PORT MORESBY, PAPUA NEW GUINEA

URBAN TRANSPORT PROFILE

December 2024

Asian Transport Observatory

Summary

Port Moresby, the capital of Papua New Guinea, faces significant urban transport challenges. With a rapidly growing population of 392,000 and a high density of 8,000 persons per sqkm, the city's existing transport infrastructure is struggling to keep pace. The lack of a comprehensive public transport system and limited road infrastructure has led to a heavy reliance on privately owned Public Motor Vehicles (PMVs). These often overcrowded buses operate on an informal basis, with no fixed timetables or security measures, resulting in unreliable and unsafe conditions, particularly for women. This lack of adequate public transport is reflected in the modal split, with 92% of trips made using private modes of transport and only 8% walking or cycling.

The poor state of urban transport in Port Moresby has significant consequences for its residents. Only 23% of the population has convenient access to public transport, far below the Pacific average of 62%. Furthermore, access to essential services and public spaces is severely limited, with 0% having access to both healthcare and schools, and only 41% having access to general open public spaces. This inadequate transport network hinders access to opportunities and contributes to social inequality. Additionally, the reliance on private vehicles and the limited road infrastructure contribute to rising CO2 emissions, with Port Moresby emitting 164 thousand tonnes, ranking 8th among Pacific cities.

Despite these challenges, initiatives are underway to improve Port Moresby's urban transport. A pilot project to introduce 5 electric buses to the city's fleet is planned for 2023, to expand this in the future. However, a more comprehensive and integrated approach is needed to address the city's transport issues. This should include investment in developing and improving public transport infrastructure and services, implementing road safety measures, and promoting sustainable modes of transport such as walking and cycling. By prioritizing accessible, safe, and sustainable urban transport, Port Moresby can improve the quality of life for its residents and promote equitable and sustainable development.

About the Urban Transport Profiles

The Asian Transport Observatory (ATO) Urban Transport Profiles provide a comprehensive snapshot of urban transport dynamics for 40 cities in the Asia-Pacific region. These profiles compile data from official city reports, relevant sources from reputable research organizations, multilateral development institutions, international experts' reports, secondary studies, and all other research endorsed or guided by city governments. Featured cities are benchmarked against other cities, where data is available, in the region, subregional averages — and in some cases, global cities — offering valuable comparative insights. In cases where data is not available, placeholders for the graphs are retained. Each profile also includes a curated list of relevant urban transport policies and documents, presenting a concise overview of the city's policy framework. By covering a wide range of transport-related indicators, these profiles serve as a critical resource for understanding and improving urban transport systems.
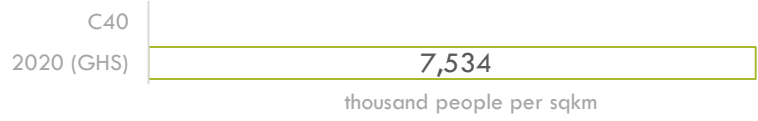
Disclaimer

General

Population 392 thousand
(2020) (GHS)
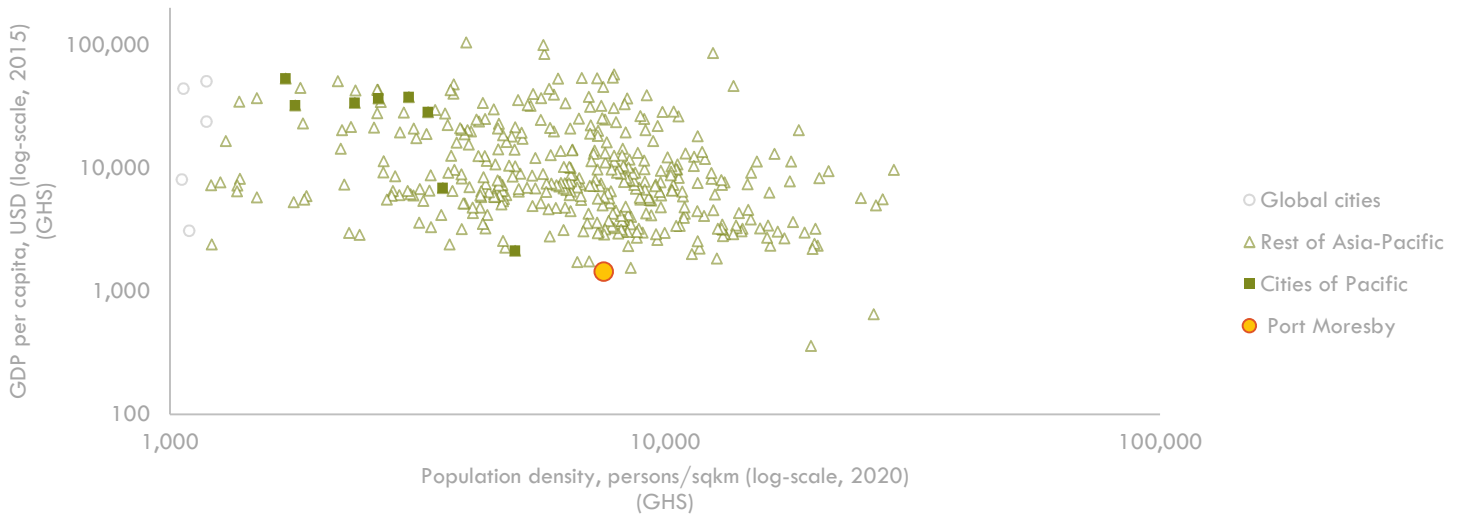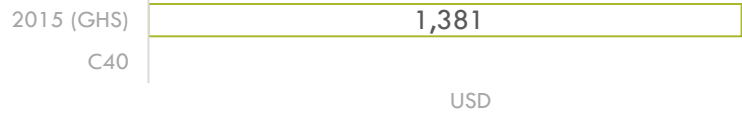
Land area 52 sqkm
(2015) (GHS)

**Population density** 8 thousand per sqkm
(2020) (GHS)

GDP per capita 1 thousand USD
(2015) (GHS)

