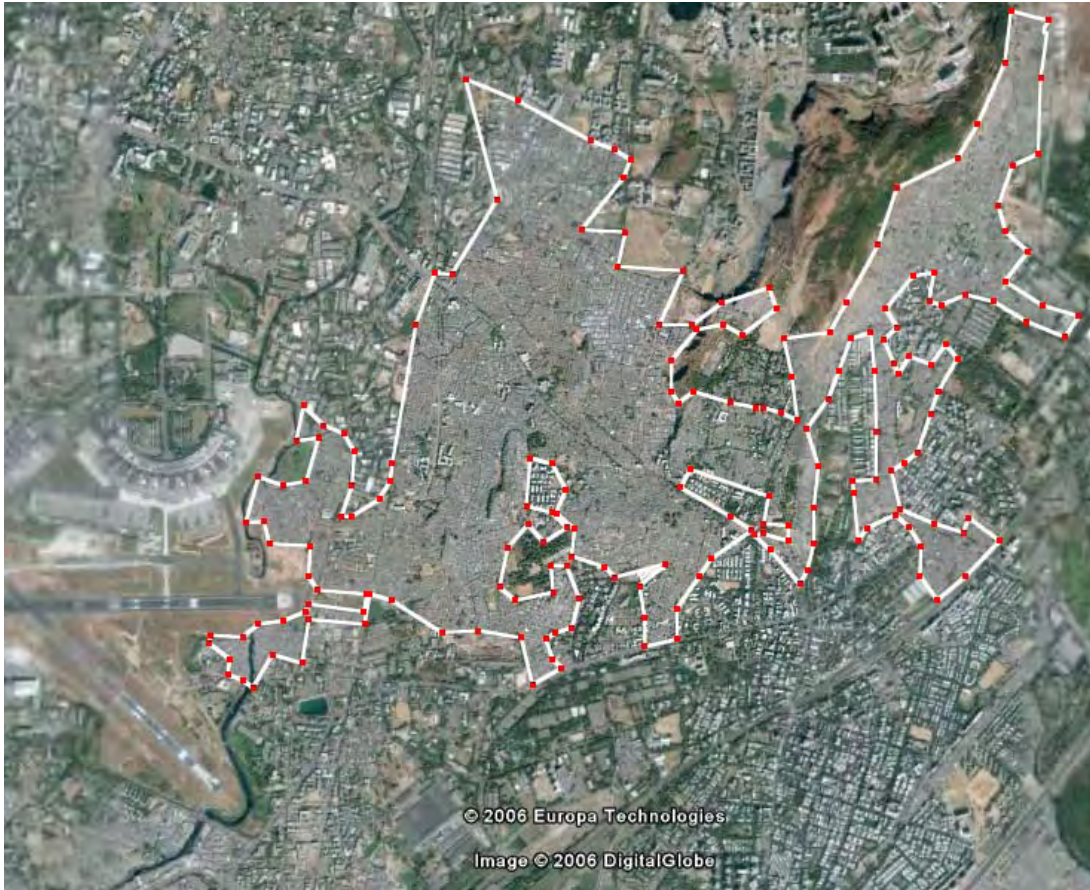


Figure 3:
Airport East:
Asia's Largest Slum?

Newspapers

India is a Nirvana of daily newspapers. There are the local daily newspapers, but there are also significant national newspapers, such as *The Times of India*, *The Hindustan Times*, *The Hindu* and the *Indian Express*. In this respect, India is like England, with London's four national quality daily newspapers. The Indian national newspapers are what *The New York Times* would like to be, prevented by its New York City focus. They are what *USA Today* does not even try to be. India's

panoply of journals makes it easy to spend too much time each morning in the hotel reading the news.

The Food

One of the great delights of India is the food, especially if one likes spicy food. The biggest problem is understanding what is on the menu. There are restaurants where one can choose a great variety of food cooked behind a counter resembling a Western fast food restaurant. There

are also many stands selling hot food on streets and so long as it is cooked well, there should be no difficulty. My last meal, of street food, cost under \$0.25 and was very good. Of course, the water should be avoided, except bottled.

Pervasive Pollution

There are thousands of auto-rickshaws that provide taxi service, though they are not permitted in central Mumbai. There are also thousands of conventional taxicabs. Automobile ownership and motorcycle use is growing rapidly. Emission controls are insufficient and Mumbai has some of the world's worst air pollution. Like the poverty, the air pollution is pervasive. Los Angeles, at its worst, was simply not in the same league.

In the Victoria Terminus area, air pollution can burn the eyes as surely as on Mahatma Gandhi Road in Kolkata. Unlike Delhi, most of the buses and auto-rickshaws do not operate on compressed natural gas (CNG), which makes the air pollution far worse.

Transport

Because of its low income, Mumbai is dependent upon walking and public transport. There are estimates that more than 85 percent of motorized travel in Mumbai is by public transport, which could mean that Mumbai has the world's highest public transport market share. Each weekday, more than 6,000,000 riders are on the trains and another 4,500,000 on buses operated by the municipality of Mumbai (operated by the municipal utility, "BEST").

The commuter rail services operate first and second-class services. The accommodations are similar, but the prices significantly different. A second-class ride is likely to cost 1/10th that of a first class ride. Second class is routinely crowded to the point that people hang out the doors. First class can be crowded as well, though less frequently. Exclusive compartments are also provided for women. It appears that the average wait time for purchasing a ticket is 30 minutes or more; longer than the average commuter in Los Angeles takes to get from home to work.

Informal dwellings are located along much of the railroad alignments. In recent years, a program has

been undertaken to limit the encroachment of informal dwellings on the railroad right-of-way itself, and the remnants of destroyed dwellings can be seen in many locations.

Despite large public transport ridership, Mumbai does not have a Metro (subway or underground). The commuter rail system carries all of the passengers and is operated by two divisions of Indian Railways, a state owned corporation. The Western Railway operates to northern suburbs, through northwest Mumbai, with its principal terminal station at Churchgate, in central Mumbai. The Central Railway has its central Mumbai terminus at Victoria terminus, one of the world's most renown railway stations. The Central Railway's principal line operates northerly through northeast Mumbai and continues to the northern and eastern suburbs. The Central Railway also has the Harbor Line that operates across the bridge to Navi Mumbai. Finally, the Central Railway also provides some service along the Western Railway alignment into northwest Mumbai.

Traffic congestion is already world class and conditions are likely to get much worse. Tata Motors, India's largest motor vehicle manufacturer, intends to develop a car that will sell for under \$2,500 (10,000 rupees), which will make automobility available to a much larger number of people. As has been the experience elsewhere in the world, it is likely that Indian households will purchase cars as soon as they can afford them, if not sooner.

In the longer run, this will provide a significant challenge to Mumbai, which if addressed by conventional urban planning practice will lead to an even greater nightmare. Mumbai is simply too dense for the automobile. At the same time, however, despite its very high density, Mumbai is not dense enough to be able to rely on public transport and become an affluent urban area.

Mumbai's only hope for improving its environment and handling the inevitable explosion of automobile use will be to allow the urban area to become far larger in geographical expanse, with much lower densities and far more employment and commercial decentralization. Fortunately, there is adequate land in the Mumbai area for such an expansion to occur, especially beyond the hills east of Navi Mumbai.

Nonetheless, public transport expansion is necessary and appropriate. There are plans to implement rapid bus services in the municipality of Mumbai, similar to the programs adopted in Jakarta, Porto Alegre and Curitiba. Officials will do well to not follow the Delhi example, where a grossly expensive Metro system was built and requires a public subsidy per annual passenger that is greater than the average per capita income of India.¹⁴

There is also the potential to further upgrade the Western and Central Railways, which have very wide rights of way and already provide a level of service superior to that of a Metro.

Mumbai in India and the World

The contrast among the Indian megacities could not be greater. Despite all of its problems, Mumbai appears to be an urban area of the future. Even if Delhi should emerge as India's largest urban area, Mumbai will continue to be India's principal urban area for a long time to come. As for becoming Shanghai or international class, that will be more difficult. Today's archipelago of affluence that sits in a sea of poverty will need to merge into affluence, just as the islands that formed the Mumbai peninsula grew together. It will be a difficult task. Cows, pigs and goats do not roam Shanghai. Nor will they roam in a Mumbai that has become Shanghai.

¹ Richard L. Forstall, Richard P. Green and James B. Pick, *Which Are the Largest: Why Published Populations for Major Urban Areas Vary so Greatly*. This is the only reliable list of international metropolitan areas that uses consistent standards. It includes only the 20 largest world metropolitan areas.

http://www.uic.edu/cuppa/cityfutures/papers/webpapers/cityfuturespapers/session3_4/3_4whicharethe.pdf.

² The name of Bombay was changed to Mumbai in 1997.

