ALMATY, KAZAKHSTAN

URBAN TRANSPORT PROFILE

December 2024

Asian Transport Observatory

Summary

Almaty, the largest city in Kazakhstan with a population of 2.1 million in 2020, boasts a robust public transport system that plays a crucial role in the city's mobility. Despite significant economic growth, with GDP per capita increasing from $7,000 to $24,000 between 2000 and 2015, Almaty faces transportation challenges. While public transport and active mobility account for 59% of all trips, the city's road infrastructure is underdeveloped compared to the national average, with virtually no kilometers of road per thousand capita. This highlights a potential for improvement in road infrastructure to support the growing population and its transportation needs.

Despite the limitations in road infrastructure, Almaty has made progress in developing its public transport network. The city has seen a 49% increase in public transport routes since 2017, with buses accounting for most passenger traffic. Although currently limited to 13.4 km and 11 stations, Almaty's metro system is essential to the city's public transport network. Efforts are underway to expand the metro system, with two new stations planned for 2025, indicating a commitment to improving public transport infrastructure.

Almaty's commitment to sustainable transport is evident in its efforts to shift towards a low-carbon transport system. The city's public transport mainly runs on electricity, CNG, and diesel, with plans to phase out diesel-powered vehicles eventually. Furthermore, the introduction of dedicated bus lanes, bicycle paths, and a bicycle-sharing system demonstrates a focus on promoting active mobility and reducing reliance on private vehicles. However, challenges remain in addressing traffic congestion and the depreciation of the bus fleet. With continued investment and focus on sustainable transport solutions, Almaty can further enhance its public transport system and improve its residents' overall quality of urban mobility.

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 2.1 million
(2020) (GHS)

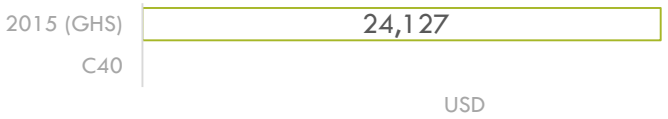
Land area 318 sqkm
(2015) (GHS)

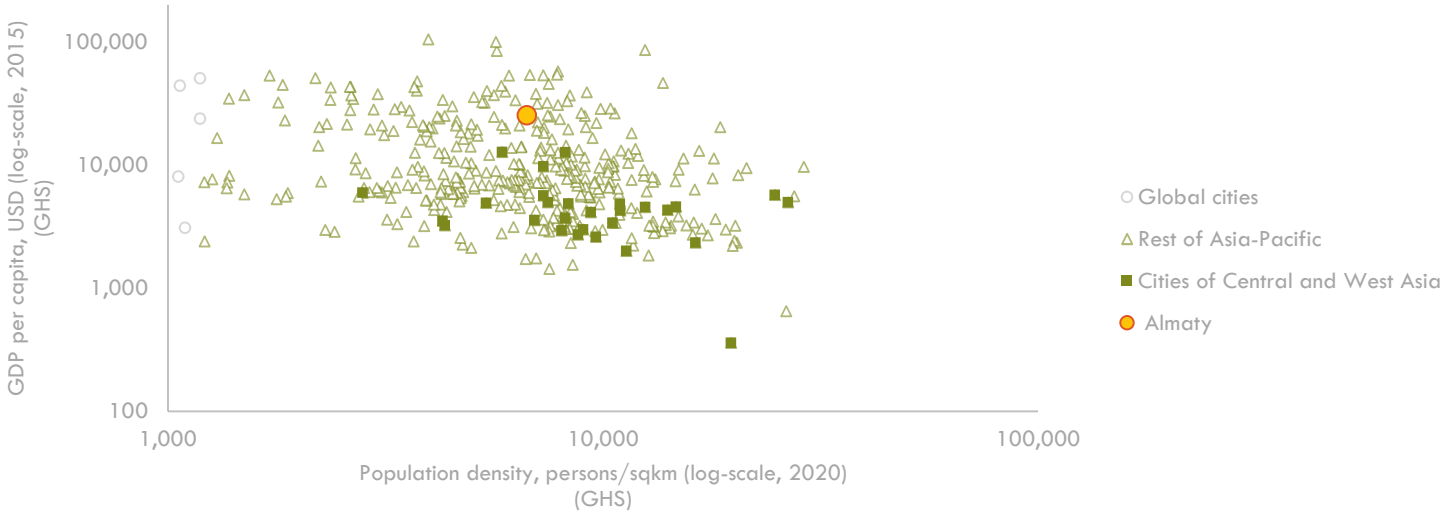
Population density 7 thousand per sqkm
(2020) (GHS)

GDP per capita 24 thousand USD
(2015) (GHS)