Population density

C40	
2020 (GHS)	7,534

thousand people per sqkm

GDP per capita

2015 (GHS)	1,381
C40	

USD

Urban Form and Structure

Builtup area per capita
sqm per capita (GHS)

1990	2000	2015	2020
47	38	28	22

Builtup area per capita
(GHS)

Mean block density
blocks per sqkm (2020) (ITDP)

■ Cities of Pacific
□ Rest of Asia-Pacific
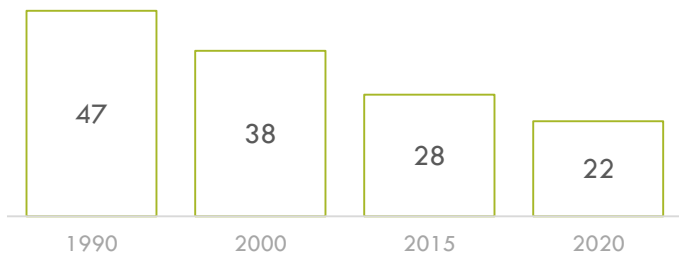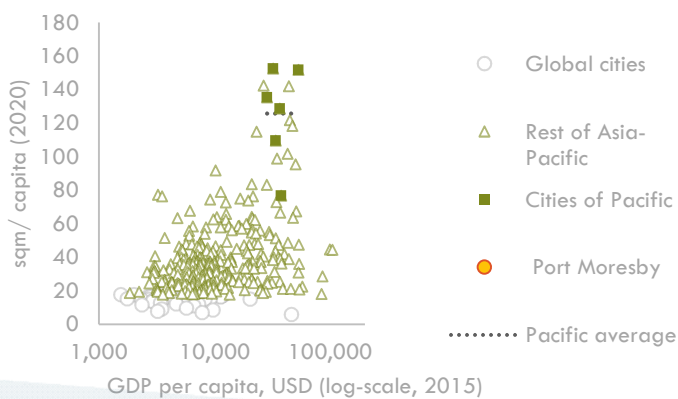
Intersection density   (Oke et.al. (2019) (OSM))

intersections per sqkm

1,002 · 989 · 112

Melbourne · Auckland · Sydney · Port Moresby
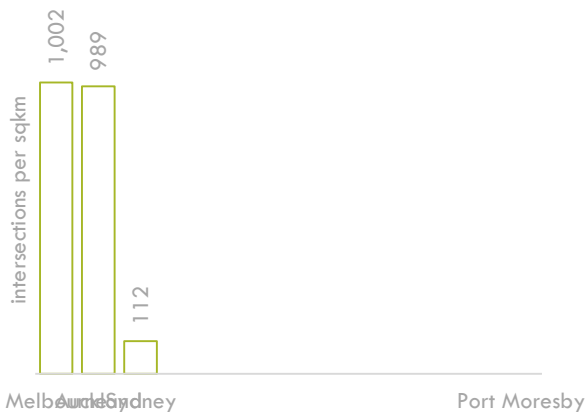
(a) Night time light intensity studies illustrate urban forms and patterns by mapping human activity, infrastructure, and connectivity, offering insights into urban sprawl, density variations, and transport network

Night time light intensity (a)

(GHS)

nano-watt per steradian per square centimetre (2015)
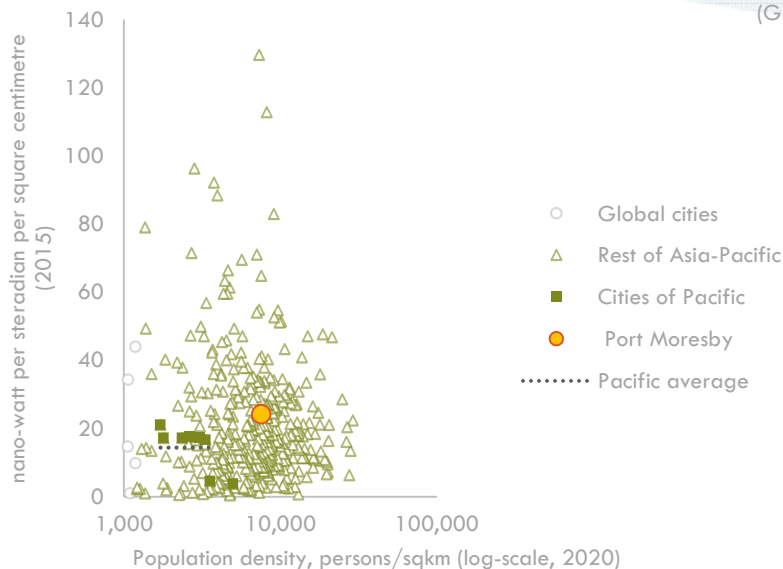
- ○ Global cities
- △ Rest of Asia-Pacific
- ■ Cities of Pacific
- ● Port Moresby
- ·········· Pacific average

Population density, persons/sqkm (log-scale, 2020)

Urban Transport Infrastructure

Road availability

kilometers per thousand population (2019) (Oke et.al. (OSM) and GHS)

Papua New Guinea (national average)

- ■ Cities of Pacific
- ☐ Rest of Asia-Pacific

Road kilometers 400 kilometers

(2013) (Primary data)

Rapid transit infrastructure

(2024) (TE)

- ■ Under construction   ■ Planned

BRT · LRT · Metro

Rapid transit infrastructure

kilometers (ITDP, Primary data)

