



Global Observatory of
**Healthy and
Sustainable Cities**

St. Louis City, USA (2023-2024)

*Spatial and policy indicators for
healthy and sustainable cities – a
1000 Cities Challenge report*



Full details of the data and methods are available at:

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

Population data: Schiavina, Marcello; Freire, Sergio; MacManus, Kytt (2022): GHS-POP R2022A - GHS population grid multitemporal (1975-2030). European Commission, Joint Research Centre (JRC) [Dataset] doi: 10.2905/D6D86A90-4351-4508-99C1-CB074B022C4A

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.fr (2023). https://download.openstreetmap.fr/extracts/africa/spain/canarias/las_palmas-latest.osm.pbf
Colour scale: Crameri, F. (2018). Scientific colour-maps (3.0.4). Zenodo. <https://doi.org/10.5281/zenodo.1287763>

Global Healthy and Sustainable Collaboration

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Spatial and policy indicators for healthy and sustainable cities: a 1000 Cities Challenge report

This report outlines how St. Louis City performs on a selection of spatial and policy indicators of healthy and sustainable cities. As part of the 1000 Cities Challenge, we examined the spatial distribution of urban design and transport features, and the presence and quality of city planning policies that promote health and sustainability.

The findings could inform changes needed to local city policies. The maps show the distribution of urban design and transport features across St. Louis City and identify areas that could benefit the most from interventions to create healthy and sustainable environments.

City context

St. Louis City is a major city in Missouri, United States, located along the western bank of the Mississippi River. It is known for its significant role in the United States' westward expansion, highlighted by the iconic Gateway Arch.

Levels of government

The policy checklist for St. Louis City encompasses government actions at both Regional and Local levels, indicating comprehensive coverage across different layers of governance.

Demographics and health equity

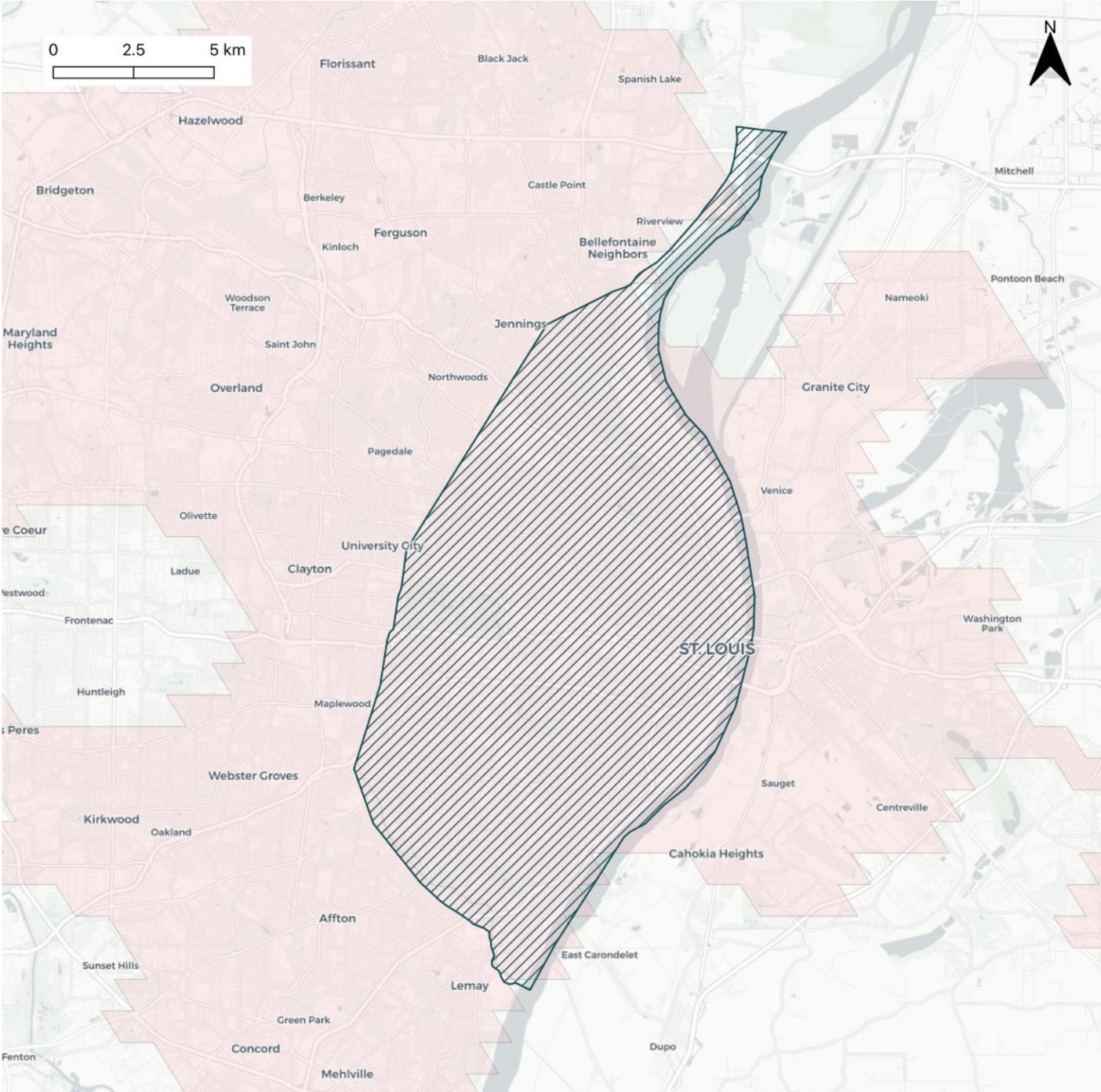
St. Louis City continues to experience a decline in population, currently with 286,578, of which 20.2% live in poverty. Due to the historical spatial-racial segregation, particularly with the famous Delmar Divide, the city continues to face socio-economic and health inequities.

