

Chennai, India

Healthy and Sustainable City Indicators Report: Comparisons with 25 cities internationally

Global Healthy & Sustainable City-Indicators Collaboration



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Global Observatory of
**Healthy and
Sustainable Cities**

Full report including data, methods and study limitations has been published as:

The Lancet Global Health Series on urban design, transport, and health. 2022. <https://www.thelancet.com/series/urban-design-2022>

Global Observatory of Healthy & Sustainable Cities. 2022. <https://www.healthysustainablecities.org>

Population data: Schiavina, M. et al. (2019): GHS population grid multitemporal (1975, 1990, 2000, 2015) R2019A. European Commission, Joint Research Centre (JRC). <https://doi.org/10.2905/42E8BE89-54FF-464E-BE7B-BF9E64DA5218>

Urban boundaries: Florczyk, A. et al. (2019): GHS Urban Centre Database 2015, multitemporal and multidimensional attributes, R2019A. European Commission, Joint Research Centre (JRC).

<https://data.jrc.ec.europa.eu/dataset/53473144-b88c-44bc-b4a3-4583ed1f547e>

Urban features: OpenStreetMap contributors. Openstreetmap (2020). <https://planet.osm.org/pbf/planet-200803.osm.pbf.torrent>

Colour scale: Crameri, F. (2018). Scientific colour-maps (3.0.4). Zenodo. <https://doi.org/10.5281/zenodo.1287763>

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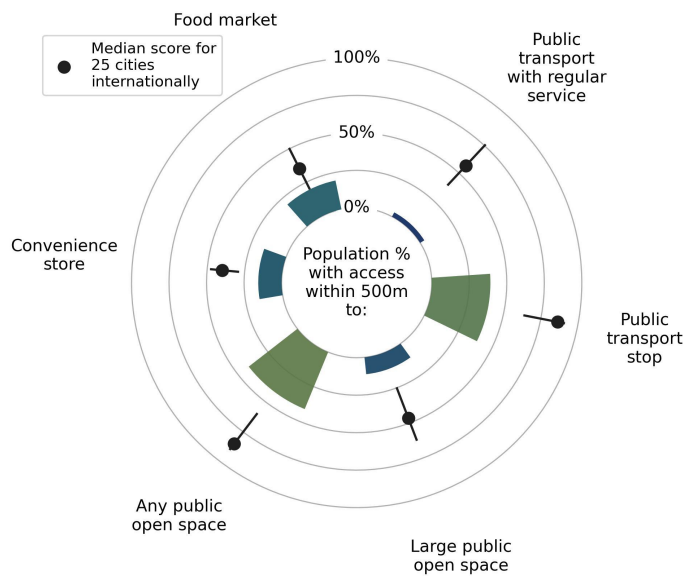
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Healthy and Sustainable City Indicators Report

This brief report outlines how Chennai performs on a selection of spatial and policy indicators of healthy and sustainable cities. Our collaborative study examined the spatial distribution of urban design and transport features and the presence and quality of city planning policies that promote health and sustainability for 25 cities across 19 countries.

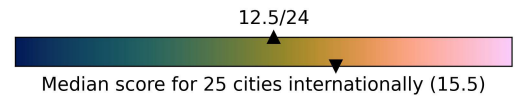
Comparisons with the median values for all cities included in this international study could inform changes needed for local city policies. The maps show the distribution of urban design and transport features across Chennai, and identify areas that could benefit the most from interventions to create healthy and sustainable environments.

(below) Percentage of population with access to amenities within 500 metres (m) in Chennai, India.