³ See *Kolkata: As Bad as Its Reputation*, <http://www.rentalcartours.net/rac-kolkata.pdf>

⁴ See *Delhi: Politics and Poverty*, <http://www.rentalcartours.net/rac-delhi.pdf>

⁵ See: *Shanghai: Big Changes Ahead*, <http://www.demographia.com/rac-shanghai.pdf>, *Beijing: Fast Track to Prosperity*, <http://www.demographia.com/rac-beijing.pdf>, *Shenzhen: Start of China's Future*, <http://www.rentalcartours.net/rac-shenzhen.pdf>, *Guangzhou: Pearl River Renaissance*, <http://www.demographia.com/rac-guangzhou.pdf>, and *Tianjin: China's Philadelphia*, <http://www.demographia.com/rac-tianjin.pdf>.

⁶ *Demographia* urban area. Includes the Census of India Mumbai urban agglomeration and the Bhiwandi urban agglomeration and Panvel. The Census of India places the land area at more than 450 square miles. However, this includes large tracts of rural land, particularly in Mumbai and Thane (Sanjay Gandhi National Park) and Kalyan-Dombli. The *Demographia* urban area includes only continuous urbanization, excluding rural areas of municipalities. See *Demographia World Urban Areas* (<http://www.demographia.com/db-worldua.pdf>).

⁷ The largest national subdivision (state or province) in the world is India's state of Uttar Pradesh, with nearly 170,000,000 residents.

⁸ The fourth province level municipality of China, Tianjin, has a smaller population than the municipality of Greater Mumbai.

⁹ Detailed ward and sector population data for Mumbai is at <http://www.demographia.com/db-mumbaidistr91.htm>.

¹⁰ By comparison, nearly 80 percent of the Paris population is in the suburbs, more than two-thirds of the Kolkata population is in the suburbs and 60 percent of the New York population is in the suburbs.

¹¹ See: *Rio de Janeiro: City of Rich and Poor*, <http://www.rentalcartours.net/rac-rio.pdf>.

¹² The Kowloon Walled City is reported to have had a population density of as much as 5,000,000 per square mile (2,000,000 per square kilometer). See: *Hong Kong: Like No Other*, www.demographia.com/rac-hk.pdf.

¹³ See *Hong Kong Constituency Areas Over 500,000 per Square Mile Density: 2001*, <http://www.demographia.com/db-hkca.htm>.

¹⁴ http://www.fromtheheartland.org/blog/2006/10/delhi_metro_subsidies_more_than.php#more.

Note on Hotels

Hotels in the three megacities of India are outrageously expensive --- perhaps two to three times what would be expected for the same quality in China, Indonesia or Thailand.

We stayed at a purportedly “5-star” hotel in **Kolkata**, the **Hindustan International** near the Maidan. Our impression was that it might have been a 5-star hotel at one time, but a long time ago. Worse, the hotel more than doubled the price that had been agreed for a sightseeing driver (the overcharge has since been reversed by the credit card company), and attempted to collect more than \$100 for *toll-free* telephone calls. The basic, local per call charge was more than \$3.00 (Rs 150). *Our recommendation is to avoid the Hindustan International Hotel in Kolkata.*

We decided to try lower rated hotels (2-star and 3-star) in Delhi and Mumbai, reasoning that we could always move to a more costly hotel if unacceptable. The results were quite pleasing. In **Delhi**, we stayed at the **Clark International Hotel** near Connaught Place. The service was at least as good as at the Hindustan International. Drivers were provided at the agreed price, which was considerably less than the rate agreed in Kolkata (much less the higher price actually charged). In **Mumbai**, we stayed at the **Midland Hotel** in Santa Cruz (near the airport). The service was also at least as good as at the Hindustan International and drivers were provided at prices well below the agreed price in Kolkata (much less the higher price actually charged). The price of a telephone call was Rs. 4 per minute, meaning that one would need to talk for more than 35 minutes on the phone at the Midland Hotel to be charged as much as the Hindustan International charges simply for connection. Both hotels were completely safe.

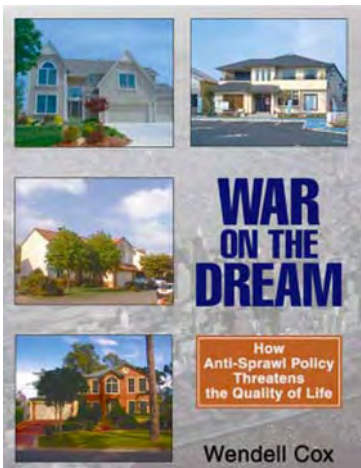
The lower driver rates in Delhi and Mumbai are all the more surprising, since Kolkata is far poorer than the other two urban areas and should have lower not higher rates. The hotels with a lower star rating (2-star or 3-star) are recommended, though it is useful to examine reviews, which are on the hotel booking service internet sites. In all three places, there was also the advantage of being located in the midst of local street life, which is indicated by pictures on the respective rental car tours. While one must be careful in any crowded environment, there appeared to be no safety problem, day or night.

Revision Note:

This Rental Car Tour was originally issued under the name Mumbai: First and Third Worlds Together (26 October 2006)

Additional Photographs Follow

- Arrival and Travel
- Airport East: Asia's Largest Slum?
- Northwest Mumbai Municipality
- Central Mumbai Municipality (Island City)
- Northeast Mumbai Municipality
- Suburbs of Mumbai
- Navi Mumbai (Suburb: Planned City)



War on the Dream

How Anti-Sprawl Policy Threatens the Quality of Life

By Wendell Cox

To order:

http://www.iuniverse.com/bookstore/book_detail.asp?issbn=0595399487

Summary and Chapter Titles:

<http://www.demographia.com/wod1.pdf>

Urban Tours by Rental Car: About the Series

Urban Tours by Rental Car offers perspectives on urban development obtained by automobile tours through urban areas. Rental cars are not the favored method for visiting cities, especially those outside one's own country. Instead, tourists and urban planners favor packaged tours or local public transport systems. Both are splendid ways for seeing the city as it used to be --- the very reason for most tourist visits. The historical core areas contain monuments, prime government and religious edifices and quaint neighborhoods that are often centuries old. This is particularly important to tourists from the newer urban areas of the American, Canadian or Australian West, where history extends not far before World War II. It is further understandable that few tourists travel thousands of miles to see the newer suburban areas that look very much like home. But most tourists do not profess to be students of the urban area.

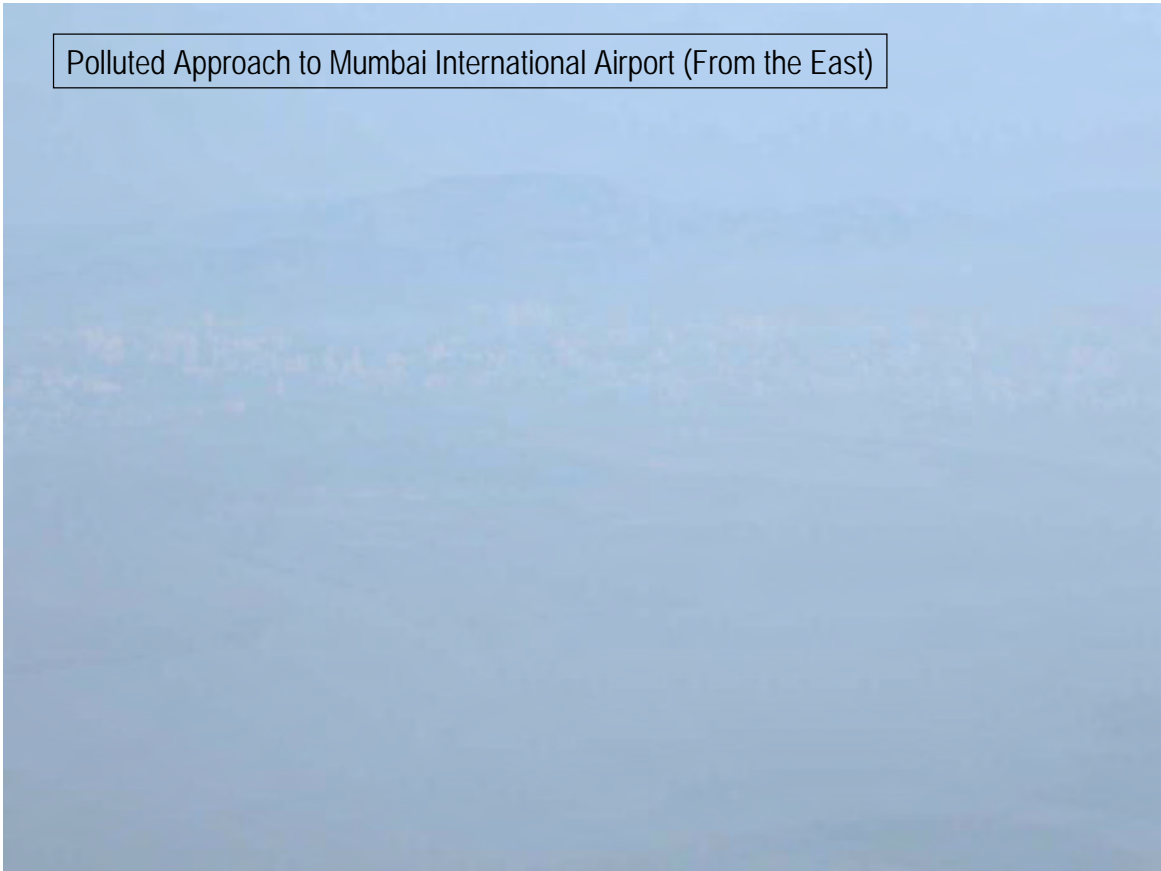
For the urban planner interested in understanding the whole urban area, it is not enough to study the core alone, regardless of its architectural attractiveness, romanticism, history or affirmation of an individually preferred life style. No one, regardless of the depth of their education can develop reliable conceptions from an unrepresentative sample, and urban cores are the very essence of unrepresentative samples. Both public transport and packaged tours miss the larger part --- the expanse of sprawling residential and business development that rings virtually all major urban areas. They may be of little interest to many urban planners, but they should be.