Population density

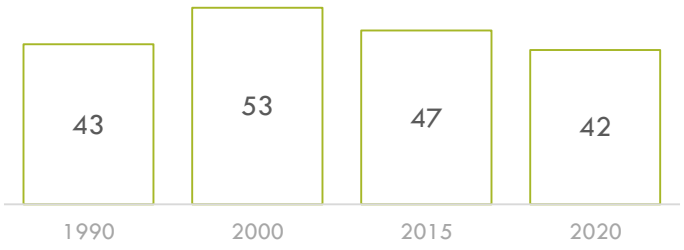
GDP per capita



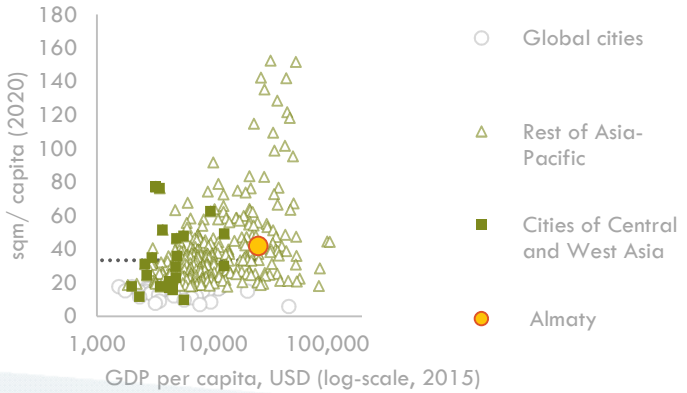


Urban Form and Structure

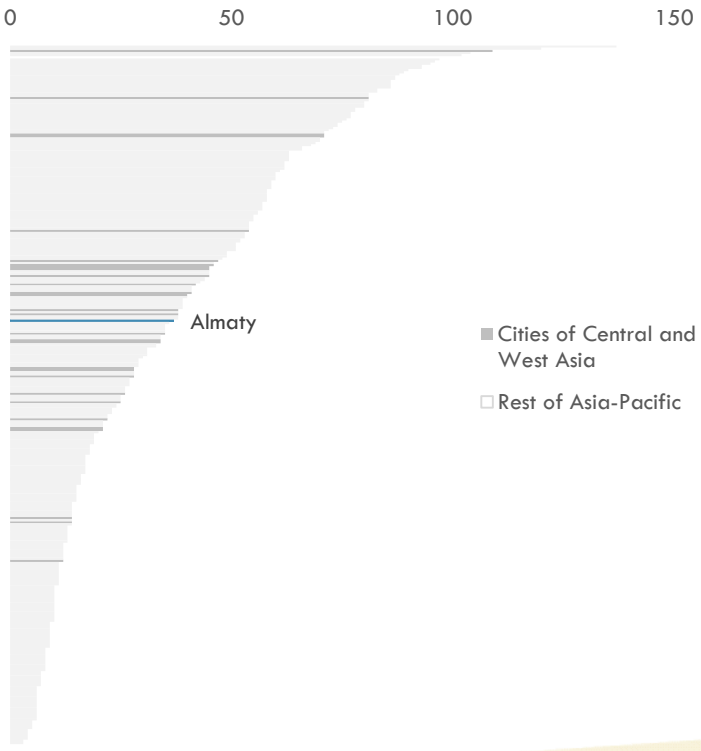
Builtup area per capita
sqm per capita (GHS)



Builtup area per capita
(GHS)

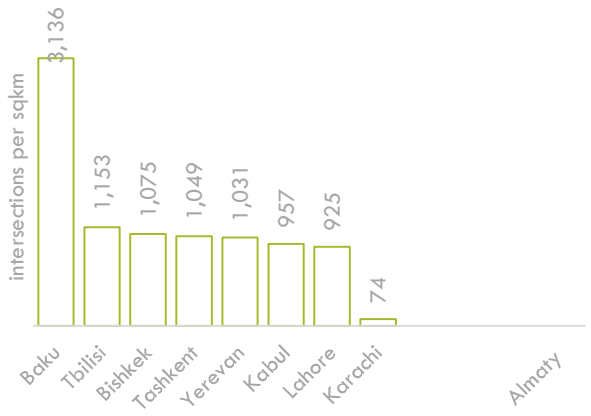


Mean block density
blocks per sqkm (2020) (ITDP)



Intersection density

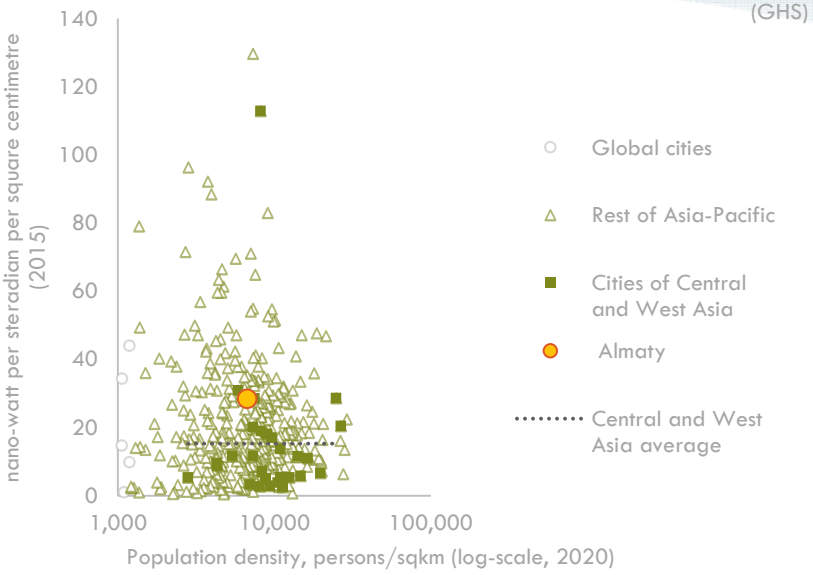
(Oke et.al. (2019) (OSM))



(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)