Environmental disaster context

St. Louis City faces environmental challenges, including severe storms, floods, wild-fires, heatwaves, extreme cold, earthquakes and tornados.



Study Region: St. Louis City, USA



Map Legend

 Urban Area Boundary for St. Louis City, USA

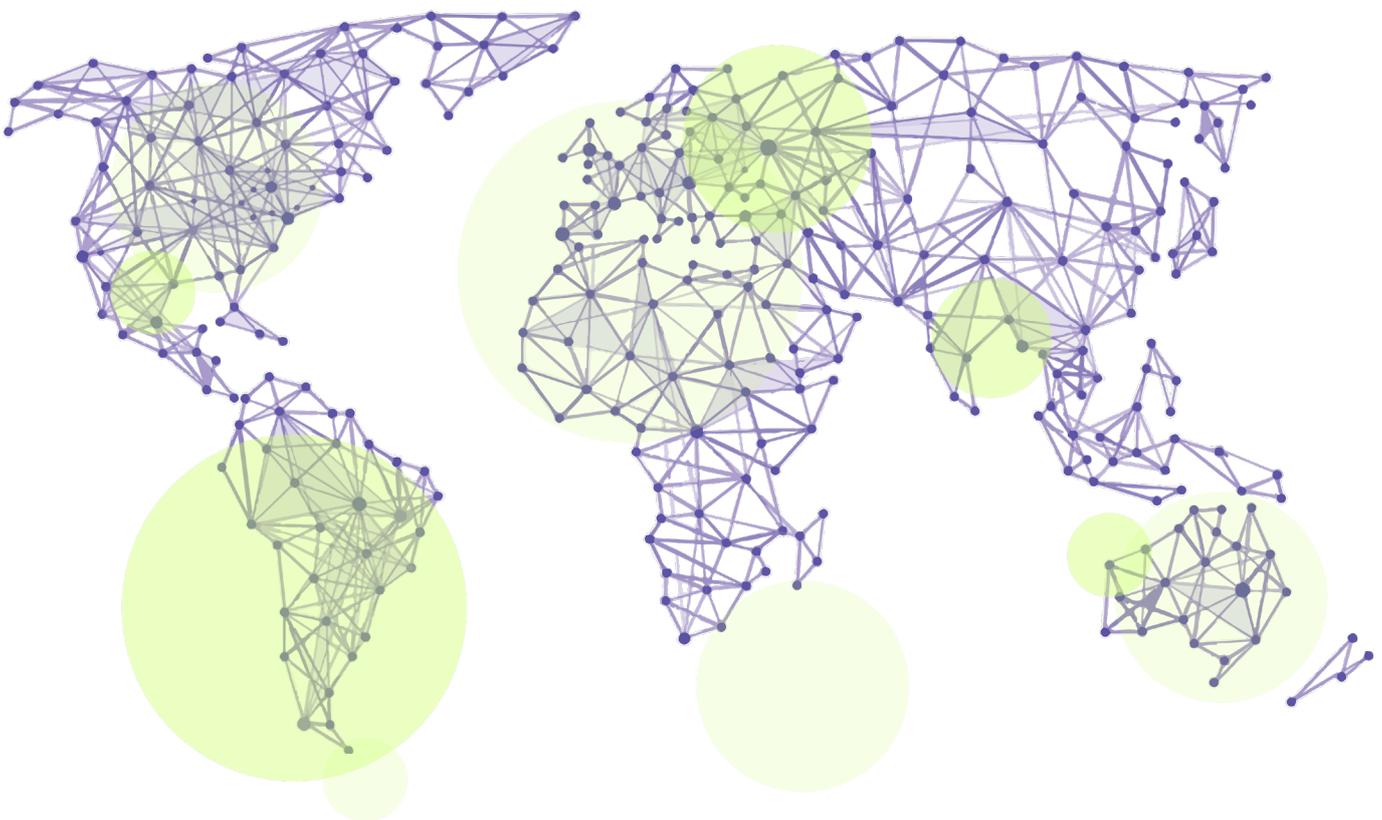
 Study region boundary from the Global Human Settlements urban centres: 2015 (EU JRC, 2019)

 Area of study: the intersection between the Study region boundary and Urban Area Boundary

Box 1: Lancet Global Health Series - study of 25 cities internationally

The 1000 Cities Challenge extends methods for assessing the health and sustainability of cities outlined in the 2022 Lancet Global Health Series on urban design, transport, and health. Policy and spatial indicators were calculated, analysed and reported in multiple languages for 25 diverse cities across 19 countries and 6 continents.

