



# MEXICO CITY MAPPING

## A LARGE FEDERATION OF SMALL CITIES

THECITYPLAN  
BY ANDREA BOSCHETTI AND FEDERICO PAROLOTTA

In this issue CityPlan crosses the ocean to explore Mexico City, one of Latin America's cultural capitals.

The metropolitan area of the Federal District of Mexico City is home to more than 20 million people, making it one of the largest cities in the world. It is the largest city in the Western Hemisphere and the second largest in the world after Tokyo.

As usual, we examine the city by means of five GIS-generated maps graphically overlaid with data freely available on the Internet.

The first map shows population distribution in the territory. Comparing this with the others - showing the topography, availability and distribution of services and amenities, public transport and vegetation in the urban fabric, respectively - helps us assess whether the city has enjoyed largely well-balanced development or if, on the contrary, urban growth has been haphazard and uncontrolled.

The first map shows fairly clearly how **Mexico City is the result of the progressive "compacting" of once independent areas.** It also indicates that Mexico City is multi-centred. The picture resembles an extraordinarily intricate puzzle that could never be the result of drawing board planning. Each borough has its own special character. In contrast, the planned layout of the central area of the city is clearly evident. It is within this regular grid that most of the administration and government institutions and innumerable museums are located.

The natural contour map clearly shows Mexico City's special geographical features: its location at more than two thousand metres above sea level on a huge plateau that becomes mountainous terrain towards the west, creating a natural boundary to urban expansion. On the opposite side, starting from the airport, the city starts to give way

to agricultural land - which, however, will soon be taken over by a new international airport -.

The services map shows that service provision is fairly widely spread and distributed especially in residential areas, confirming yet again, the typical growth structure of a multi-centred city layout.

**The public transport distribution map evidences perhaps the city's biggest problem:** its inadequate extension and cluster organization, unsuitable to a city of the size and extension of Mexico City. Broad swathes of the city are completely without public transport. The resultant reliance on private vehicle use is the cause of the city's critical traffic problem.

Finally, the urban vegetation map shows parks and green spaces in proximity to the conglomeration. The mountains to the west, for example, are covered with virgin forest. The more central areas that have benefited from planning do not, however, have any major green areas, with the exception of the Alameda Central urban park, with one of the oldest walkways of the city and the whole of Latin America.

Essentially multi-centred, Mexico City's social and economic features are likewise grouped as separate units. While this has avoided the typical inefficiencies of hub-and-spoke cities where services and infrastructure are concentrated in a single urban centre, the sheer vastness and extension of the city bring their own criticalities. Mexico City's future will most likely require a rethinking of its public mobility systems and the need to consider how virtuous cities, like London, have tackled the problem.

Sources: navteq-openstreetmap, for road graphs, points of interest, urban parks, rivers and lakes; municipal-provincial-regional-national statistical portal for population geodata on census cells and points-of-interest validation; NASA v4 Shuttle Radar Topography mission (<http://www2.jpl.nasa.gov/srtm/>) for land digital models; Global Land Facility Cover (glcf.umd.edu) Vegetation Continuous Fields for the percentage of greenery coverage; Google Transit Feed and local public transport agencies for the public transport routes and network.

GIS data analysis and maps by Dante Presicce ([www.invisibledata.net](http://www.invisibledata.net)), post-production by Sebastiano Scacchetti.

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@metrogramma  
@parolotto

**Federal District (Mexico D.F.)**  
**Area:** 1,485 km<sup>2</sup>  
**Population:** 8,918,653 inhabitants  
(2015 data)