- ■ Metro   ■ BRT   ■ LRT

1990 1995 2000 2005 2010 2015 2020
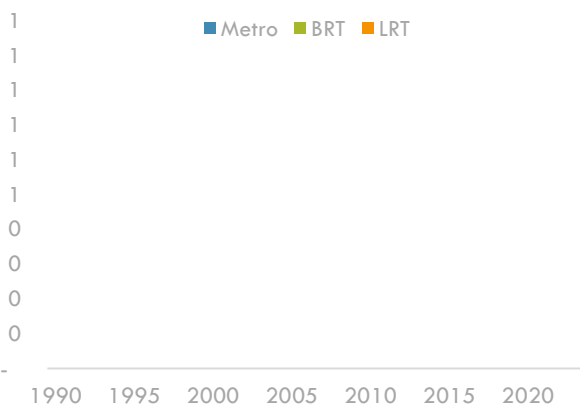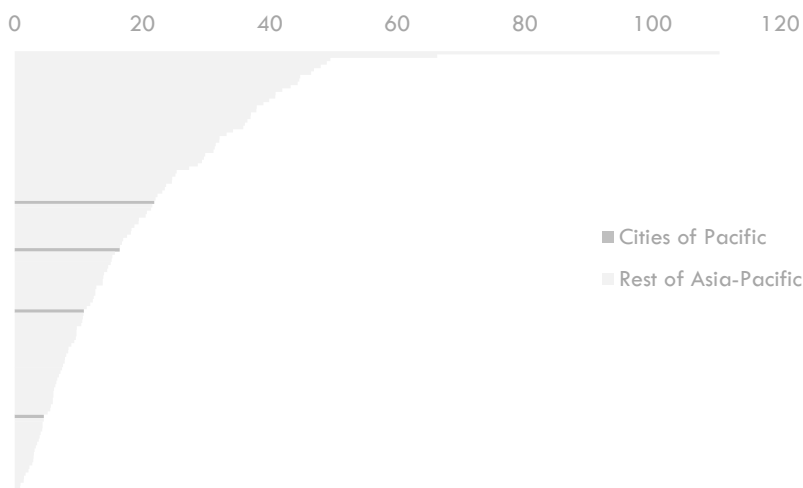
BRT none

LRT none

Metro none

Total none

(2023) (ITDP)

Rapid transit availability

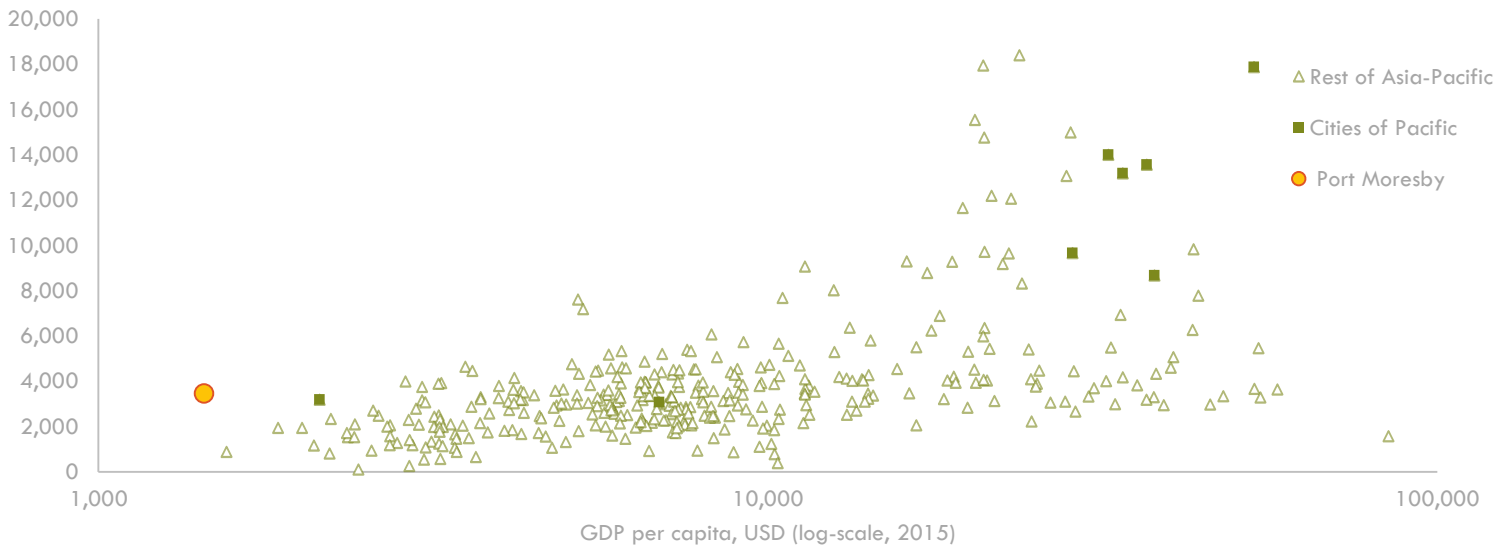kilometers per million urban population (2021) (ITDP, Primary data)

- ■ Cities of Pacific
- ☐ Rest of Asia-Pacific

Approximate transit coverage n.d.

Transport Activity and Services

VKT per capita

Vehicle-kilometer per capita (2022) (ClimateTrace)
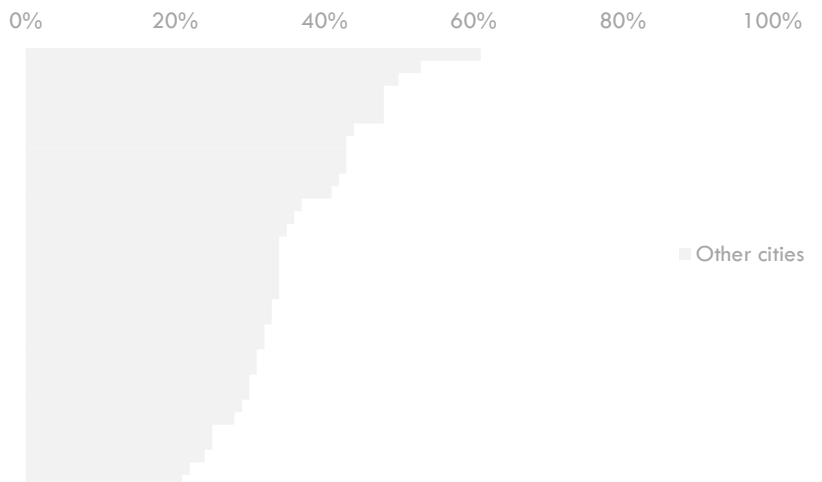

Trips Mode share (b)

Share, %

■ Walking and cycling ■ Private ■ Public transport (bus, ferry, informal public transit, etc)

Google Evironmental Insights Explorer (2023)

Primary data

Oke, et al. (2017)

(b) The methodologies used for mode share assessments vary across different studies, making direct comparison of results inadvisable. Specifically, the Google Environmental Insights Explorer derives its assessments from mobile data analysis, while primary data studies typically rely on survey-based approaches. In contrast, the study by Oke et al. utilizes a combination of secondary data sources.