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



Policy indicators

Public policies are essential for supporting the design and creation of healthy and sustainable cities and neighbourhoods. Policy indicators were used to assess and derive overall scores for both the presence and quality of urban and transport policies aligned with principles of healthy and sustainable cities.

Policy scores for St. Louis City, USA

Policy presence score

Presence of urban and transport policies supporting health and sustainability

26/32

Policy quality score

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

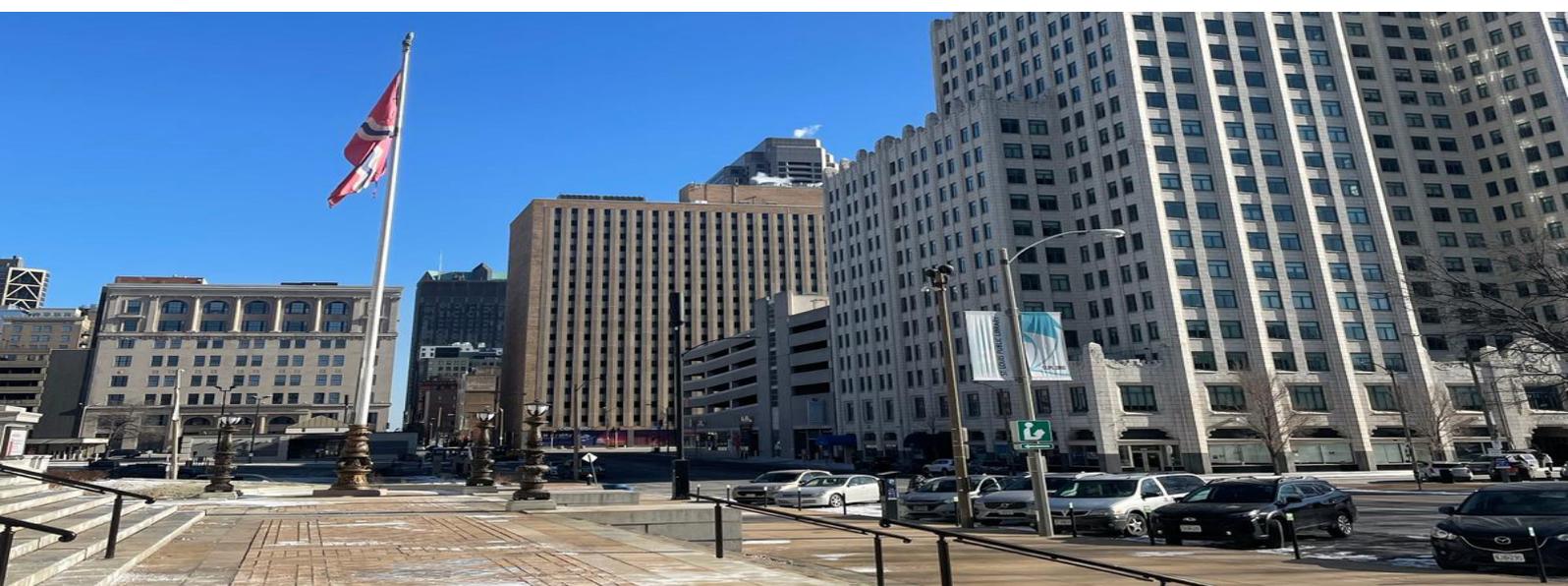
19/62

Integrated city planning policies for health and sustainability

Many sectors are involved in creating healthy and sustainable cities, including land use, transport, housing, parks, economic development, and infrastructure. Integrated planning is required to ensure policy alignment across sectors. Health considerations need to be embedded in transport and urban policies, and investment in active and public transport should be prioritised.