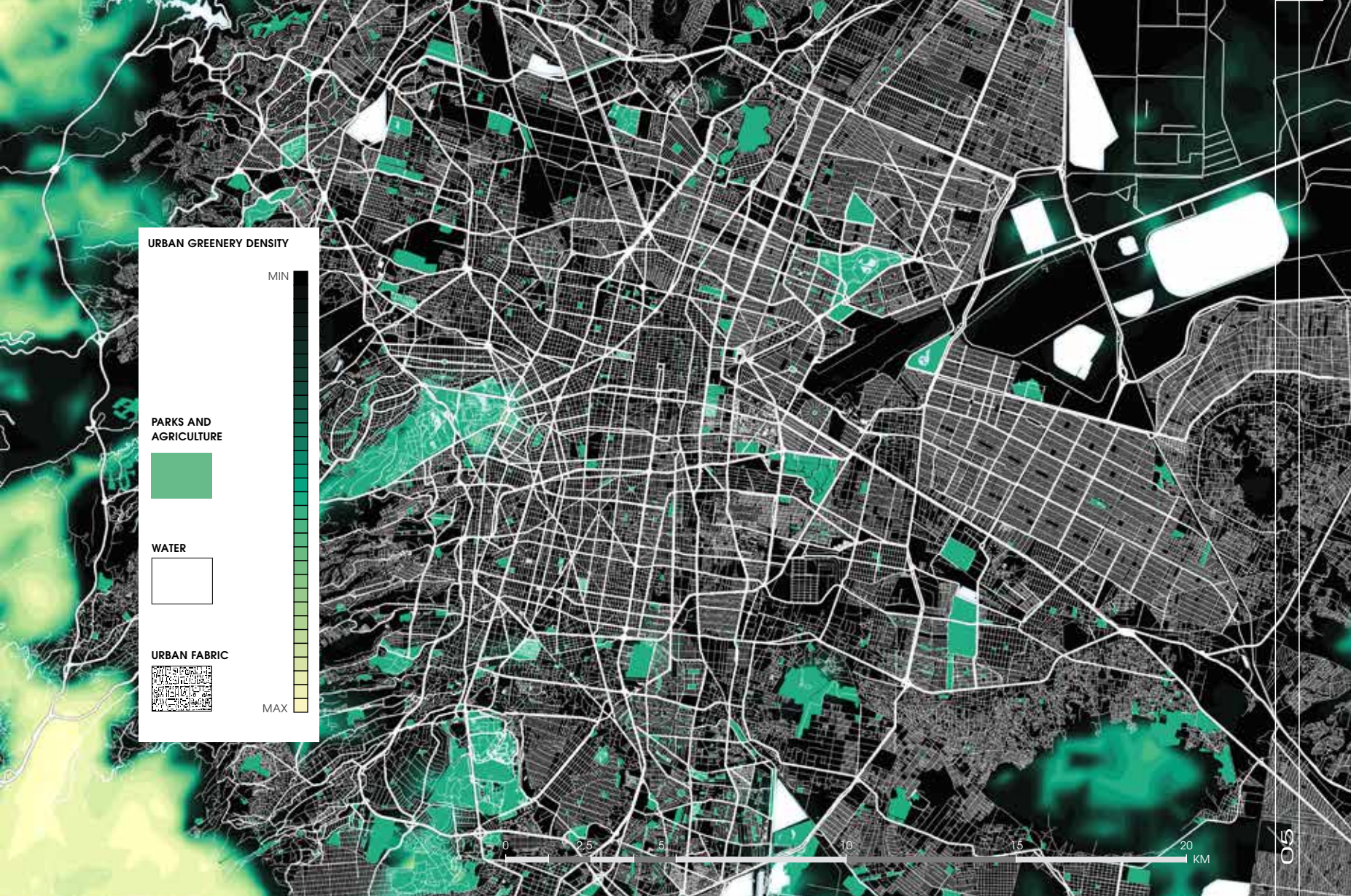
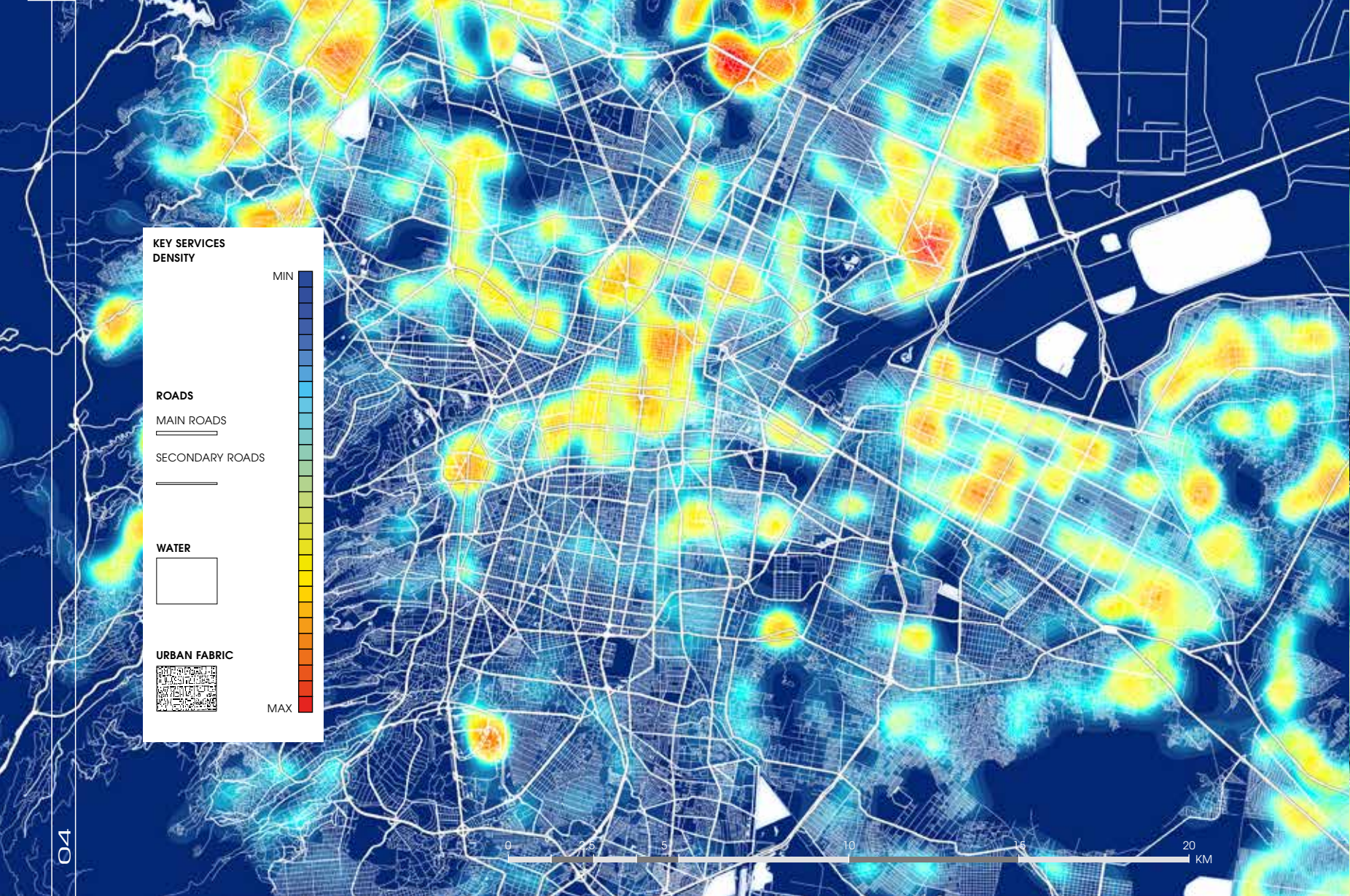