Metro ridership n.d.

Congestion ranking n.d.

Congestion level

Percent increased travel time vs. uncongested conditions (2021) (TomTom)

■ Other cities

Vehicle motorization

Vehicles per thousand population (Primary data)

■ Vehicles considered: no further information

■ Cities in Pacific

■ Rest of Asia-Pacific
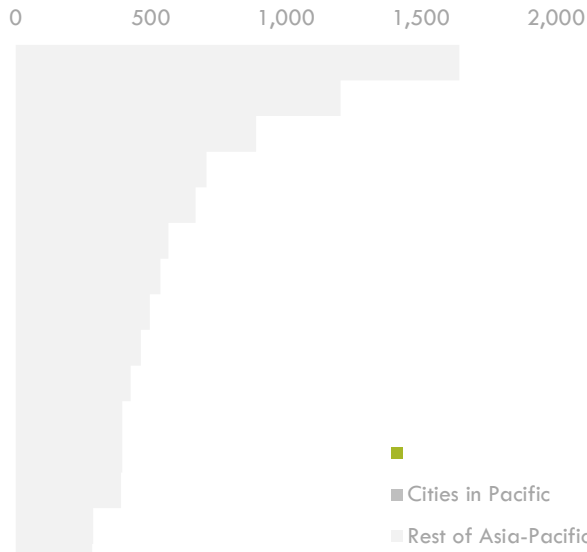
Vehicles registered (c)

Thousand vehicles (Primary data)
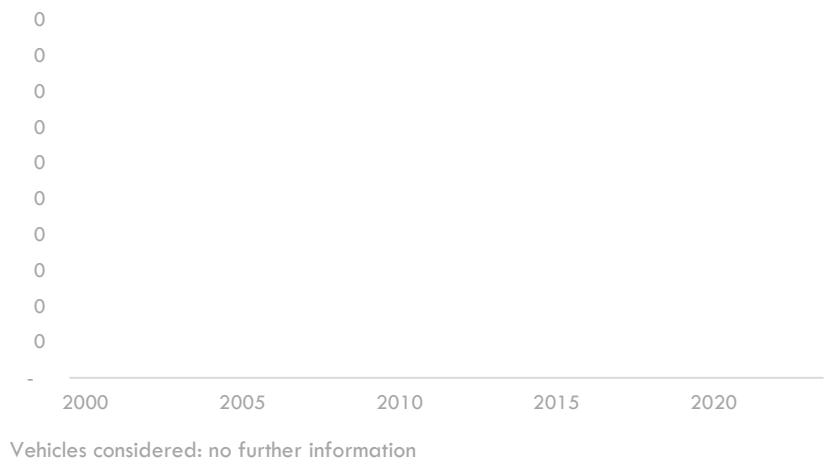
Bus fleet (operational)

Bus (and other public transport) fleet (Primary data)
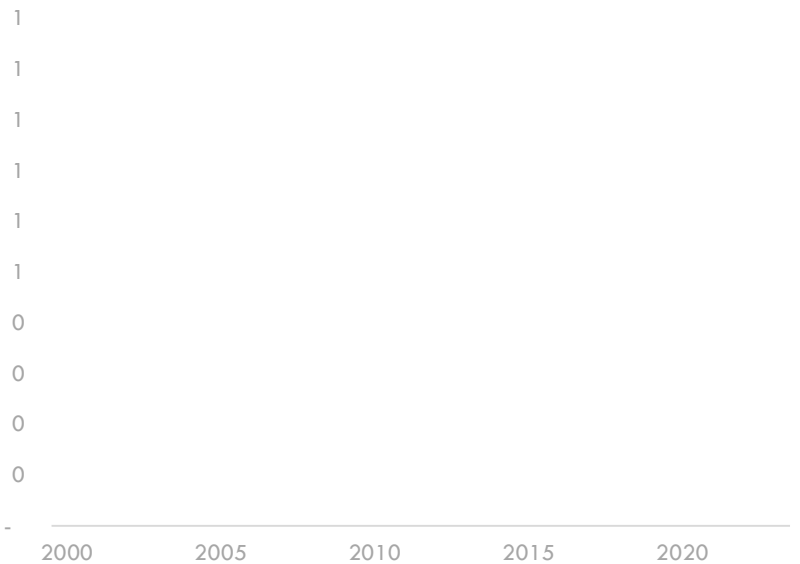
(c) It should be noted that, in most cases, scrapped vehicles are not de-registered, which may result in slightly inflated numbers.

Urban Access

Access to urban public transport

Share of population with convenient access to public transport (2023) (CIESIN)

GDP per capita, USD (log-scale, 2015)

○ Global cities
△ Rest of Asia-Pacific
■ Cities of Pacific
⋯⋯ Pacific average
● Port Moresby

Access to urban public transport (d) - by source

Share of population with convenient access to public transport
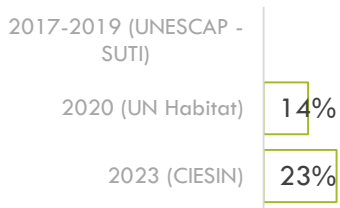
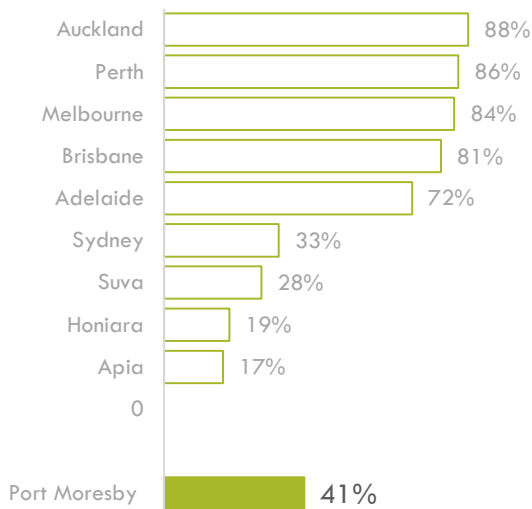|	
2017-2019 (UNESCAP - SUTI)	
2020 (UN Habitat)	14%
2023 (CIESIN)	23%