Stripping away regional architectural facades, one might as well be in the suburbs of Phoenix, Portland, Perth or Paris. Here, the automobile is king, because no public transport system has been developed that can effectively serve destinations outside the core (at least at a price any society can afford). While public transport market shares are higher in European suburban areas than in the New World, much of the difference is attributable to lower incomes and less automobile access. Indeed, public transport's principal weakness, lack of automobile competitiveness, is itself a contributing factor to the rising motorization occurring from the suburbs of Copenhagen and Nagoya to the suburbs of Lagos and Mumbai. To oversimplify this phenomenon as being a "love affair with the automobile" is the equivalent of saying that Singaporeans or Brazilians have a love affair with air conditioning. Human beings prefer comfort to discomfort and they prefer free time to time over which they have no control.

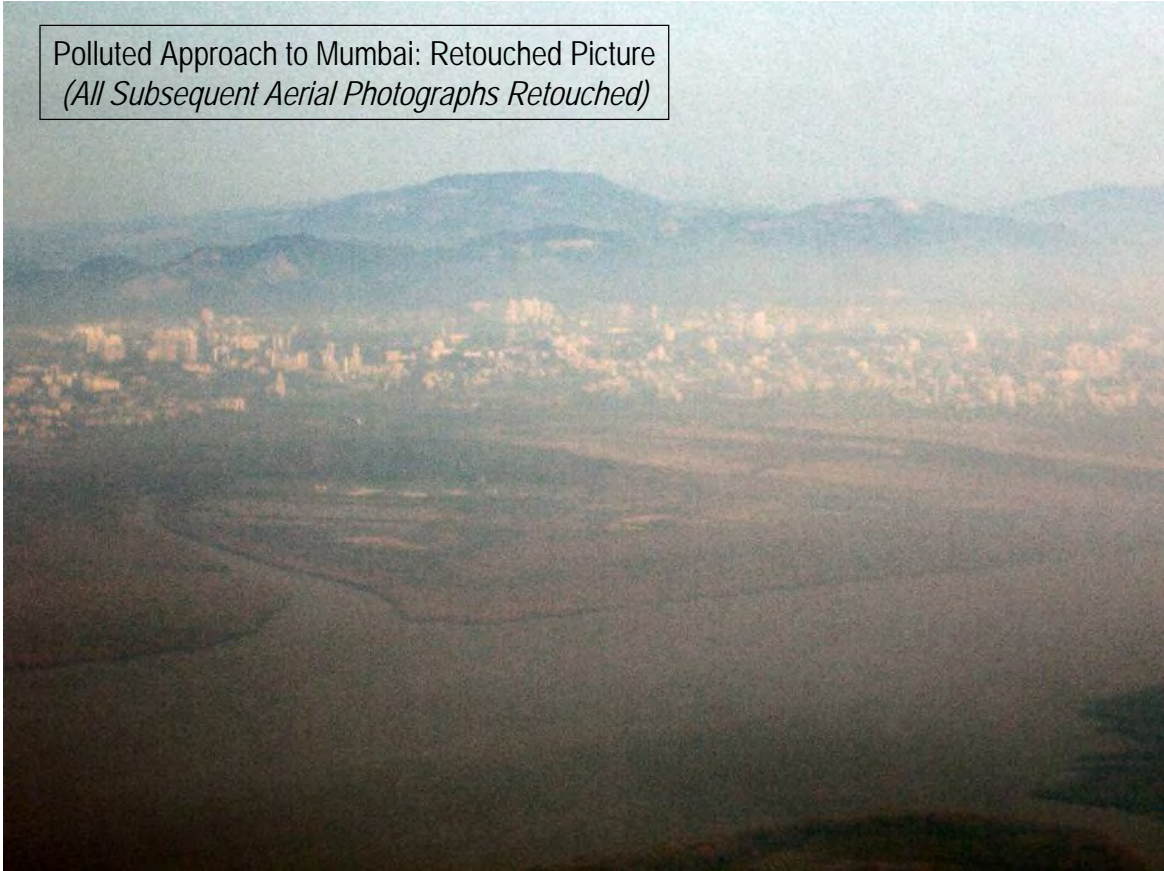
It is no wonder that tourists return to the United States thinking that all Paris looks like the second arrondissement (less than one percent does) and that urban planners think all of Milan looks like the architectural treasures that surround the Cathedral. In fact, the sprawling suburbs of Europe, Japan, Canada and Connecticut resemble one another in many ways. For any seeking to study the urban area in its entirety --- not just the favored haunts of core-dwelling elites --- there is no alternative to "getting behind the wheel." Thus, *Urban Tours by Rental Car*

ARRIVAL & TRAVEL

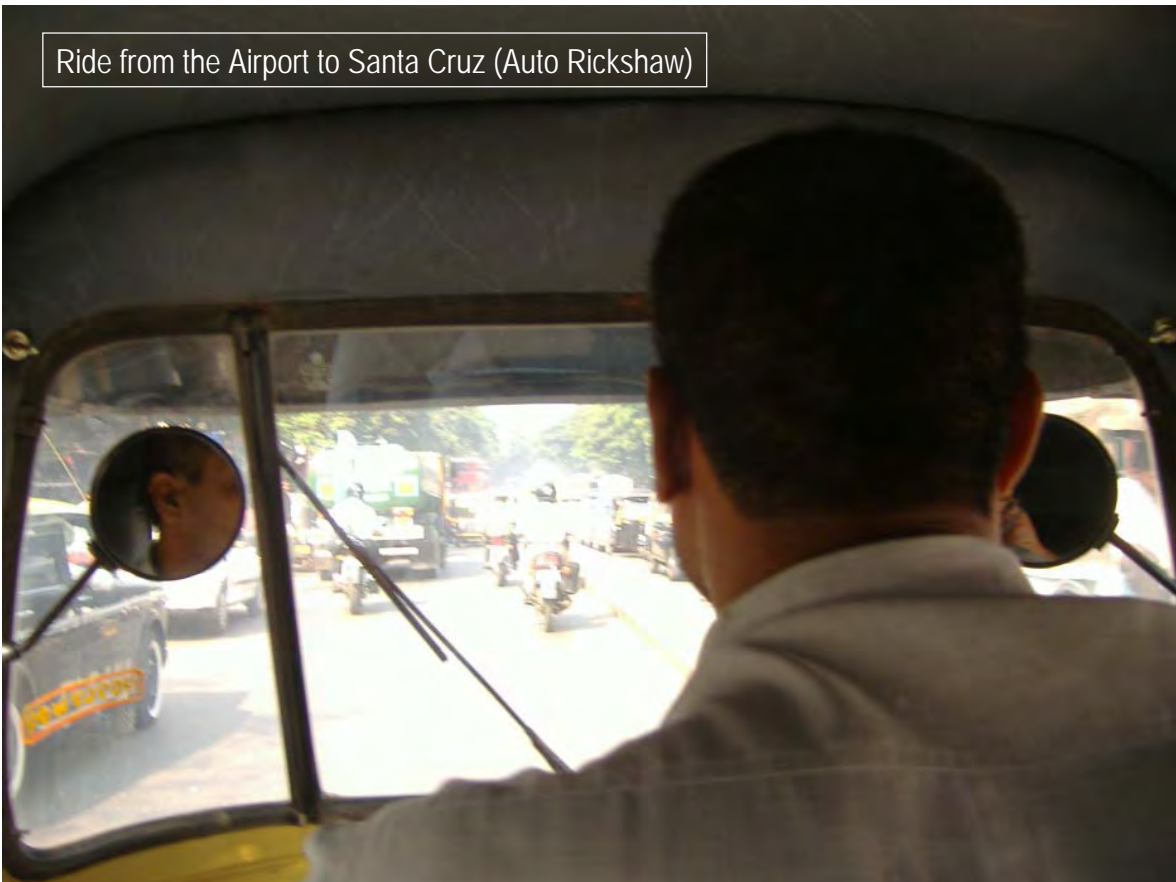
Polluted Approach to Mumbai International Airport (From the East)