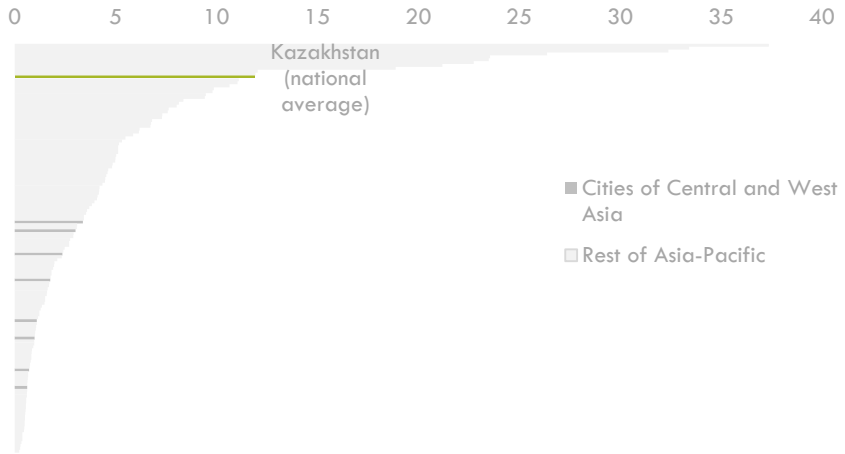
(GHS)



Urban Transport Infrastructure

Road availability

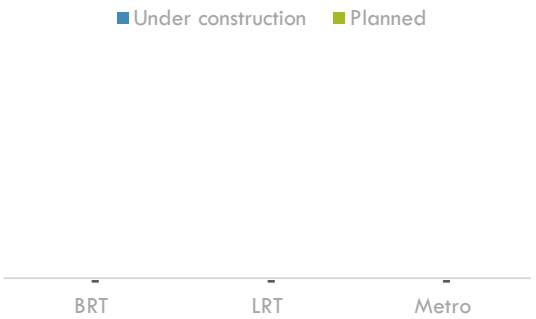
kilometers per thousand population (2019) (Oke et.al. (OSM) and GHS)



Road kilometers n.d.

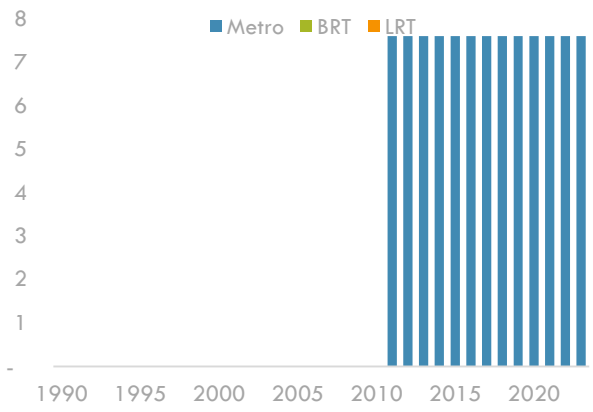
Rapid transit infrastructure

(2024) (TE)



Rapid transit infrastructure

kilometers (ITDP, Primary data)



BRT none

LRT none

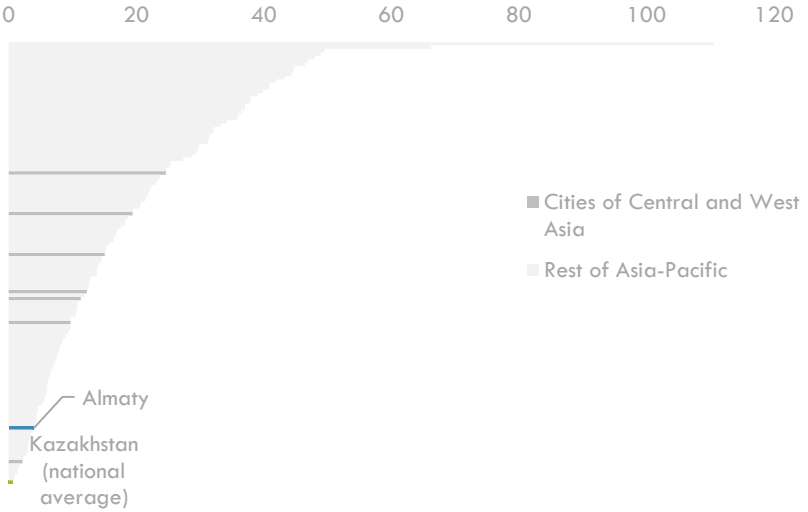
Metro 8 kilometers

Total 8 kilometers

(2023) (ITDP)