Policy presence in Chennai

Urban design and transport policies supporting health and sustainability



Policy quality in Chennai

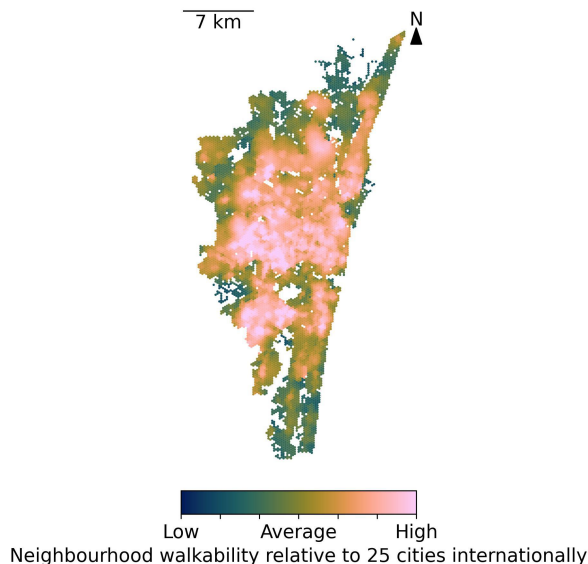
Policy quality rating for specific, measurable policies aligned with consensus evidence on healthy cities



City planning requirements	Chennai	% of cities with requirement met, by country income group	
		Middle /6	High /19
Specific health-focused actions in metropolitan urban policy	✗	0%	84%
Specific health-focused actions in metropolitan transport policy	✓	50%	63%
Health Impact Assessment requirements in urban/transport policy/legislation	✗	33%	11%
Information on government expenditure on infrastructure for different transport modes	✓	33%	47%
Air pollution policies related to transport planning	✓	50%	89%
Air pollution policies related to land use planning	✓	67%	84%

Walkability in Chennai

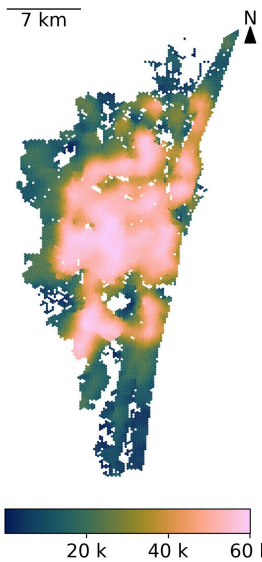
Walkable neighbourhoods provide opportunities for active, healthy, and sustainable lifestyles through having sufficient but not excessive population density to support adequate provision of local amenities, including public transport services. They also have mixed land uses and well-connected streets, to ensure proximate and convenient access to destinations. High-quality pedestrian infrastructure and reducing traffic through managing demand for car use can also encourage walking for transport.



(above) 92.5% of population live in neighbourhoods with walkability scores greater than the 25 international city median

Walkability policy for Chennai				
	Policy identified	Specific standard or aim	Measurable target	Consistent with health evidence
Housing density requirements	✗	-	-	-
Street connectivity requirements	✓	✓	✓	~
Parking restrictions to discourage car use	✗	-	-	-
Pedestrian infrastructure provision	✓	✓	✗	?
Cycling infrastructure provision	✓	✓	✗	✓
Walking participation targets	✗	-	-	-
Cycling participation targets	✗	-	-	-

Population density

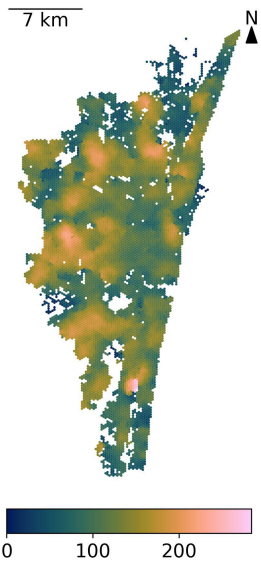


Neighbourhood population density (per km²)

(above) 99.7% of population meet minimum threshold* for neighbourhood population density (5,677 people per km²)

* Thresholds are based on our modelling of built environment features required to reach the World Health Organization's Global Action Plan for Physical Activity target of a 15% relative reduction in insufficient physical activity through walking. We found preliminary evidence that street intersection density above 250 per km² and ultra-dense neighbourhoods (> 15,000 persons per km²) may have decreasing benefits for physical activity. This is an important topic for future research.