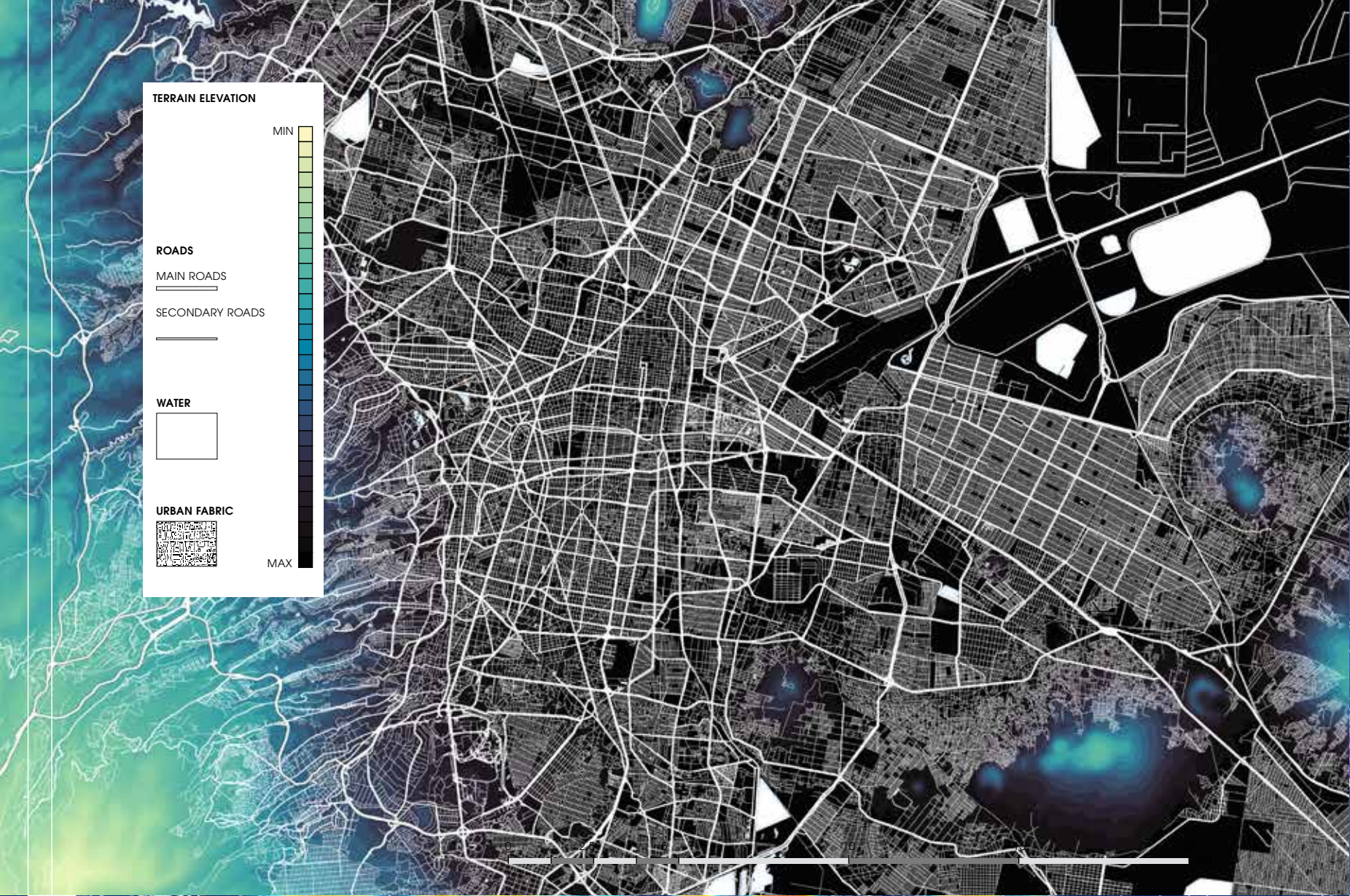
**Greater Mexico City**  
**Area:** 7,954 km<sup>2</sup>  
**Population:** 20,400,000 inhabitants  
(2015 data)