Rapid transit availability

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



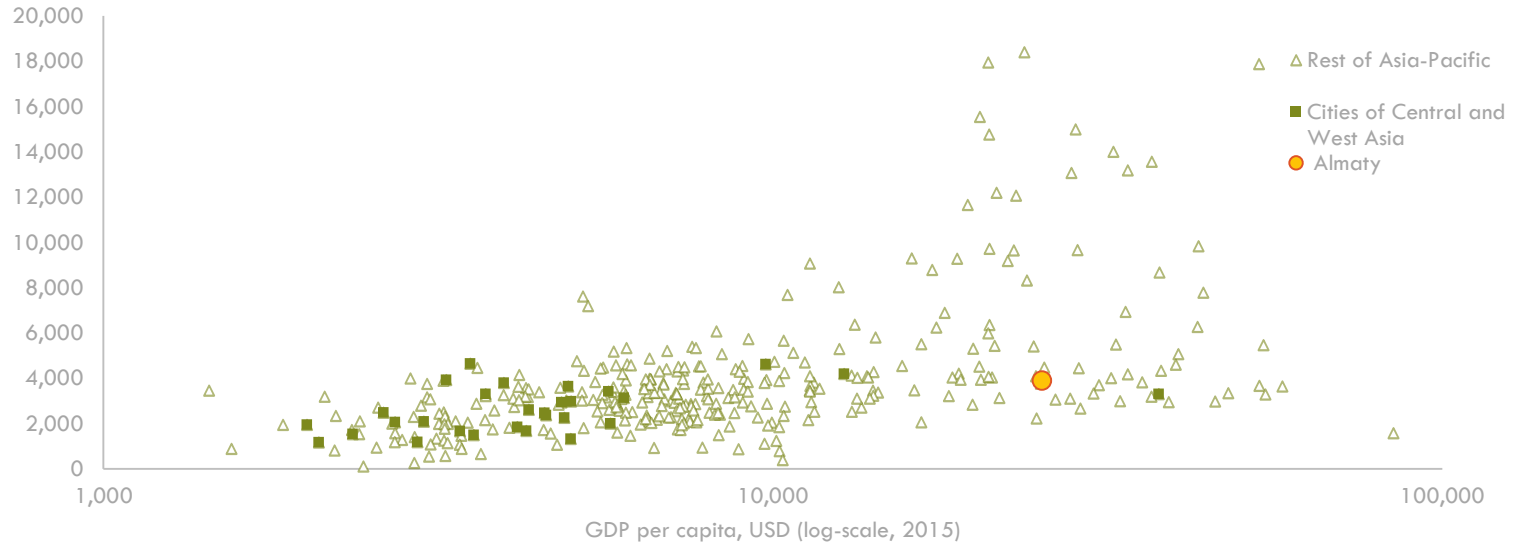
Approximate transit coverage 5% of land area

(2015) (ITDP and GHS (European Commission))

Transport Activity and Services

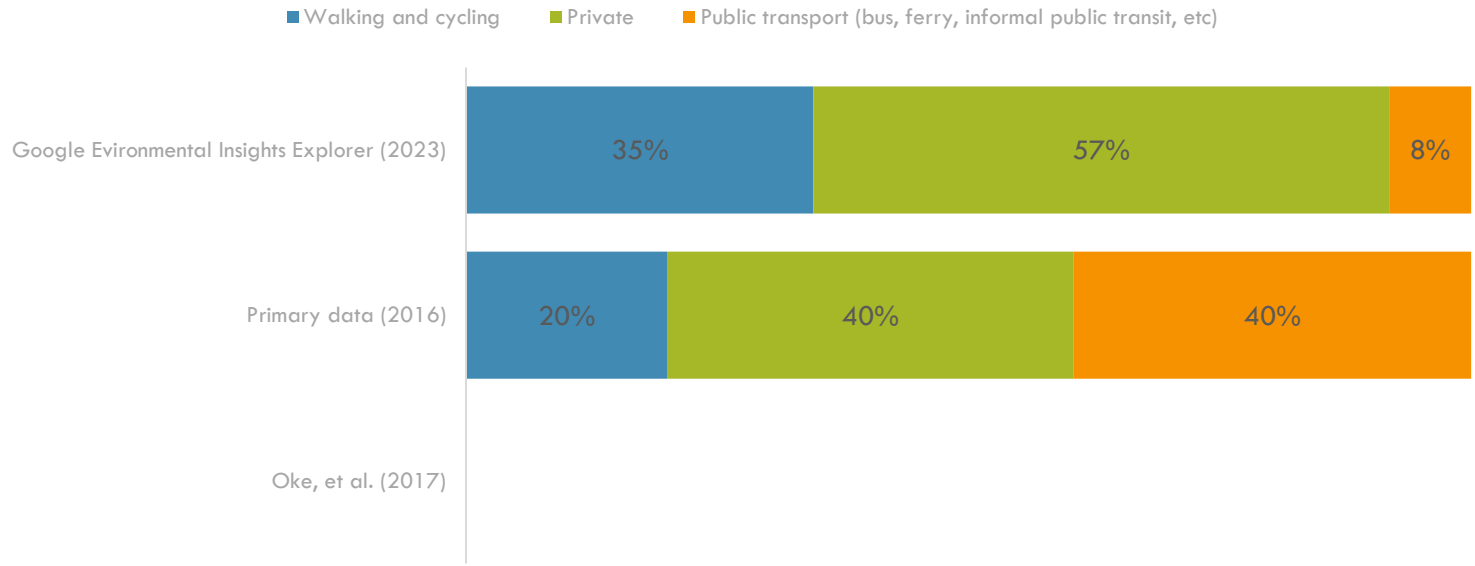
VKT per capita

Vehicle-kilometer per capita (2022) (ClimateTrace)



Trips Mode share (b)