Street connectivity

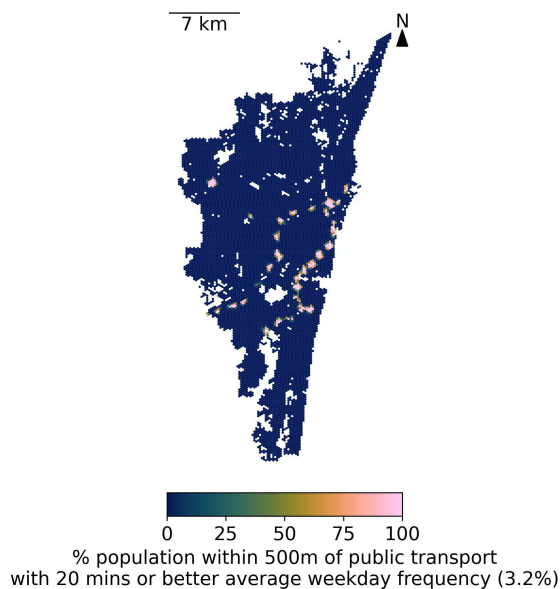


Neighbourhood street intersection density (per km²)

(above) 79.3% of population meet minimum threshold* for neighbourhood street intersection density (106 intersections per km²)



Public transport access

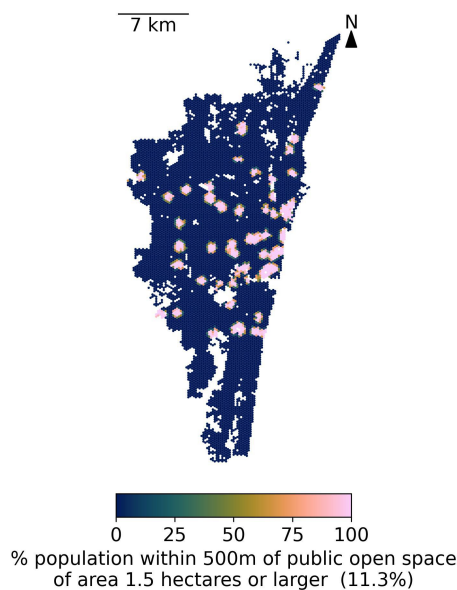


Easy access to frequent public transport is a key determinant of healthy and sustainable transport systems. Public transport near housing and employment increases the mode share of public transport trips, thus encouraging transport-related walking; offering access to regional jobs and services; improving health, economic development, and social inclusiveness; and reducing pollution and carbon emissions. The frequency of services also encourages public transport use, in addition to the proximity of stations or stops.

Public transport policy for Chennai

	Policy identified	Specific standard or aim	Measurable target	Consistent with health evidence
Requirements for public transport access to employment and services	X	-	-	-
Employment distribution requirements	X	-	-	-
Minimum requirements for public transport access	✓	✓	X	✓
Targets for public transport use	X	-	-	-

Public open space access



Local access to high-quality public open space promotes recreational physical activity and mental health. Nearby public open space creates convivial, attractive environments, helps cool the city and protects biodiversity. As cities densify and private open space declines, providing more public open space is critical for population health. Having public open space within 400 m of homes can encourage walking. Access to larger parks may also be important.

Public open space policy for Chennai

	Policy identified	Specific standard or aim	Measurable target	Consistent with health evidence
Minimum requirements for public open space access	✓	?	?	?

Summary

The availability of policies supporting health and sustainability in Chennai is just below average compared with other cities. However, the quality of available policies is well below average in terms of their specificity, measurability and consistency with health evidence. Chennai does not appear to have specific health-focussed actions in its metropolitan urban policy or requirements for health impact assessment of transport and land use interventions. Nonetheless, the majority of neighbourhoods are walkable relative to the 25 cities in this international study. Almost all Chennai neighbourhoods meet density thresholds to achieve WHO targets to increase physical activity, and almost 80% achieve street connectivity thresholds. However, some Chennai residents may live in neighbourhoods that exceed levels of density and street connectivity that encourage physical activity. Notably, only 3.2% of residents have access to public transport stops with regular services within 500m, although our study does not include informal public transport opportunities. Less than 50% of residents have public open space within 500m, and only 11.3% have access to larger public open space. Compared with other cities studied, the percentage of Chennai residents with access within 500m to all the amenities studied is well below average.

Citation

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