**Sources:**  
[https://es.wikipedia.org/wiki/Zona\\_Metropolitana\\_del\\_Valle\\_de\\_M%C3%A9xico](https://es.wikipedia.org/wiki/Zona_Metropolitana_del_Valle_de_M%C3%A9xico)

[https://en.wikipedia.org/wiki/Mexico\\_City](https://en.wikipedia.org/wiki/Mexico_City)

<http://www.cuentame.inegi.org.mx/monografias/informacion/df/default.aspx?tema=me&e=09>







# MEXICO FEDERAL DISTRICT

## THE CHALLENGES FACING AN URBAN MEGA-REGION

BY GUILLERMO SÁNCHEZ\*

The Metropolitan Area of the Valley of Mexico (ZMVM) is one of the most populous on the planet, with 21 million inhabitants according to a 2010 survey. Of these, 53% (11.1 million people) live in the 59 municipalities belonging to the conurbation of the State of Mexico, 42% (8.8 million) in the Federal District (or Mexico City), while the remaining 5% (1 million people) live in the 21 municipalities of the State of Hidalgo. ZMVM is the world's eighth most economically important metropolitan area, with a GDP similar to Belgium's. The whole area is made up of a central city (Mexico City) surrounded by a vast urbanised area that since the 1960s has spread to include the nearby municipalities of the State of Mexico, and continues to encroach on outlying areas. Over the last thirty years Mexico City's footprint has tripled.

Between 2005 and 2010 overall urban development in the ZMVM extended over 18,800 ha for a total of 146,032 ha. More specifically, 68% of this growth has been in the municipalities of the State of Mexico, 31% in the State of Hidalgo and 1% in the Federal District. **This indicates how urbanisation in the Valley of Mexico has followed an extensive, piecemeal, low-density model of expansion.** Land occupation varies widely in type and intensity, the Federal District differing greatly from the States of Mexico and Hidalgo. The Federal District has stopped urban sprawl and started a regeneration programme of certain central areas. Peripheral consolidation processes have been started in some areas to increase population density and halt horizontal urban sprawl. Improvements are still piecemeal though, with some areas undergoing planned regeneration while other downtown districts are seeing a flight of the population. These efforts contrast, however, with the continued disorganised horizontal urban growth still continuing in the States of Mexico and Hidalgo. The result is a vast, disparate metropolitan expanse, crisscrossed by a huge system of roads and urban corridors: mega-infrastructure and arterial roads, residential centres and urban quarters, huge industrial and retail districts, swathes of social housing, *colonias populares* (spontaneous popular districts), metropolitan parks, and natural and agricultural areas. In this

immense conglomerate, urban policies and management are patchy; land use and urban planning lack a comprehensive vision.

Over the years, rapid urban expansion has meant that large-scale infrastructure and service provision projects have had to be put in place to integrate new areas into the urban fabric. Road and transport systems have been improved, and considerable progress made in the area of water provision, sewerage and waste disposal, which has reduced the city's environmental footprint. Despite these efforts, however, **the ZMVM still poses a major problem in terms of ensuring a well-organised, compact and sustainable urban conurbation** and consequently good living standards for its citizens.

The Metropolitan Area of Mexico City contributes some 27.2% to the country's GDP. It is here that most of Mexico's services, trade and industries are concentrated, albeit very unevenly. Yet taken as a whole, the Valley of Mexico and the Federal District are part of the same geographical, economic and social system. The factors that have made Mexico City one of the most dynamic areas of the country should be extendable to the rest of the area. This is, however, blatantly not the case. While industry is for the most part well distributed, services and commercial activities are not. Certain municipalities have productivity levels some 41% lower than the boroughs of the Federal District.

Historically, the discrepancies in the distribution of industry, commerce and services in the ZMVM are the result of different development models. Advanced economic sectors linked to the global economy have been concentrated in the central areas of the Federal District and in western urban corridors like Cuajimalpa and Huixquilucan. Large commercial areas are also situated in central districts and in the municipalities of Naucalpan and Tlalnepantla (the huge Santa Fe and Plaza Satélite shopping centres) and in the urban corridors of Insurgentes, Reforma and Periférico. **In contrast, traditional local activities and businesses are largely low-tech and part of the grey economy.** Employment is irregular, wages low, and activities involve little fixed capital. As a result, the economic development, commercial