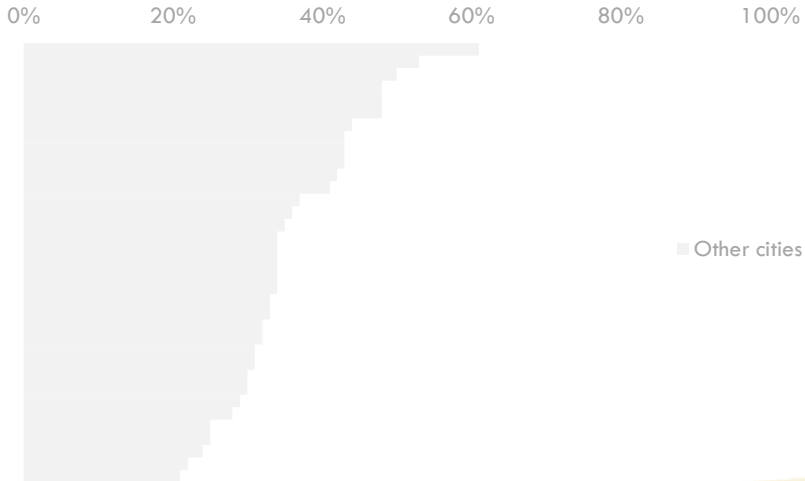
Share, %



(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.

Congestion level

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



Metro ridership

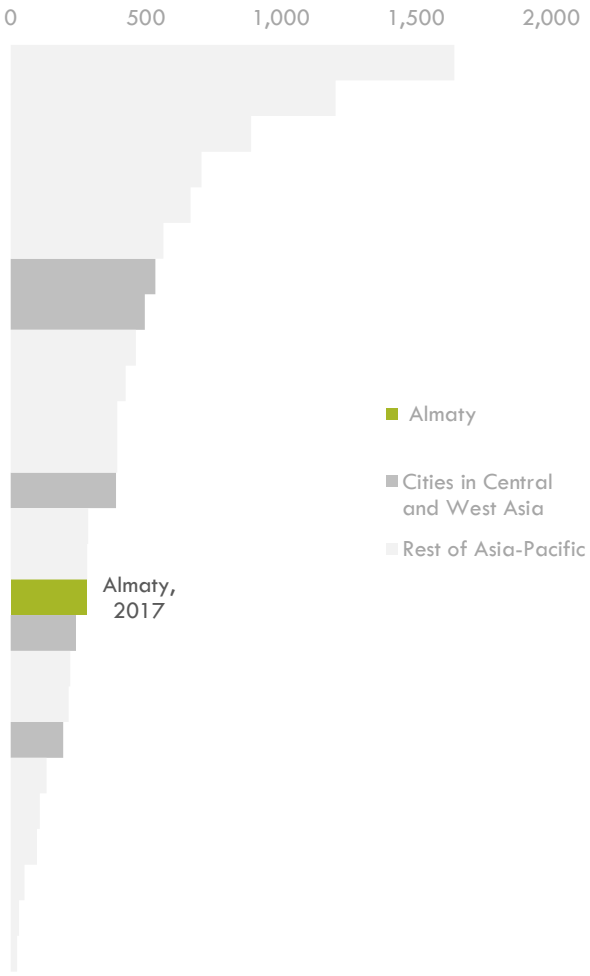
n.d.

Congestion ranking

n.d.

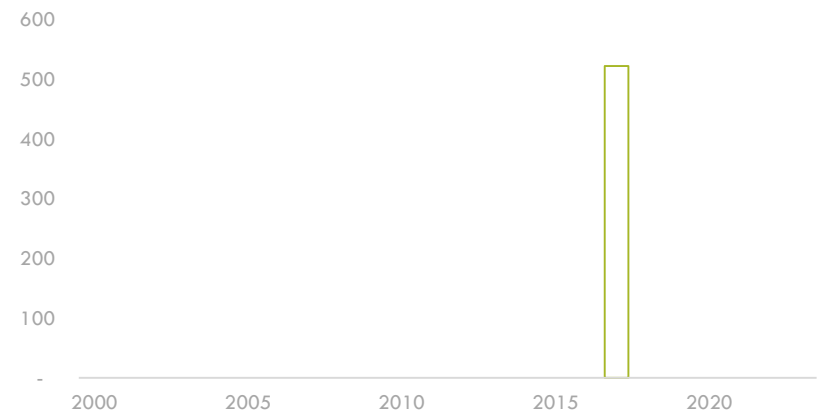
Vehicle motorization

Vehicles per thousand population (Primary data)



Vehicles registered (c)

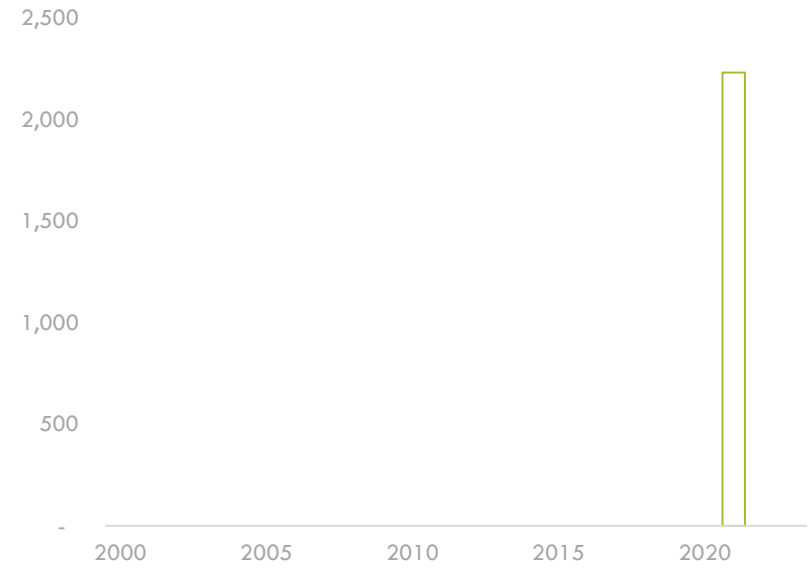
Thousand vehicles (Primary data)