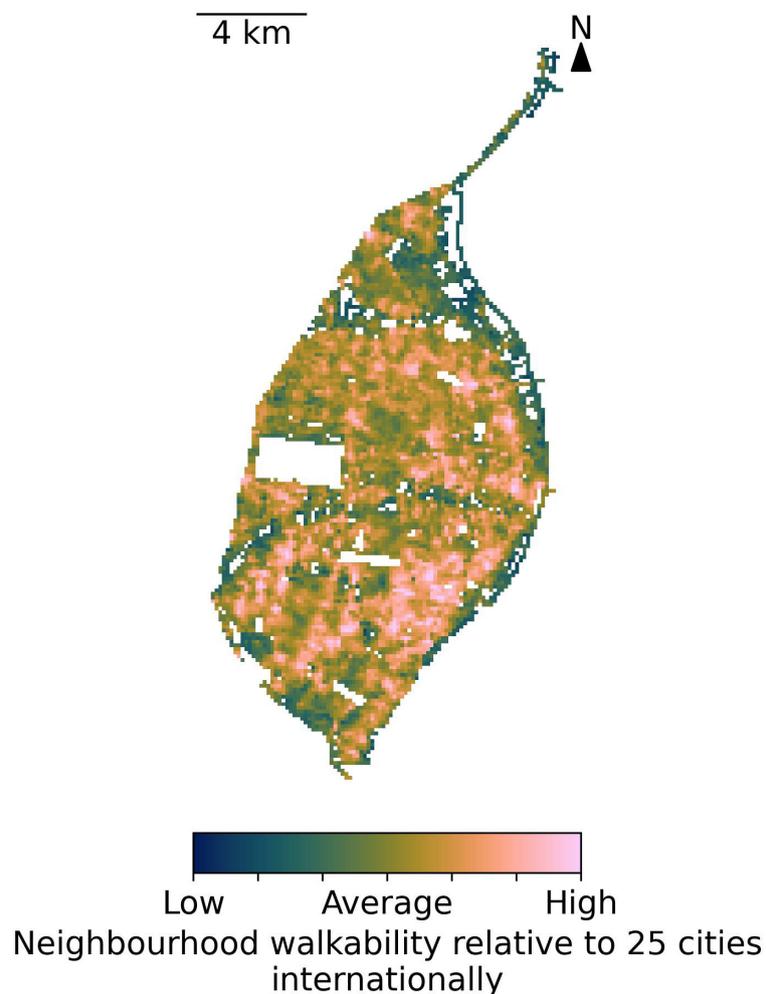
| | Policy identified | Aligns with healthy cities evidence | Measurable target |
|--|-------------------|-------------------------------------|-------------------|
| Transport policy with health-focused actions | ✓ | ✓ | ✗ |
| Urban policy with health-focused actions | ✗ | — | — |
| Health Impact Assessment requirements in urban/transport policy | ✗ | — | — |
| Urban/transport policy explicitly aims for integrated city planning | ✓ | ✓ | ✗ |
| Publicly available information on government expenditure for different transport modes | ✓ | ✓ | ✗ |