(d) "Access to urban public transport" is computed as share of population who live within a walking distance (along a street network) of 500m to a low capacity public transport system (eg bus, tram) and 1000m to a high capacity public transport system (eg trains, ferries, etc). Only public transport stops which are mapped are included in the analysis which may include both formal and informal stops. Many cities (mostly in the developing countries) have informal public transport systems which are not fully mapped - meaning that they may record higher levels of access to public transport than reported in this dataset.

(e) People Near Services measures the percentage of the city's population living within a 1km walk of both healthcare and education. These services are especially vital for babies, toddlers, and their caregivers, who should be able to reach them on foot.

(f) Percentage of the city's population that lives within 100m of a car-free place. These car-free places include pedestrian-only alleyways, nature trails, playgrounds, pedestrianized squares, and anywhere else that is not used by cars and trucks (except, in some cases, emergency vehicles).
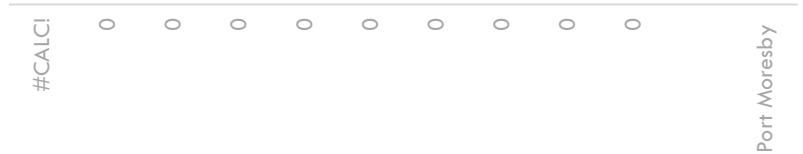
People near services (both healthcare and schools) (e)

(Share of population) vs. highest 10 cities in Pacific (2020) (ITDP)

People near car-free places (f)

(Share of population) vs. highest 10 cities in Pacific (2020) (ITDP)

People near open public space

(Share of population) vs. highest 10 cities in Pacific (2020) (UN Habitat)

City	Share
Auckland	88%
Perth	86%
Melbourne	84%
Brisbane	81%
Adelaide	72%
Sydney	33%
Suva	28%
Honiara	19%
Apia	17%
0	
Port Moresby	41%
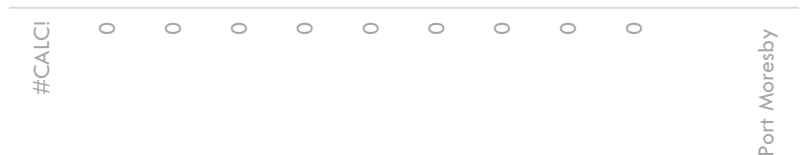
People near protected bikelanes

(Share of population) vs. highest 10 cities in Pacific (2020) (ITDP)

City	Share
Melbourne	43%
Perth	40%
Brisbane	30%
Sydney	29%
Auckland	20%
Adelaide	17%
Port Moresby	
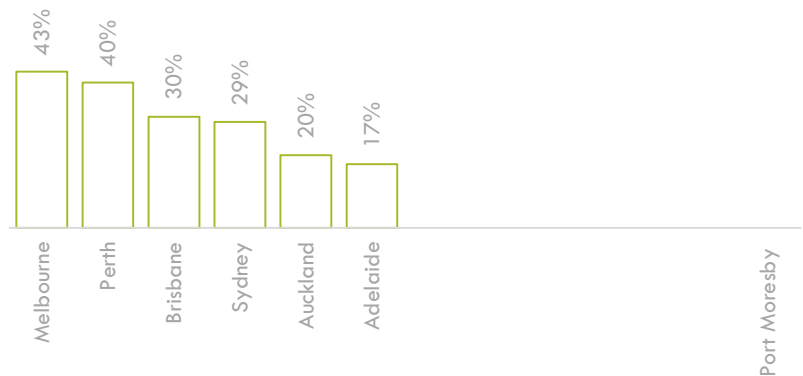
Transport externalities

Road transport - CO2 emissions

Thousand tonnes (2022) (ClimateTrace)

- △ Rest of Asia-Pacific
- ◼ Cities of Pacific
- 🔴 Port Moresby

GDP per capita, USD (2015)
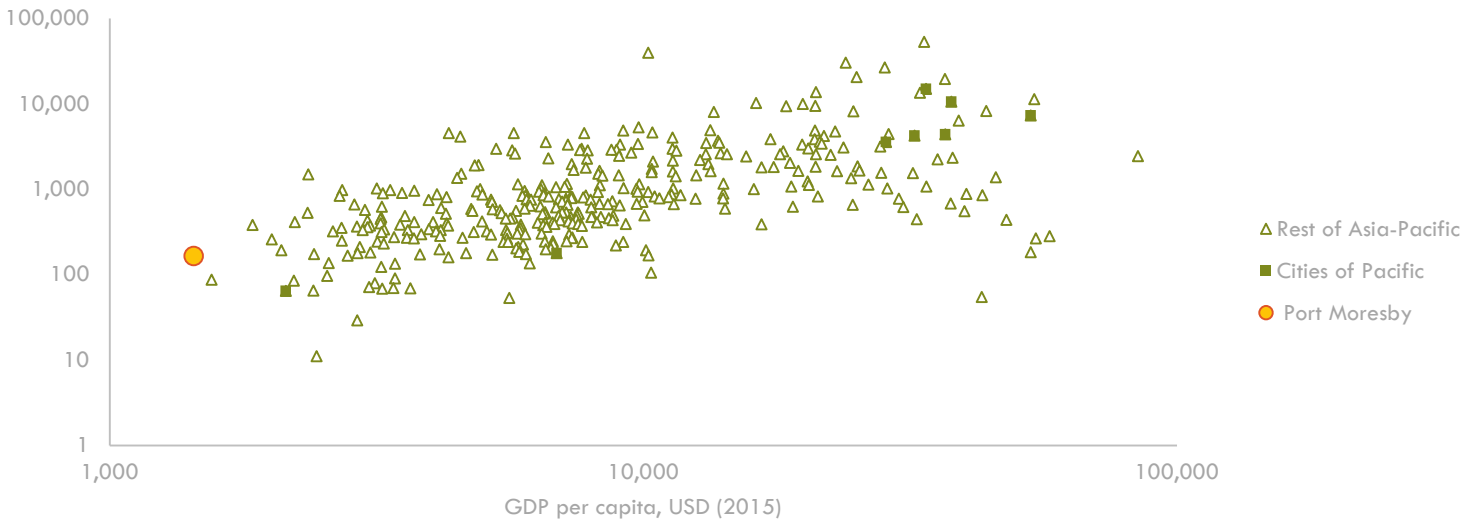
Road transport - N2O emissions