Vehicles considered: no further information

Bus fleet (operational)

Bus (and other public transport) fleet (Primary data)

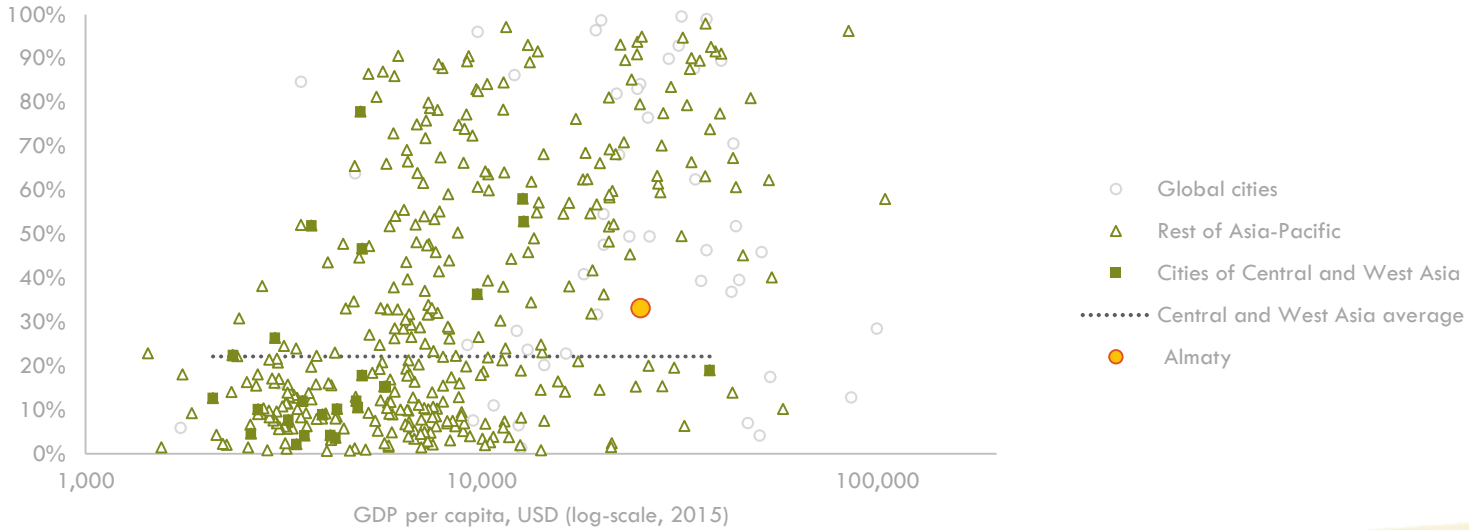


(c) It should be noted that, in most cases, scrapped vehicles are not de-registered, which may result in slightly inflated numbers.

Urban Access

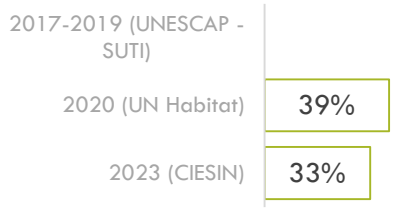
Access to urban public transport

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



Access to urban public transport (d) - by source

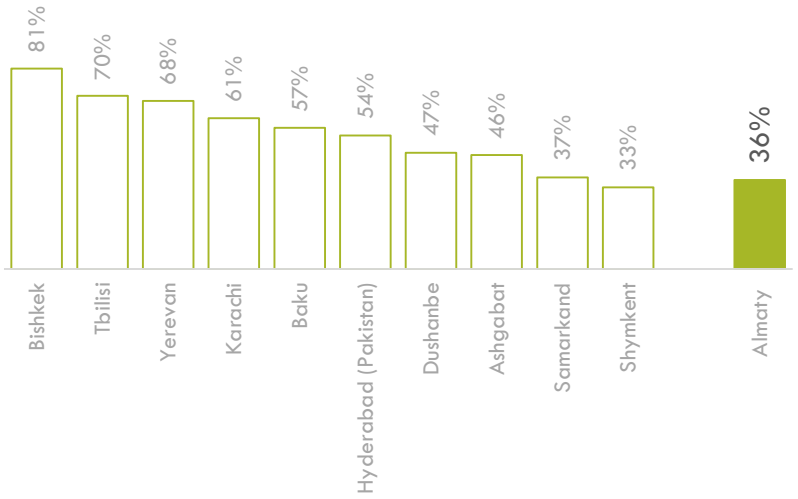
Share of population with convenient access to public transport



(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.

People near services (both healthcare and schools) (e)

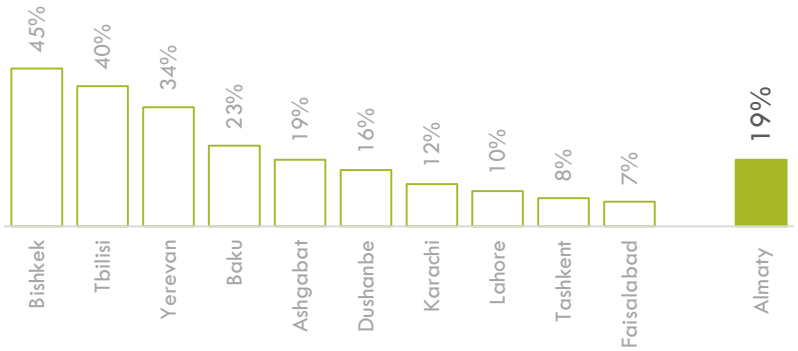
(Share of population) vs. highest 10 cities in Central and West Asia (2020) (ITDP)



(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.