✓ Yes ✗ No M Mixed — Not Applicable



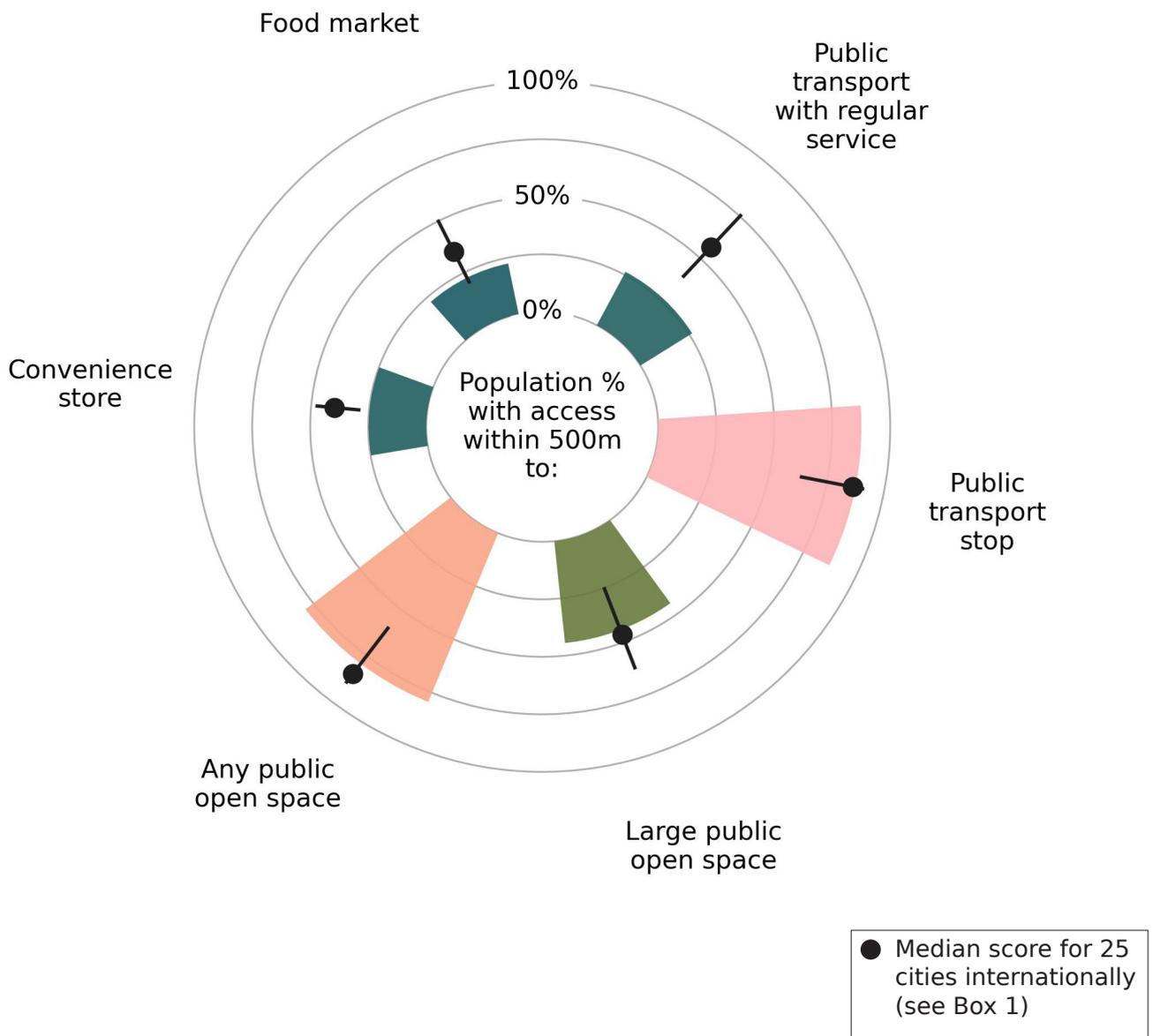
Walkability and destination access

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.



89.6% of the population in St. Louis City live in neighbourhoods with walkability scoring above the median for 25 cities internationally (Box 1)

Percentage of population with access to services within walking distance in St. Louis City, USA



Walkability and destination access policies

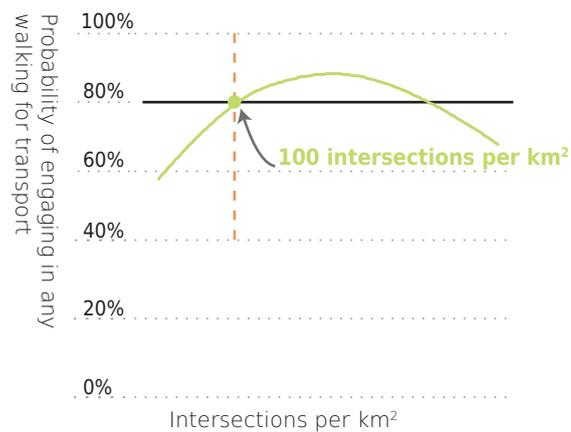
| | Policy identified | Aligns with healthy cities evidence | Measurable target |
|--|-------------------|-------------------------------------|-------------------|
| Street connectivity requirements | X | - | - |
| Parking restrictions to discourage car use | ✓ | M | X |
| Traffic safety requirements | ✓ | M | X |
| Pedestrian infrastructure provision | ✓ | ✓ | X |
| Walking participation targets | X | - | - |
| Cycling infrastructure provision | ✓ | ✓ | X |
| Cycling participation targets | ✓ | ✓ | X |