Tonnes (2022) vs. highest 10 cities in Pacific (ClimateTrace)

City	Value
Port Moresby	4
Melbourne	190
Sydney	135
Perth	93
Brisbane	56
Adelaide	54
Auckland	49
Suva	3
Honiara	1
	0
	0
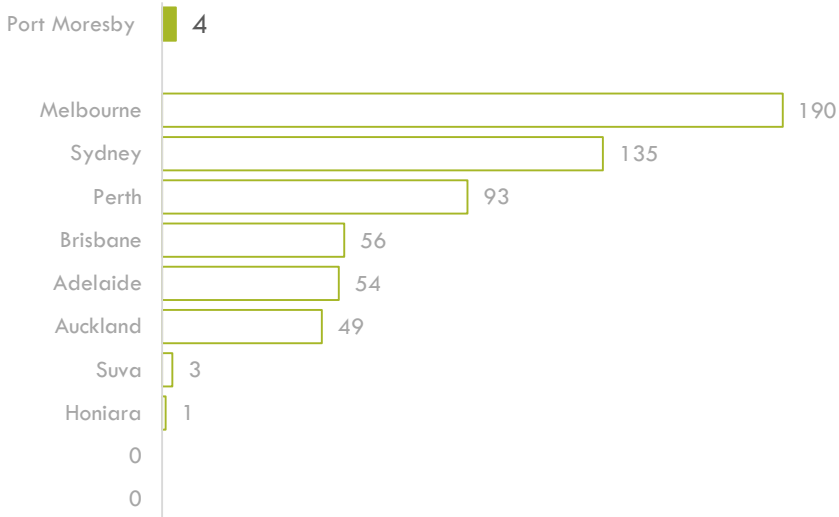
Population exposure to disasters

Share of population (2015) (GHS)

- Exposed to floods: 0%
- Exposed to storm surges: 100%
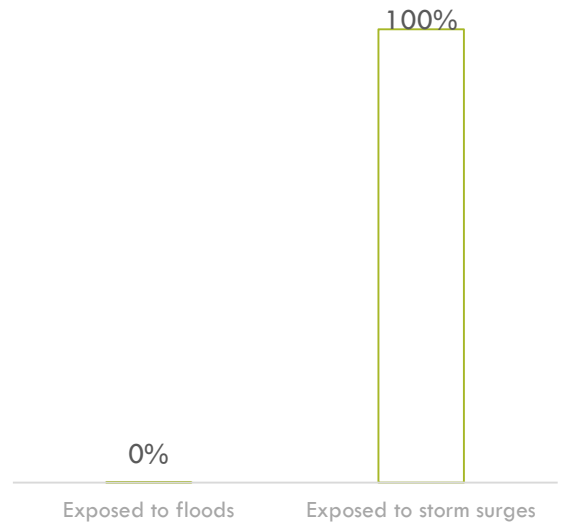
Road transport - CH4 emissions

Tonnes (2022) vs. highest 10 cities in Pacific (ClimateTrace)

City	Value
Port Moresby	20
Melbourne	380
Sydney	270
Perth	187
Brisbane	112
Adelaide	108
Auckland	69
Suva	5
Honiara	2
	0
	0
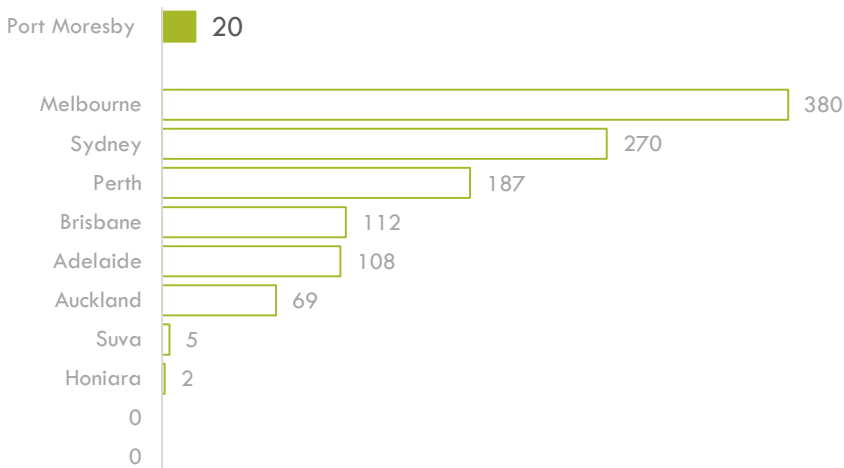
Urban built-up area exposure to disasters

Share of urban area (2020) (GHS)