People near car-free places (f)

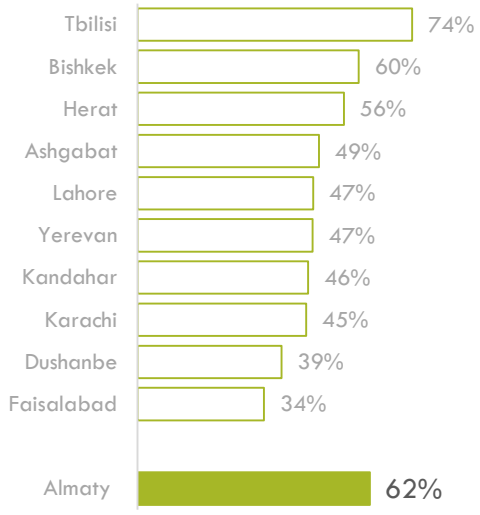
(Share of population) vs. highest 10 cities in Central and West Asia (2020) (ITDP)



(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).

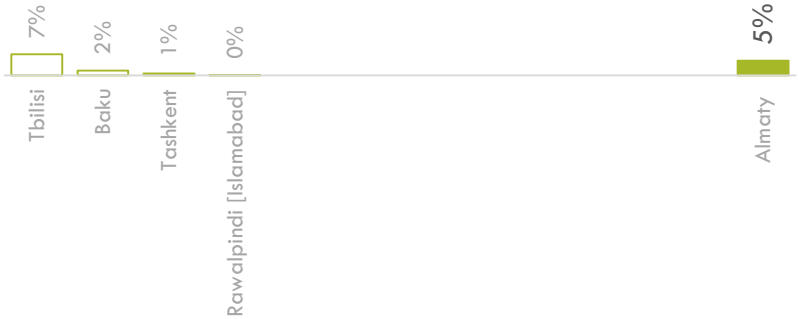
People near open public space

(Share of population) vs. highest 10 cities in Central and West Asia (2020) (UN Habitat)



People near protected bikelanes

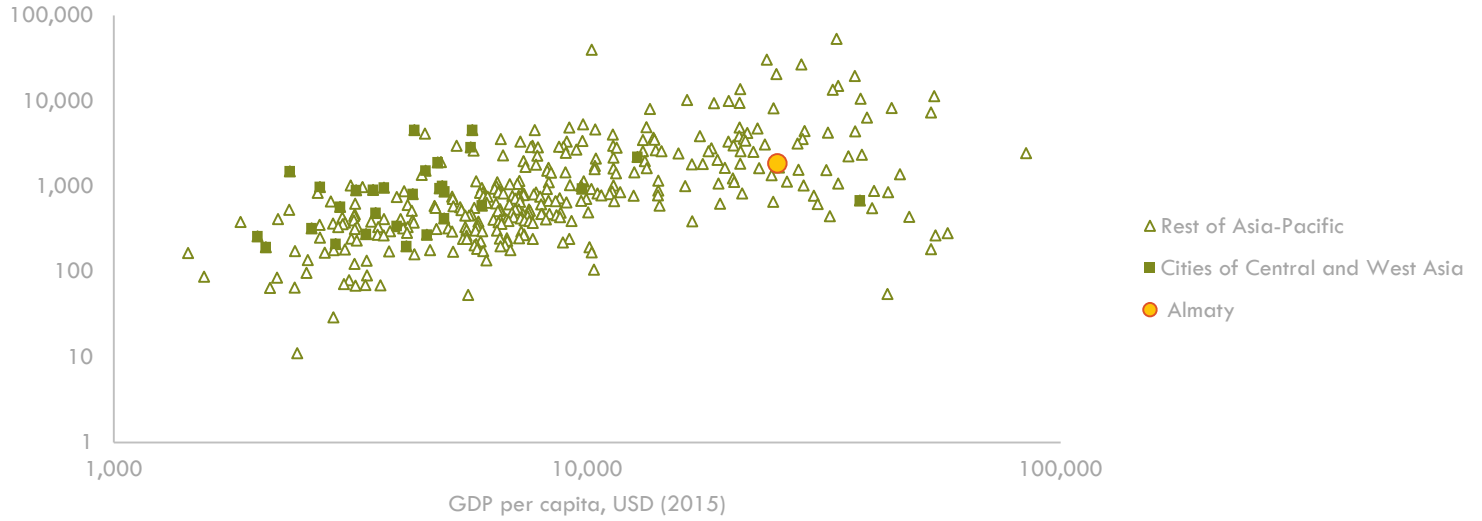
(Share of population) vs. highest 10 cities in Central and West Asia (2020) (ITDP)