| Housing density requirements | ✓ | ✓ | X |
| Residential building height restrictions | ✓ | ✓ | X |
| Limits on greenfield housing development | ✓ | ✓ | X |
| Mixture of housing types/sizes | ✓ | ✓ | X |
| Mixture of local destinations for daily living | ✓ | ✓ | X |
| Close distance to daily living destinations | ✓ | ✓ | X |
| Employment distribution requirements | ✓ | ✓ | X |
| Ratio of jobs to housing | X | - | - |
| Healthy food environments | ✓ | ✓ | X |
| Crime prevention through environmental design | ✓ | ✓ | X |

✓ Yes X No M Mixed - Not Applicable

Thresholds for optimising walking

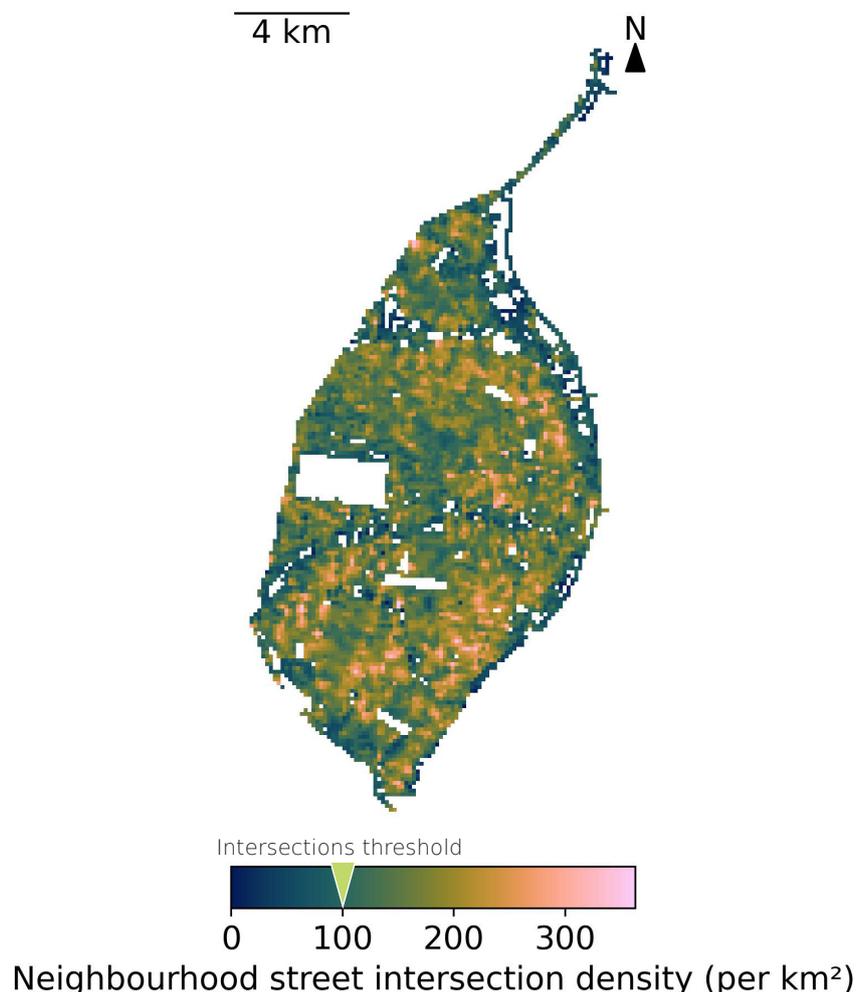
The 2022 Lancet Global Health Series found that, to achieve at least 80% probability of engaging in any walking for transport, urban neighbourhoods need a population density of at least about 5700 people per km², and street connectivity of at least 100 intersections per km² (see graphs below). Preliminary evidence showed 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