Polluted Approach to Mumbai: Retouched Picture
(All Subsequent Aerial Photographs Retouched)



Ride from the Airport to Santa Cruz (Auto Rickshaw)





Taxicab Decorated for Diwali



First Class



<http://creativecommons.org/licenses/by-sa/2.5/>

AIRPORT EAST SLUM (Asia's Largest Slum) MUMBAI MUNICIPALITY NORTHEAST



Mumbai: NE

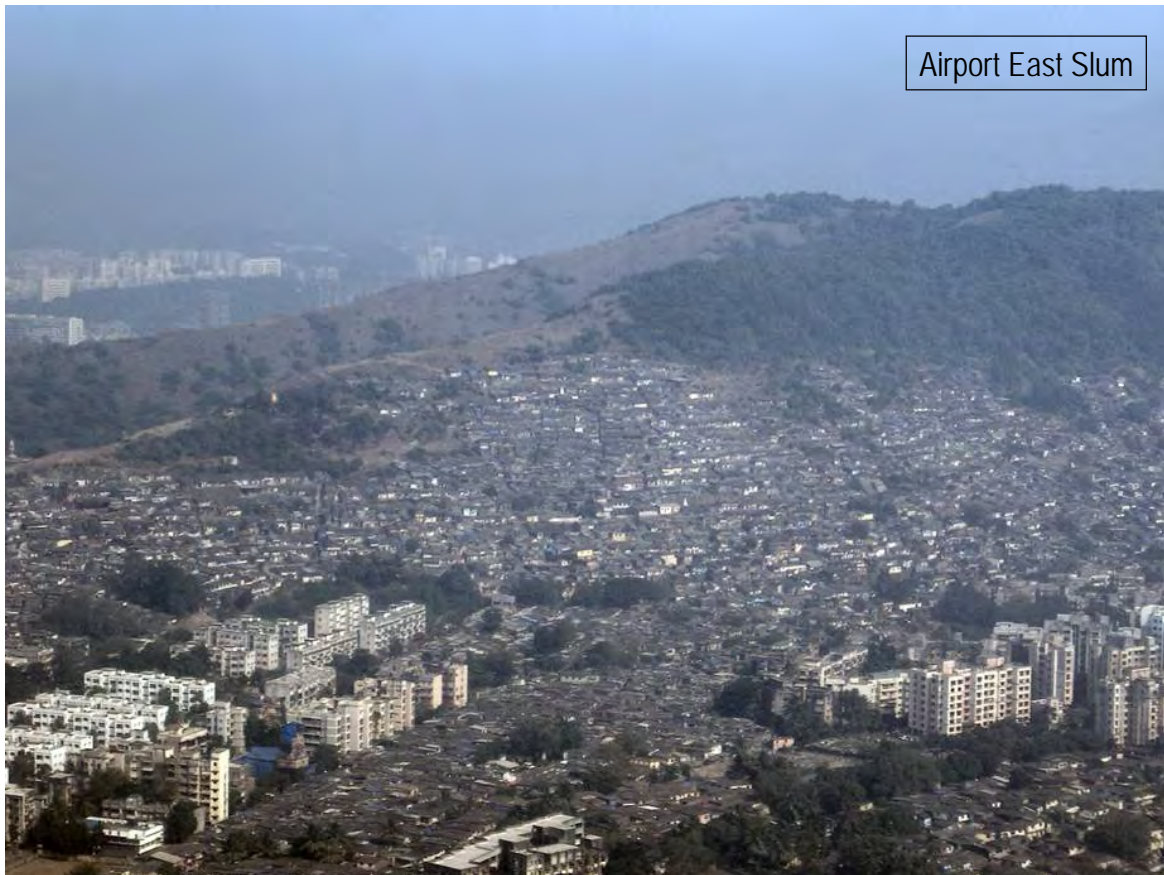


Airport East Slum
Affluent Archipelago in a Sea of Poverty

Airport East Slum



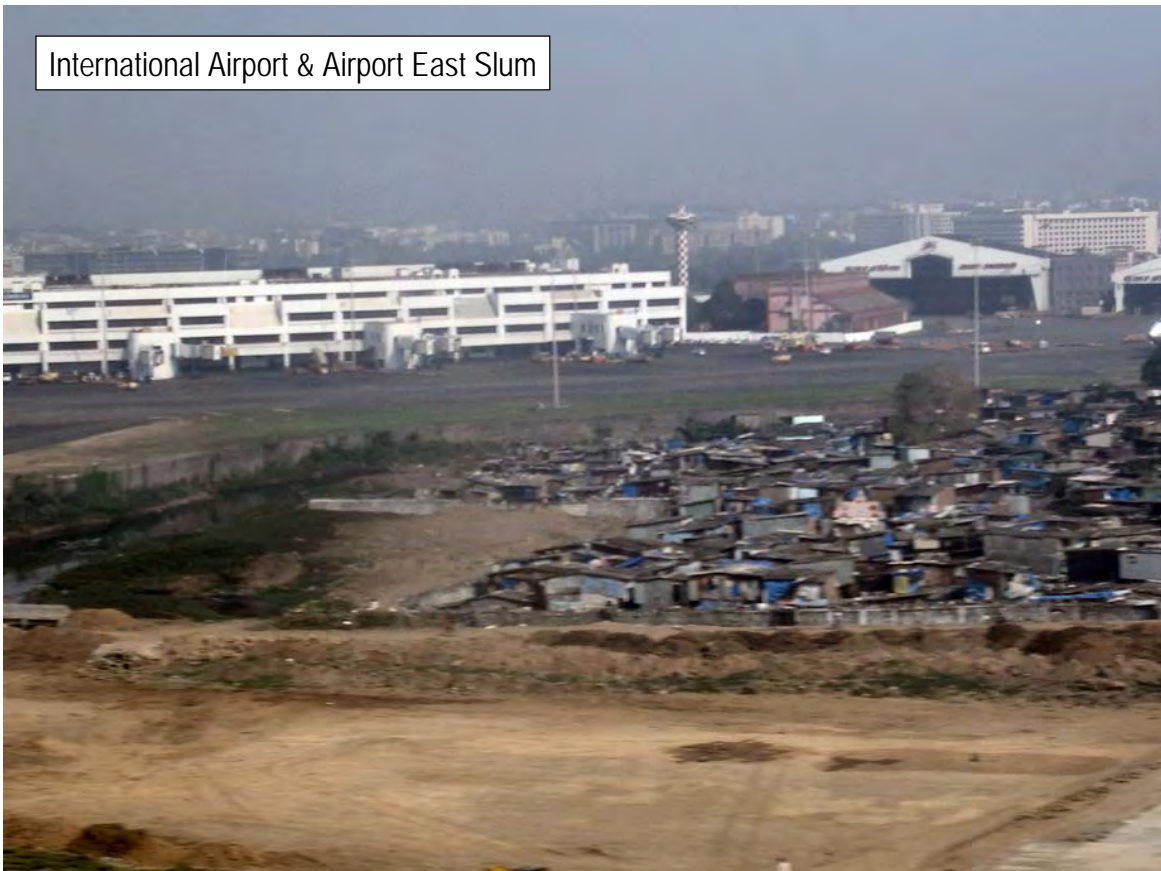
Airport East Slum







Airport East Slum



International Airport & Airport East Slum

NORTHWEST MUMBAI MUNICIPALITY



Outside Hotel
Santa Cruz District



Outside Hotel
Santa Cruz District



Mumbai: NW: Santa Cruz Station: Western Railway

Mumbai: NW: Santa Cruz Station: Western Railway



Mumbai: NW: From the Western Railway





Auto Rickshaws Under Western Express Highway



Western Express Highway



Western Express Highway: Frontage Road



Western Express Highway: Frontage Road

Condominium & Taxi



Western Express Highway



Residential Building: Mumbai NW



Mumbai NW: Informal Dwellings & Condominiums





Mumbai NW: Informal Dwellings & Condominiums



Mumbai: NW



Mumbai: NW



Mumbai: NW: From the Western Railway



Mumbai: NW: From the Western Railway



Mumbai: NW: North on the Western Railway from Santa Cruz



Mumbai: NW: From the Western Railway



Mumbai: NW: Slums along the Western Railway



Mumbai: NW: From the Western Railway



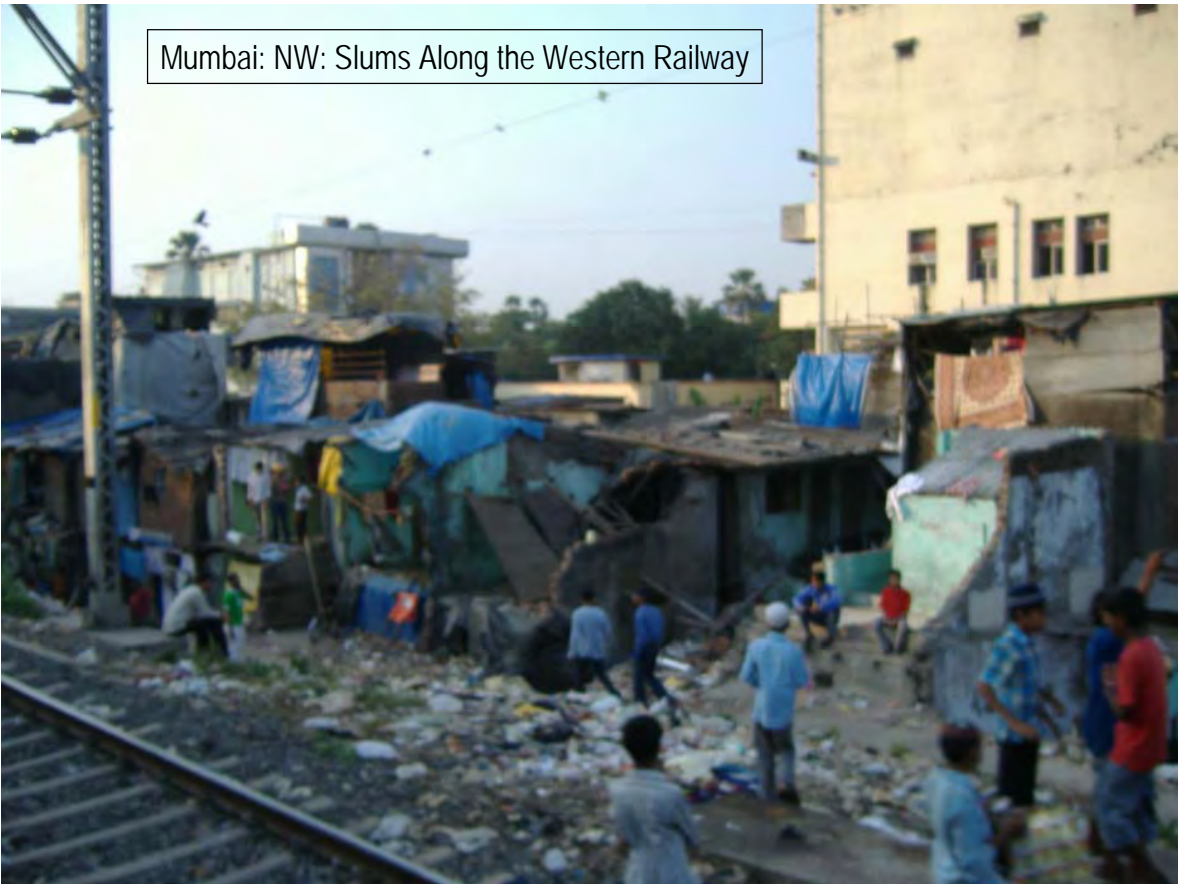