- Exposed to floods: 0%
- Exposed to earthquakes: 100%
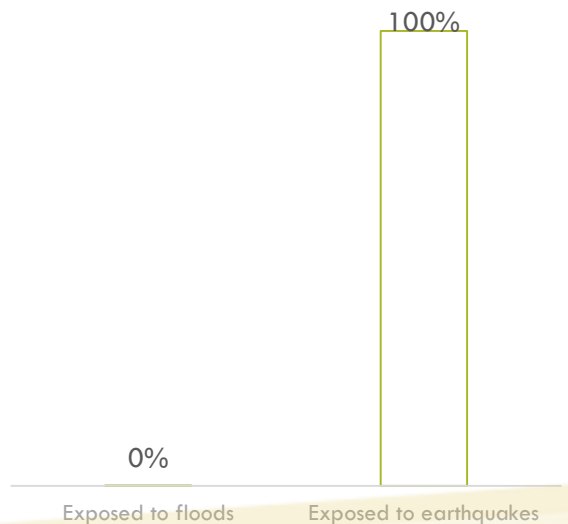
Transport PM 2.5 emissions
(GHS)
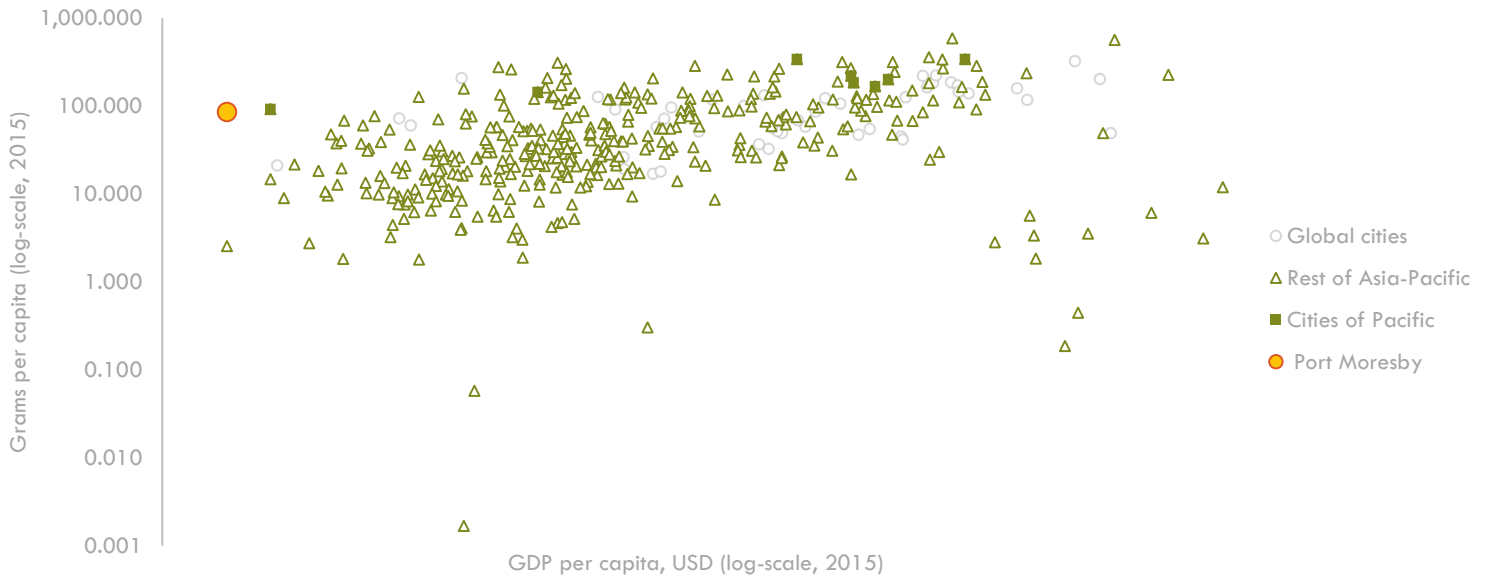
Grams per capita (log-scale, 2015)

1,000.000
100.000
10.000
1.000
0.100
0.010
0.001

GDP per capita, USD (log-scale, 2015)

- Global cities
- Rest of Asia-Pacific
- Cities of Pacific
- Port Moresby

NO2 concentration
ug/m3 (vs. highest 5 cities in Pacific) (WHO)

Auckland, Melbourne, Sydney, Brisbane, Adelaide, Port Moresby

PM 2.5 concentration
ug/m3 (vs. highest 5 cities in Pacific) (WHO)

Sydney, Suva, Perth, Melbourne, Adelaide, Port Moresby

Road crash fatality rate
Deaths per 100,000 population

Port Moresby (Primary data), Port Moresby (ESCAP-SUTI), Papua New Guinea (2021)
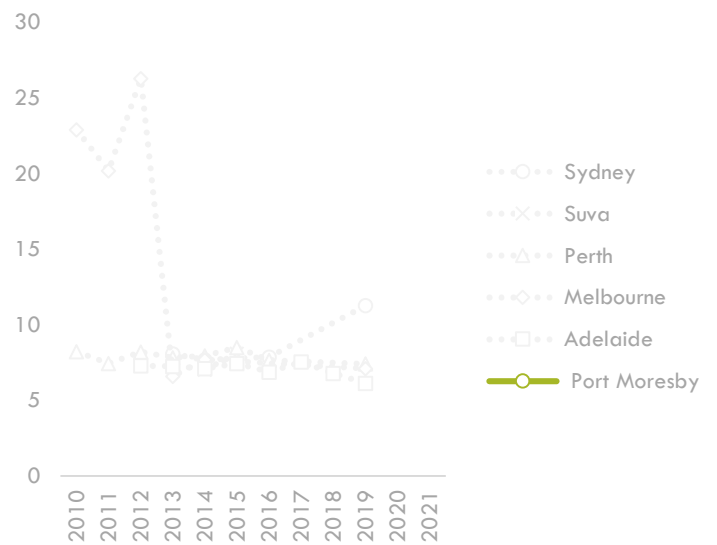
Road crash fatality rate
Deaths per 100,000 population (Primary data)