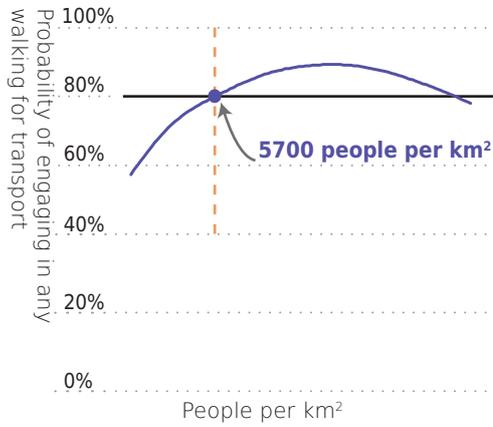


91.7% of the population in St. Louis City live in neighbourhoods meeting the street intersection density threshold for 80% probability of engaging in any walking for transport (100 intersections per km²)

Adapted from The Lancet Global Health (2022): <https://www.thelancet.com/infographics-do/urban-design-2022>

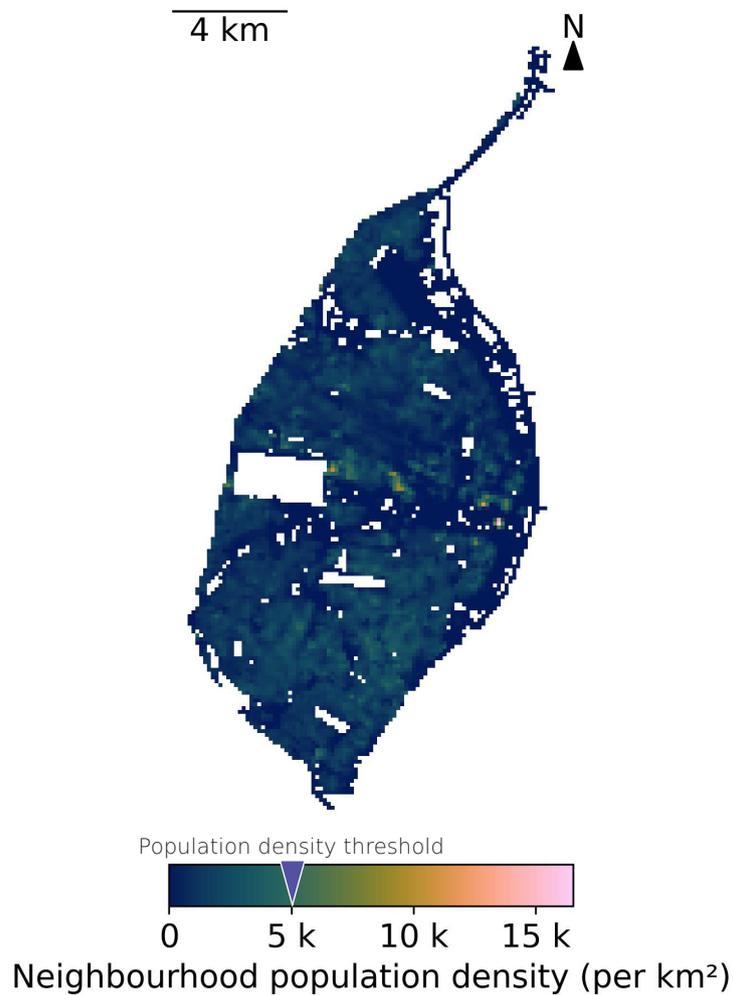


Population density



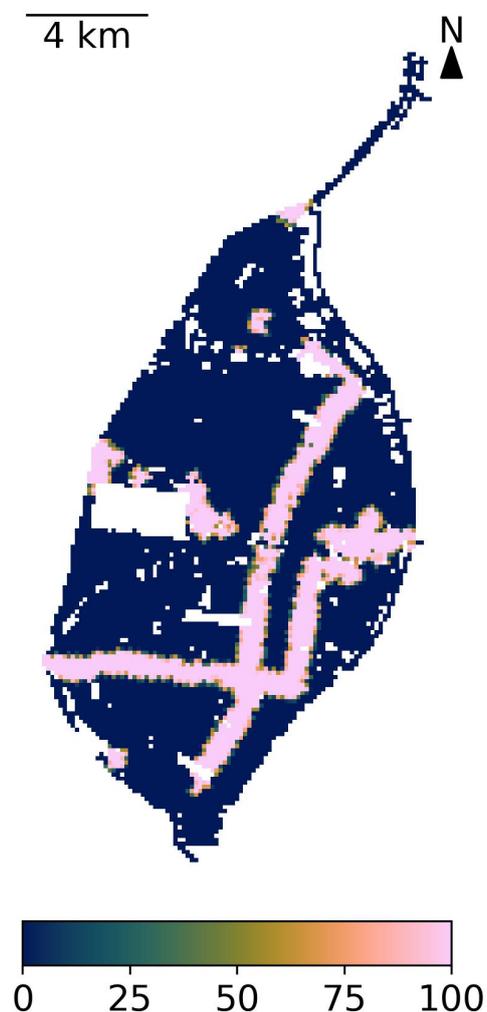
2.8% of the population in St. Louis City live in neighbourhoods meeting the population density threshold for 80% probability of engaging in any walking for transport (5,700 people per km²)

Adapted from The Lancet Global Health (2022): <https://www.thelancet.com/infographics-do/urban-design-2022>



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.



26.3% of the population in St Louis live within 500 m of public transport with 20 mins or better average weekday frequency

Public transport policies

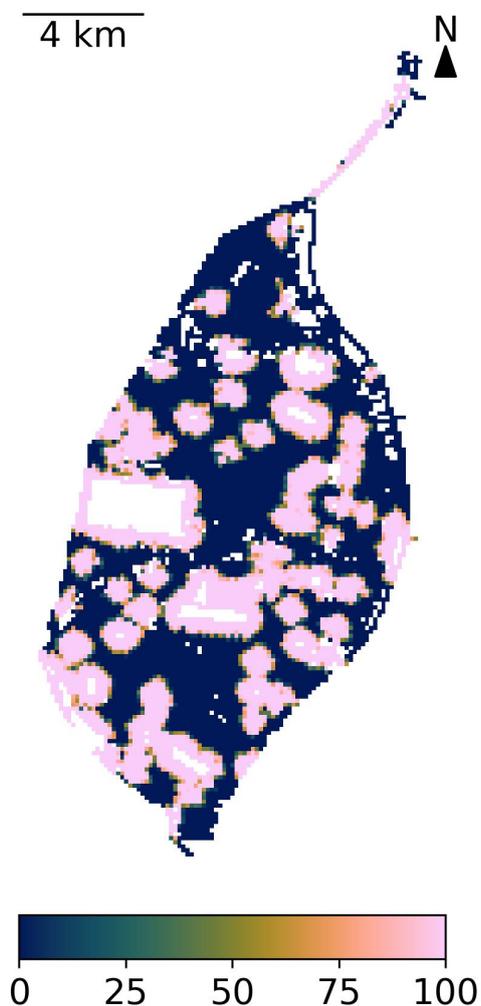
| | Policy identified | Aligns with healthy cities evidence | Measurable target |
|---|-------------------|-------------------------------------|-------------------|
| Requirements for public transport access to employment and services | ✓ | ✓ | ✗ |
| Minimum requirements for public transport access | ✓ | ✓ | ✗ |
| Targets for public transport use | ✗ | — | — |

✓ Yes ✗ No M Mixed — Not Applicable



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.



44.5% of the population in St. Louis City live within 500m of public open space of at least 1.5 hectares in size

Public open space policy

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.

| | Policy identified | Aligns with healthy cities evidence | Measurable target |
|---|-------------------|-------------------------------------|-------------------|
| Minimum requirements for public open space access | ✓ | ✓ | ✗ |
| ✓ Yes ✗ No M Mixed — Not Applicable | | | |



Ana Luiza Favarão Leão, 2023

Urban air quality and nature-based solutions policies

Land use and transport policies play a key role in limiting air pollution, with multiple benefits for health and sustainability. Nature-based solutions, including urban greening and urban biodiversity protection, have mental health benefits by increasing contact with nature. Green spaces and vegetation cover can cool cities and help build resilience to extreme heat.

| | Policy identified | Aligns with healthy cities evidence | Measurable target |
|--|-------------------|-------------------------------------|-------------------|
| Transport policies to limit air pollution | ✓ | M | ✗ |
| Land use policies to reduce air pollution exposure | ✓ | ✓ | ✗ |
| Tree canopy and urban greening requirements | ✓ | ✓ | ✗ |
| Urban biodiversity protection and promotion | ✓ | ✓ | ✗ |