Pavement Dwellings along the Western Railway



Mumbai: NW: Slums Along the Western Railway



Mumbai: NW: Slums Along the Western Railway



Mumbai: NW: Slums Along the Western Railway



Mumbai: NW: From the Western Railway



CENTRAL MUMBAI MUNICIPALITY (ISLAND CITY)





Dharavi Area



Dharavi Area

Dharavi Area



Dharavi Area



Bandra Kurla (Edge City Near Dharavi)



Residential Building & Slum





Mumbai: Central



Mumbai: Central

Mumbai: Central



Mumbai: Central



Mumbai: Central



Mumbai: Central



Mumbai: Central



Mumbai: Central



Mumbai: Central



Mumbai: Central

Taj Hotel (Central)



Gateway to India (Central)



Mumbai: Central



Victoria Terminus (Central)



Victoria Terminus: Central Railway



Victoria Terminus





Victoria Terminus



City Hall

Victoria Terminus & City Hall



Victoria Terminus:
Post Office





In Front of Post Office



Western Railway Headquarters (Churchgate)

Mumbai: Central



Mumbai: Central





Mumbai: Central: Maidan



Mumbai: Central

Mumbai: Central



Mumbai: Central



Mumbai: Central (Colaba)



Mumbai: Colaba (Central)
Slum Across the Street



Mumbai: Central



Mumbai: Central



Mumbai: Central



Mumbai: Central



Mumbai: Central



Mumbai: Central





Mumbai: Central



Mumbai: Central

Mumbai: Central



Mumbai: Central



Mumbai: Central



Mumbai: Central



Mumbai: Central



Mumbai: Central

Mumbai: Central: Dadar



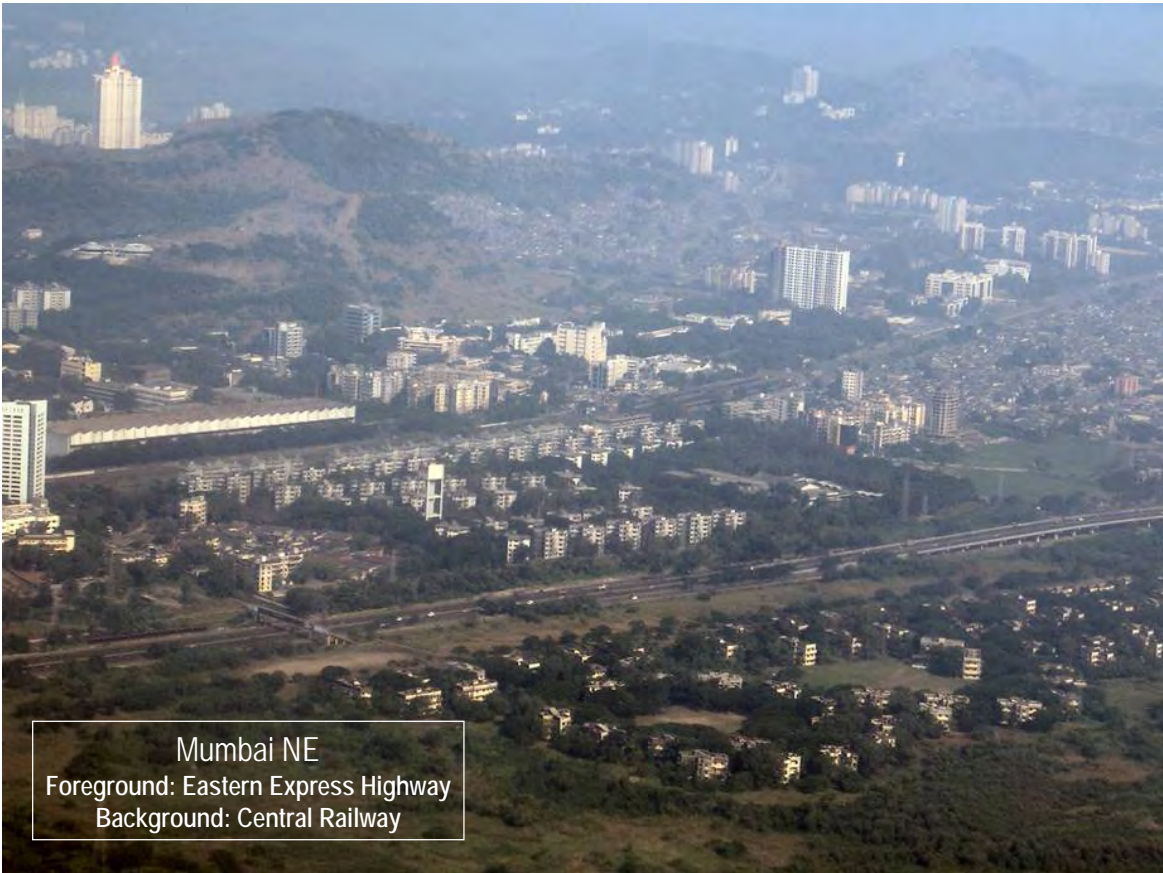
Mumbai NW: Informal Pavement Dwellings along Western Railway