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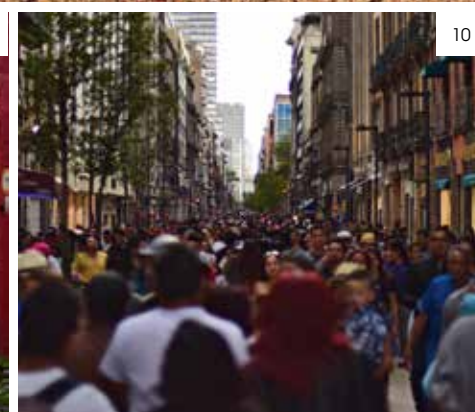
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- 1- VIEW OF RECENTLY RESTORED ALAMEDA CENTRAL PARK  
© THANIA ANAHI / FLICKR
- 2- OUTER RING ROAD NEAR SAN JERÓNIMO, MEXICO CITY SOUTH  
© JOSÉ LUIS RUIZ / FLICKR
- 3- UNIVERSIDAD NACIONAL AUTÓNOMA DE MÉXICO (UNAM) CAMPUS  
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- 4- SANTA FE, RETAIL AND RESIDENTIAL BOROUGH IN THE WEST OF THE CITY  
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- 5- PASEO DE LA REFORMA IN THE CITY CENTRE  
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- 6- SOUMAYA MUSEUM  
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- 7- AERIAL VIEW OF MEXICO CITY  
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- 8- PRE-HISPANIC REMAINS AT XOCHIMILCO, DELEGATION IN THE SOUTH OF THE CITY  
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- 9- STREET IN THE ANCIENT DELEGATION OF COYOACAN, SOUTH OF THE CITY  
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- 10- CALLE DE MADERO IN THE OLD CITY CENTRE  
© RULO LUNA RAMOS / FLICKR

activities and service provision of this vast conurbation are extremely unevenly distributed. A concentric model has led to the creation of high-income areas in the centre and along a western axis while traditional local-based activities are disseminated throughout the region in residential and mixed-use areas. Similarly, industry has developed both in the Federal District and in outlying municipalities along a system of corridors. The disconnect between the main economic areas providing most jobs and the districts where people live is one of the main reasons for the very high traffic volumes, with the resultant social, economic and environmental degradation.

**The areas of greatest poverty and marginalisation are concentrated in the municipalities in the north-east quadrant, where inhabitants are mainly poor or extremely poor.**

Reducing the inequalities between these areas and the country's capital must be one of the main goals of the central administration's economic policy. This is especially important since it is generally recognised that as a region, the Valley of Mexico has the capacity to close these gaps and improve its competitiveness. As with every city of this size, the challenges posed by social integration, public security, urban mobility and environmental sustainability are permanent issues, requiring a global vision. The ZMVM possesses the underlying conditions to allow well-balanced urban development strategies, improved transport networks and features of excellence conducive to a more solid urban and social structure able to link into the world economy. It follows that urban policies must view the Metropolitan Zone

of the Valley of Mexico as a single entity if the challenges of sustainability and competitiveness are to be effectively tackled.

By the same token, a regional and metropolitan strategy that integrates natural and rural areas and central and peripheral urban zones to produce a diversified metropolitan area comprising many centres is essential to achieve the goals of greater social cohesion, less social exclusion, lower costs for families and businesses, less congestion, better environmental conditions, and improved governance.

Making the ZMVM a more competitive area offering improved quality-of-life means giving Mexico greater international visibility, which in turn will attract foreign investment, promote innovation, offer service excellence and allow the country to access the major nodes of the global economy.

**\*Guillermo Sánchez** is Director of the Cities Project of the Metrópoli Foundation. After graduating in Architecture from the Monterrey Institute of Technology and Higher Education (ITESM), he completed a Master's at the Bartlett School of Graduate Studies, University College, London, and a research doctorate in Urban and Regional Planning at the University of Valladolid. He has lectured at several ITESM campuses and worked on different-scale urban and research projects. Guillermo Sánchez has participated with the Metrópoli Foundation in several international regional and urban projects, completing many important research studies in different countries and cities.