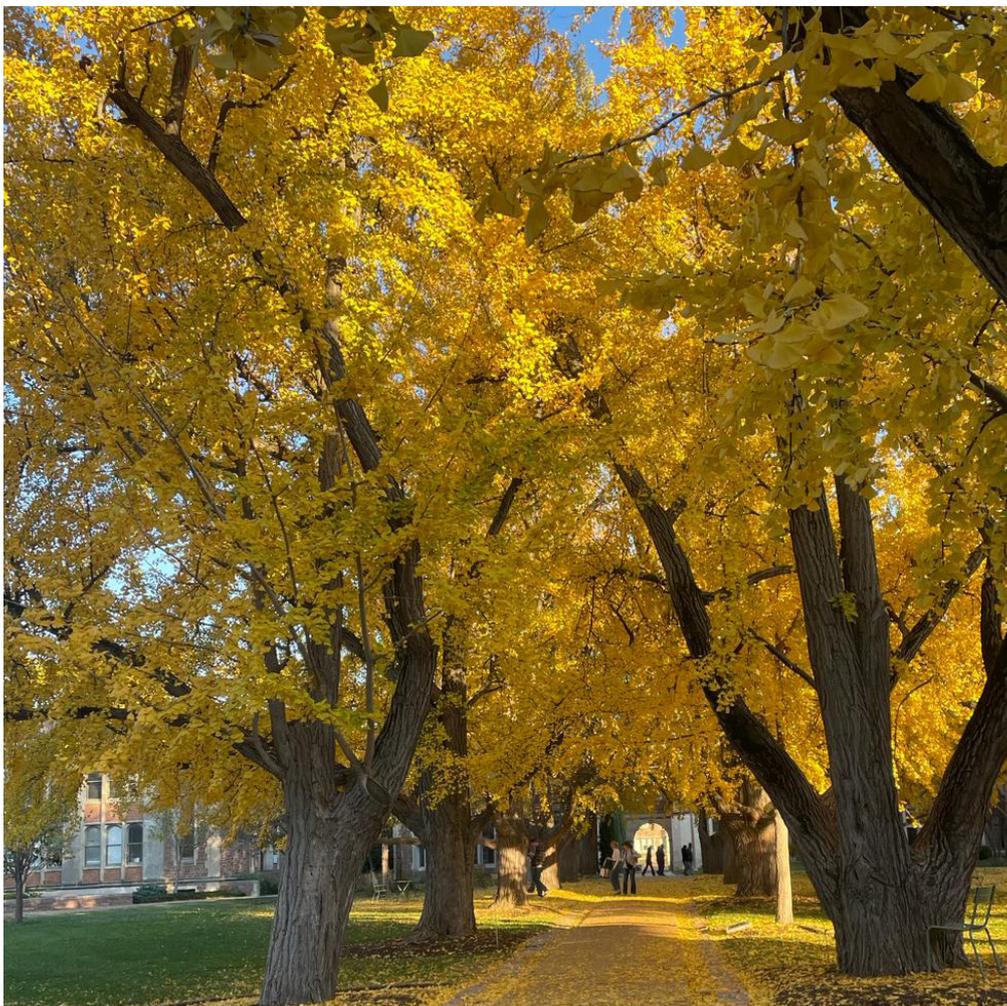
✓ Yes ✗ No M Mixed — Not Applicable

Climate disaster risk reduction policies

In the face of climate change, built environments need to be designed to reduce the health impacts of increasingly frequent and severe extreme weather events, such as heat waves, flooding, bushfires/wildfires and extreme storms.

| | Policy identified | Aligns with healthy cities evidence | Measurable target |
|---|-------------------|-------------------------------------|-------------------|
| Adaptation and disaster risk reduction strategies | ✓ | M | X |

✓ Yes X No M Mixed — Not Applicable



Raul D. Gierbolini-Rivera, 2023

Summary

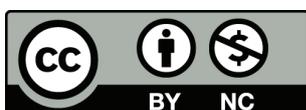
In St. Louis City, the policy review indicates a comprehensive policy framework with minimal gaps. Scarce measurable policy targets and some lack of alignment with healthy city principles lower the score for policy quality. Spatially, the city performs on par with the international median regarding public transport stop access and proximity to open space. However, the access to regular public transport services is considerably below that of the 25 cities benchmarked. Approximately, 44.5% of the population have nearby access to large public open spaces, while 26.3% have access to frequent public transport within 500-meters.

The city has lower scores in the accessibility to food markets and convenience stores. Regarding walkability, 89.6% of St. Louis City's residents live in areas with walkability scores surpassing the international city median. A high proportion, 91.7%, are in neighborhoods meeting the street intersection density threshold conducive to physical activity. However, only 2.8% meet the minimum population density threshold.



Citation

Favarão Leão, AL, Franco Silva, M, Gierbolini-Rivera, RD, Shaw, C, O'Connor, Á, Reis, RS. 2024. St. Louis City, USA — Spatial and policy indicators for healthy and sustainable cities - a 1000 Cities Challenge report (English).



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