Mumbai: Western Railway
At Marine Lines

NORTHEAST MUMBAI MUNICIPALITY



Mumbai NE
Foreground: Eastern Express Highway
Background: Central Railway



Mumbai: NW

From the Central Railway



NE Suburbs: From the Central Railway





Central Railway
Mumbai NE



Mumbai: NE



Mumbai: NE



Mumbai: NE

Mumbai: NE



Mumbai: NE





Mumbai: NE



From the Central Railway

Mumbai NE: From the Central Railway



Mumbai NE: From the Central Railway



SUBURBS OF MUMBAI



NE Suburb: Thane



NE Suburb: Thane



Vasai Creek: NE Suburb: Thane



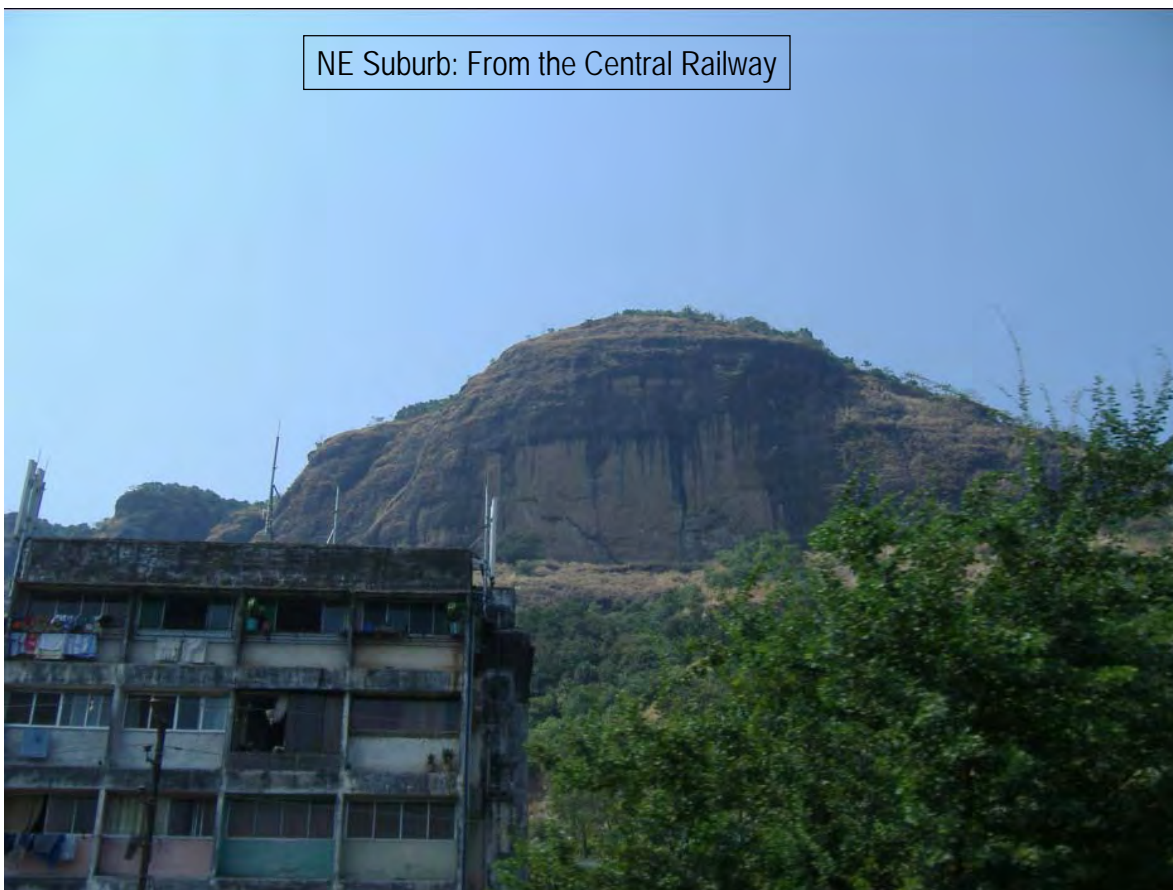
Central Railway: Dombivli

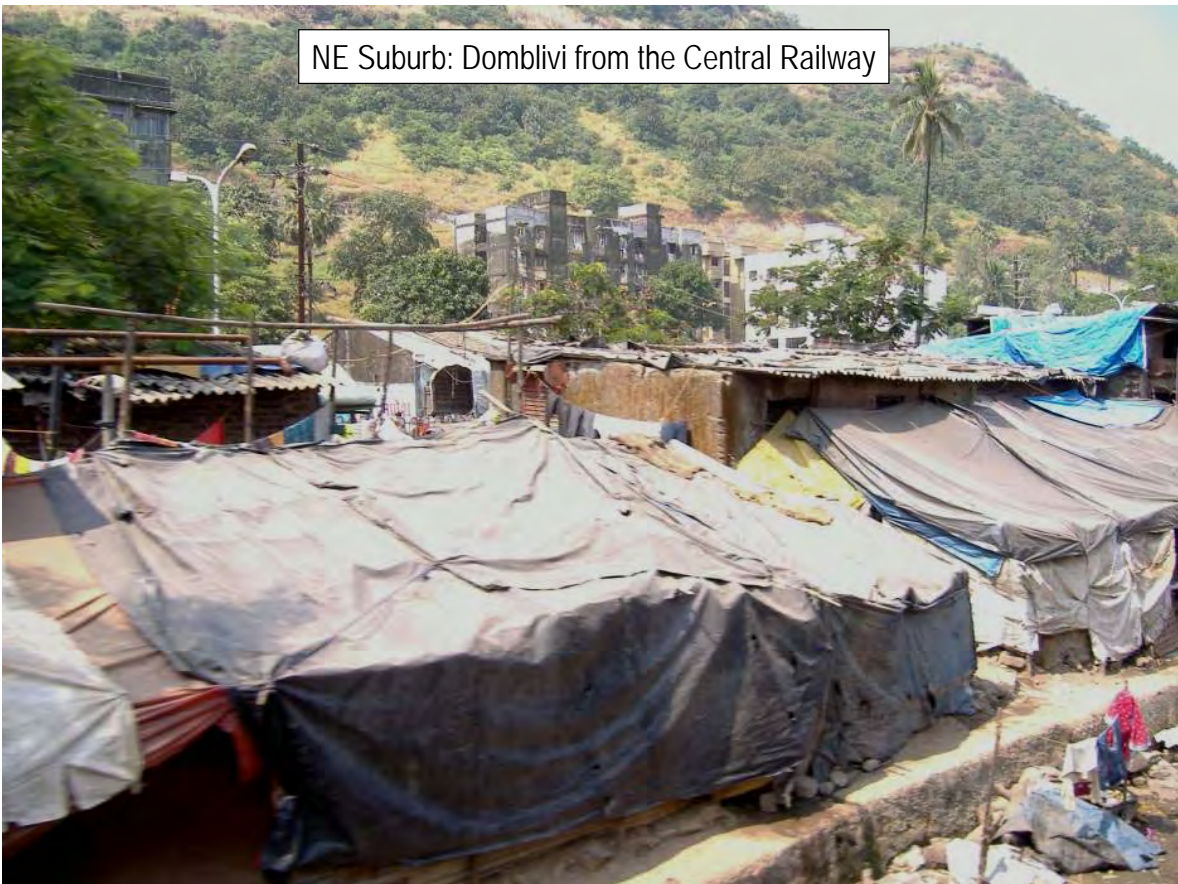


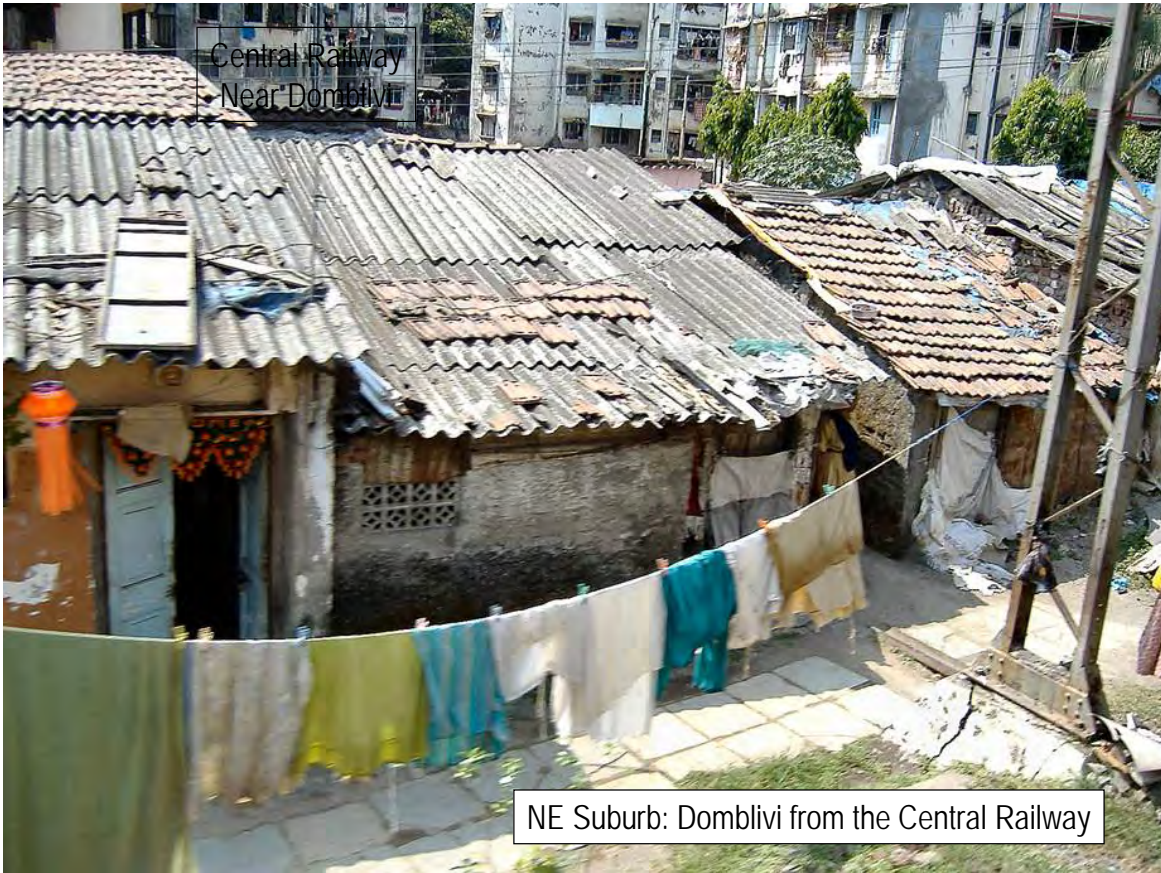
NE Suburb: Thane



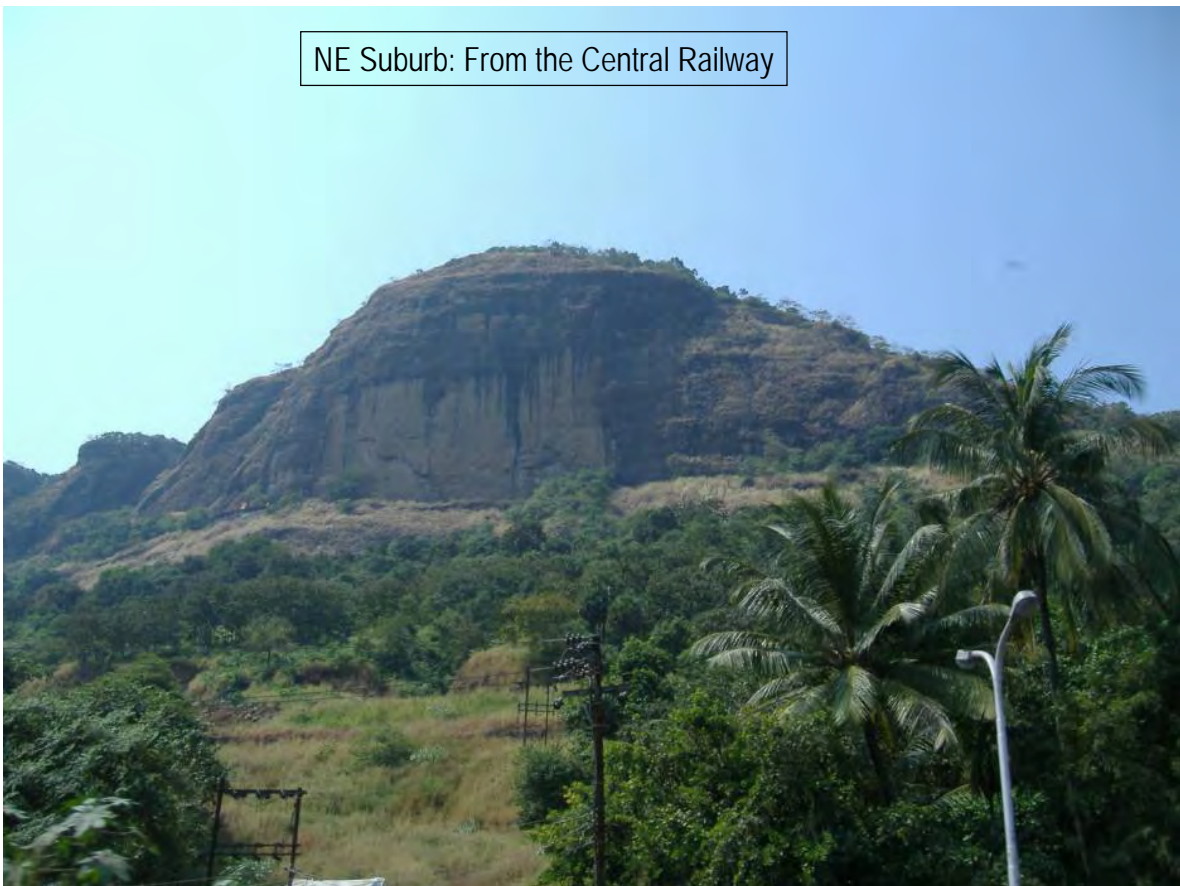