9
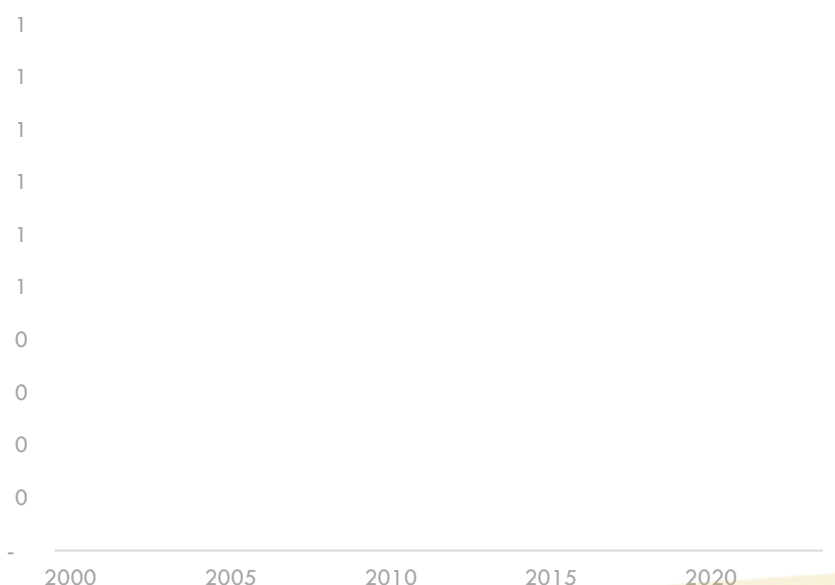
Transport related Indices

Container port performance index

Index is resultant of the sum of a weighted average of indices for each of the five vessel sizes: feeders (<1,500 TEUs), intra-regional (1,500–5,000 TEUs), intermediate (5,000–8,500 TEUs), neo-Panamax (8,500–13,500 TEUs), and ultra-large container carriers (>13,500 TEU)

Port Moresby 298th out of 370 cities

(2023) (WB)

Critical Infrastructures Spatial Index for the transportation sector

CISI is an index that spatially explicit indicates the coverage or lack of transport infrastructure. The CISI is expressed in a dimensionless value ranging between 0 (no CI intensity) and 1 (highest CI intensity). The index aggregates high resolution geospatial information on multiple CI assets per CI system

Port Moresby 0.03/1.00

(2020) (GHS)

SUTI Geometric Mean

The geometric mean in the Sustainable Urban Transport Index (SUTI) by UNESCAP is a mathematical approach to aggregate scores across its 10 sub-indicators, including public transport ridership, safety, affordability, air quality, and access to transport

Port Moresby n.d.

Cities in Motion index ranking

The Cities in Motion Index (CIMI) is a composite indicator evaluating cities across nine dimensions—governance, urban planning, technology, environment, international profile, social cohesion, human capital, mobility, and economy—focusing on sustainability and quality of life. It uses a weighted aggregation model to combine sub-indicators for a holistic assessment of urban performance

Port Moresby n.d.

Cities in Motion index ranking by subcomponent

Ranking (vs. other Cities of Pacific) (2024) (IESE)

Transport relevant policy documents

Year published	Document name
2006	National capital district urban development plan
2010	Port Moresby, Papua New Guinea Cities And Climate Change Initiative
2013	Port Moresby, Papua New Guinea – Climate Change Vulnerability Assessment
2018	Mapping Port Moresby using Safetipin Technology and Apps
2020	Port Moresby Towards 2030
2023	Papua New Guinea: Port Moresby Sustainable Urban Transport Mobility Approaches

References

ATO Urban Policy Tracker — Asian Transport Outlook (ATO). (2024). ATO Urban Policy Tracker. https://asiantransportoutlook.com/

C40 — C40. (2024). Greenhouse gas emissions interactive dashboard. https://www.c40knowledgehub.org/s/article/C40-cities-greenhouse-gas-emissions-interactive-dashboard?language=en_US

CIESIN — CIESIN. (2023). SDG Indicator 11.2.1: Urban Access to Public Transport, 2023 Release. https://www.earthdata.nasa.gov/data/catalog/sedac-ciesin-sedac-sdgi-uapt-2023-2023.00

ClimateTrace — Climate Trace. (2024). Data Downloads. https://climatetrace.org/data

GHS — GHS. (2024). GHSL - Global Human Settlement Layer. https://human-settlement.emergency.copernicus.eu/ghs_ucdb_2024.php

Google Evironmental Explorer — Google. (2024). Environmental Insights Explorer. https://insights.sustainability.google/places/ChIJbTgmYNLIlzMR0HiSrNoj7V8?ty=2023&hl=en-US

IESE — IESE. (2024). IESE Cities in Motion Index. https://www.iese.edu/media/research/pdfs/ST-0649-E.pdf

ITDP — ITDP. (2024). The Atlas of Sustainable City Transport. https://itdp.org/publication/the-atlas-of-sustainable-city-transport/

Oke et al. — Oke et al. (2019). A novel global urban typology framework for sustainable mobility futures. https://iopscience.iop.org/article/10.1088/1748-9326/ab22c7#erlab22c7s3

OSM — OSM. (n.d.). Open Stret Map. https://www.openstreetmap.org/#map=4/21.84/82.79

Primary data — This includes city official reports or MDB/ Research organisation/ Third party report endorced/ accepted/ guided by the city government

TE — Transport Politic. (n.d.). Transit Explorer Global Data. https://www.thetransportpolitic.com/transit-explorer/transit-explorer-data-and-sources/

TomTom — Tom Tom. (2023). Traffic index Ranking. https://www.tomtom.com/traffic-index/ranking/

UITP - GUMI — UITP. (2022). Global Urban Mobility Indicators 2022. https://www.uitp.org/publications/global-urban-mobility-indicators-2022

UN Habitat — UN Habitat. (2021). Urban Indicators Database. https://data.unhabitat.org/

UNESCAP - SUTI — UNESCAP. (n.d.). Sustainable Urban Transport Index (SUTI). https://www.unescap.org/our-work/transport/suti

WHO — WHO. (2024). WHO Ambient Air quality database. https://www.who.int/data/gho/data/themes/air-pollution/who-air-quality-database

WB — WB. (2024). The Container Port Performance Index 2023. https://documents1.worldbank.org/curated/en/099060324114539683/pdf/P175833138892300871be641a5ea7b90e0e6.pdf