NE Suburb: From the Central Railway





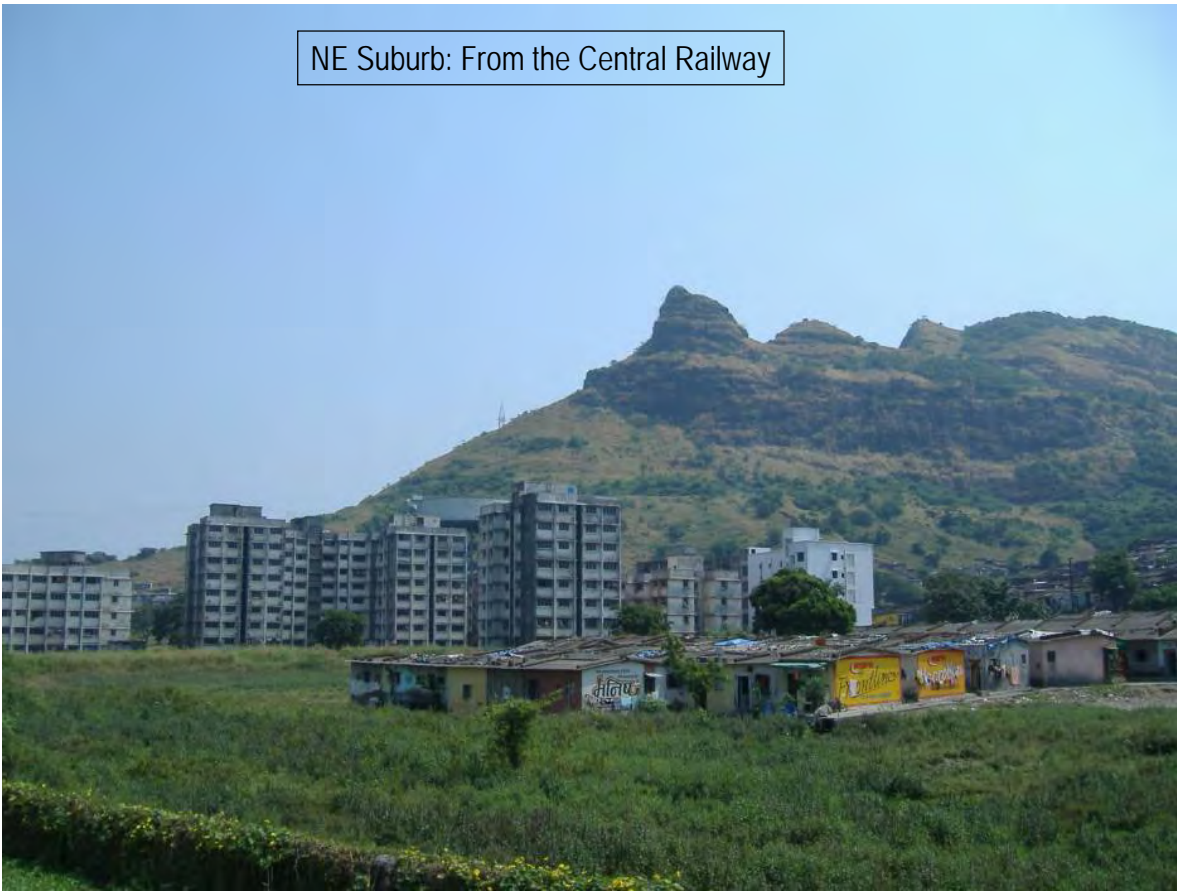


NE Suburb: Dombivli from the Central Railway

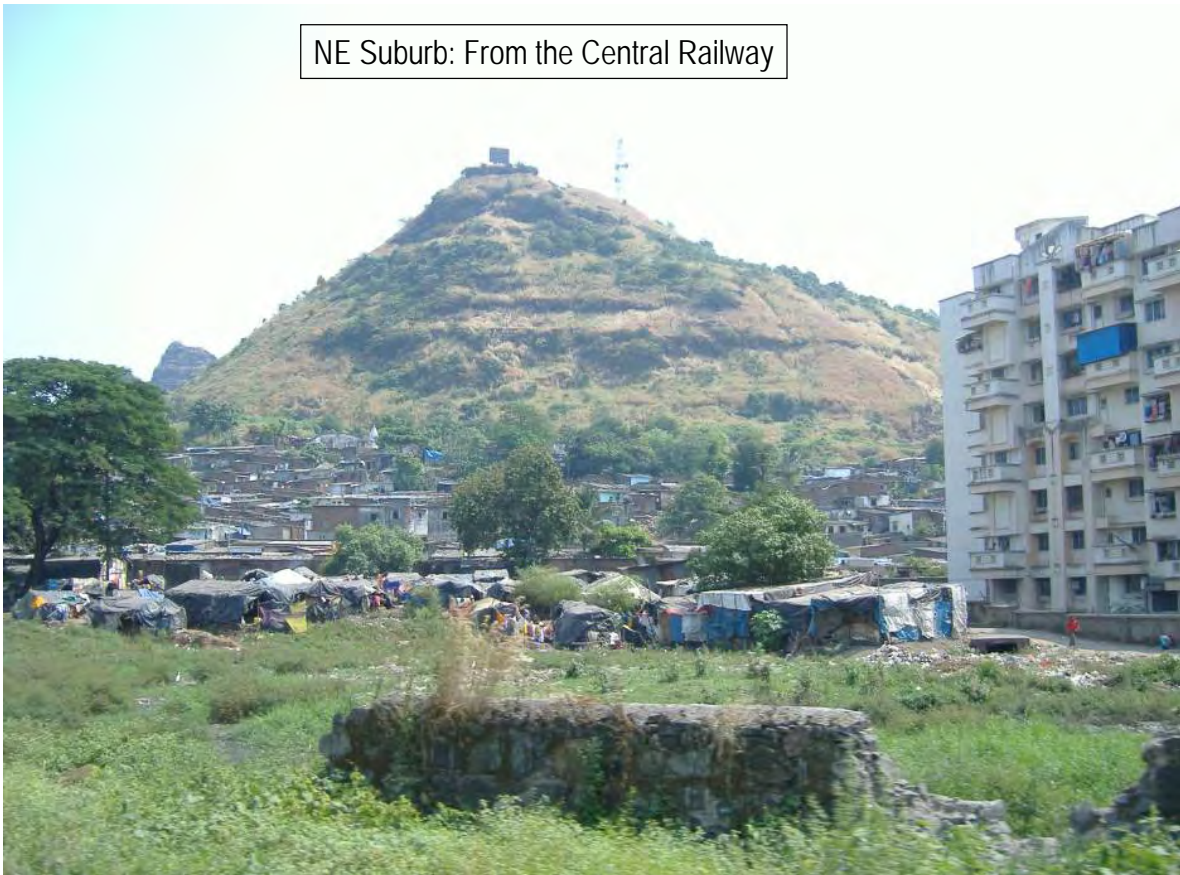


NE Suburb: From the Central Railway

NE Suburb: From the Central Railway



NE Suburb: From the Central Railway



NE Suburb (Thane): From the Central Railway



NE Suburb: Bhiwandi



NE Suburb: Bhiwandi



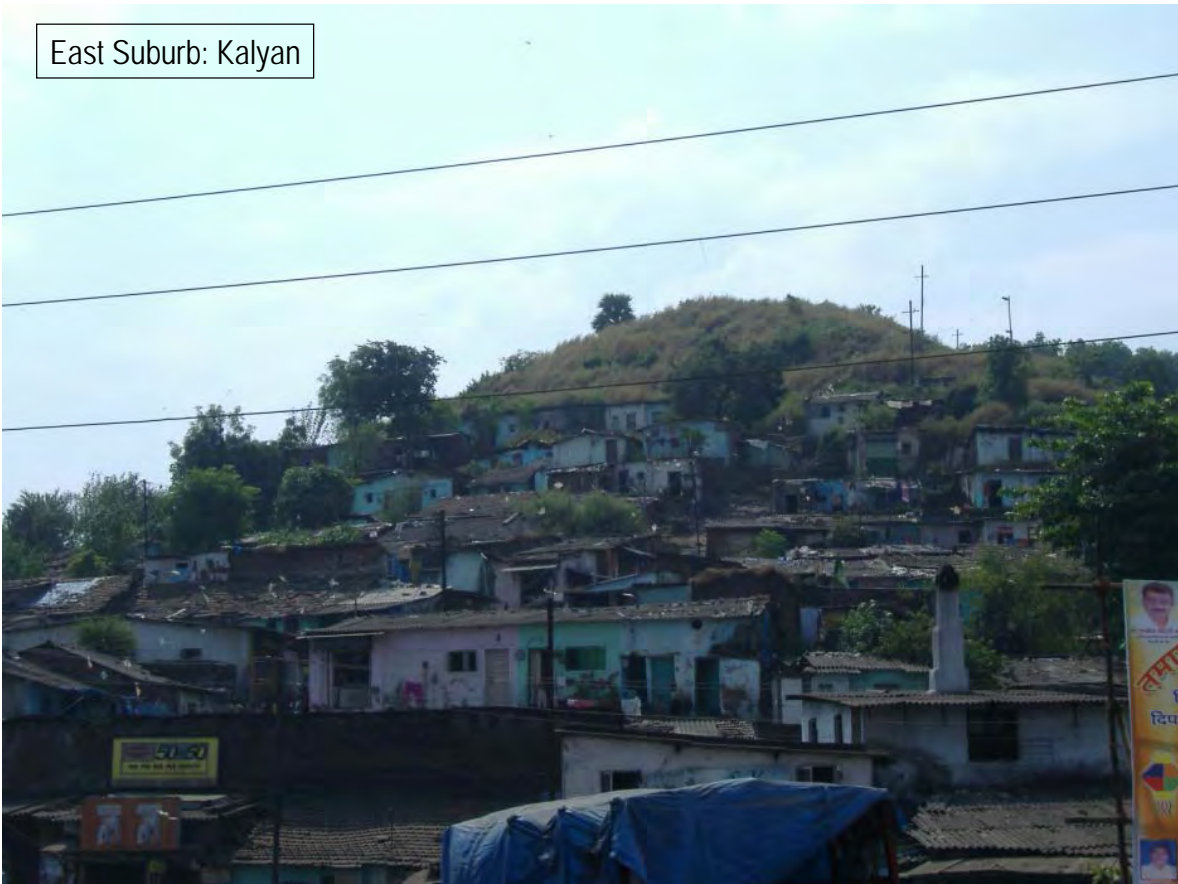
East Suburb: Kalyan



East Suburb: Kalyan



East Suburb: Kalyan



East Suburb: Kalyan



SE Suburb: Panvel





SE Suburb: Panvel



East from the Tajole Industrial Area



NE Suburb: Domblivi from the Central Railway

NAVI MUMBAI

(Suburb: Planned City)

Mumbai to Navi Mumbai Bridge



East Suburb: Navi Mumbai
Master Planned City

East Suburb: Navi Mumbai



East Suburb: Navi Mumbai





East Suburb, Navi Mumbai



East Suburb: Navi Mumbai

East Suburb: Navi Mumbai



Navi Mumbai: Pig, Water Pipe and Street Dwellers

Navi Mumbai: Shopping Center



East Suburb:
Navi Mumbai





East Suburb: Navi Mumbai



East Suburb:
Navi
Mumbai



East Suburb: Navi Mumbai



East Suburb: Navi Mumbai

East Suburb: Navi Mumbai
Hindu Temple with
Diwali Decoration Reflected
In Windshield



East Suburb: Navi Mumbai



East Suburb: Navi Mumbai



SE Suburb: Panvel



East Suburb: Navi Mumbai



East Suburb: Navi Mumbai



East Suburb: Navi Mumbai



Toward Navi Mumbai from Panvel (Mumbai Over the Hills)



Navi Mumbai from Panvel



Navi Mumbai from Panvel



East Suburb: Navi Mumbai



Navi Mumbai