Transport externalities

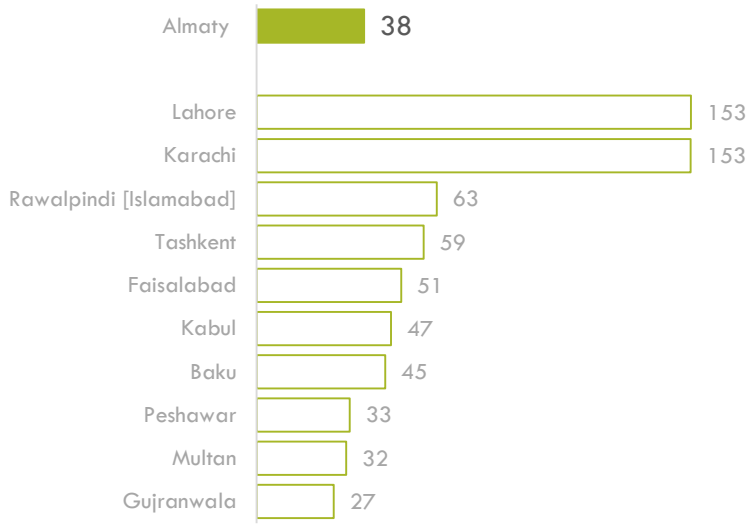
Road transport - CO2 emissions

Thousand tonnes (2022) (ClimateTrace)



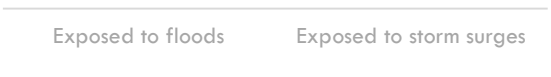
Road transport - N2O emissions

Tonnes (2022) vs. highest 10 cities in Central and West Asia (ClimateTrace)



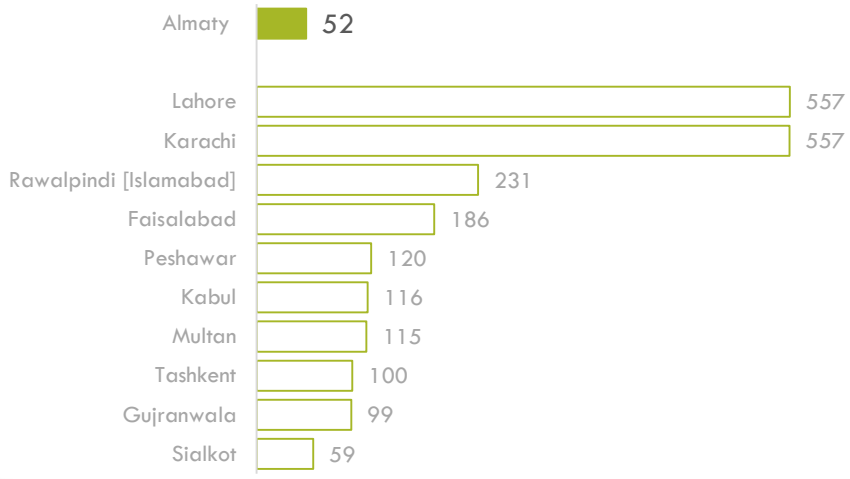
Population exposure to disasters

Share of population (2015) (GHS)



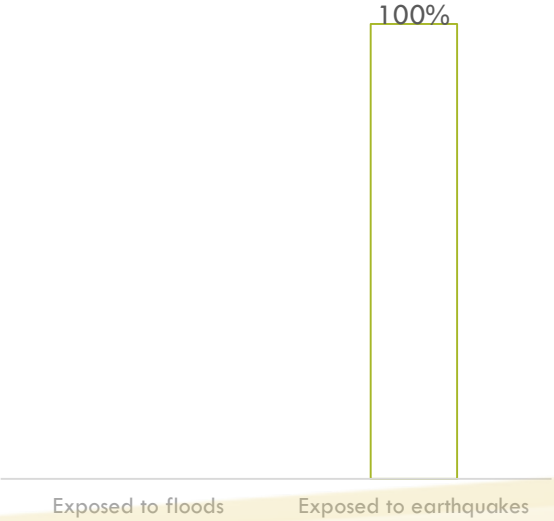
Road transport - CH4 emissions

Tonnes (2022) vs. highest 10 cities in Central and West Asia (ClimateTrace)



Urban built-up area exposure to disasters

Share of urban area (2020) (GHS)

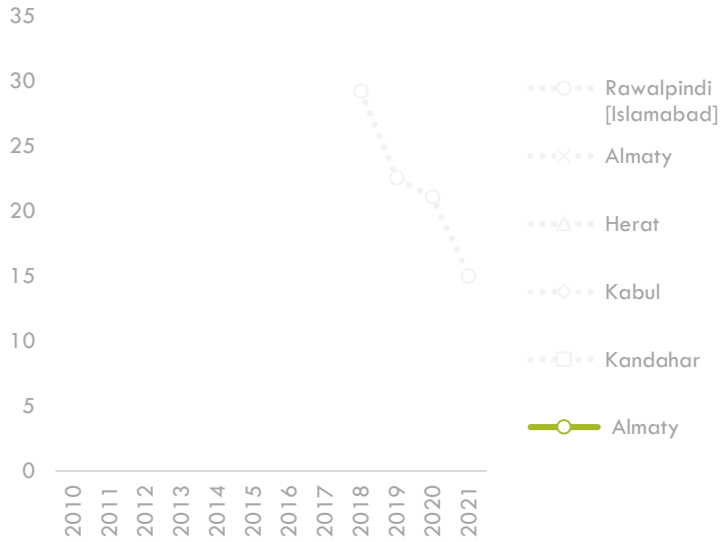


Transport PM 2.5 emissions

(GHS)

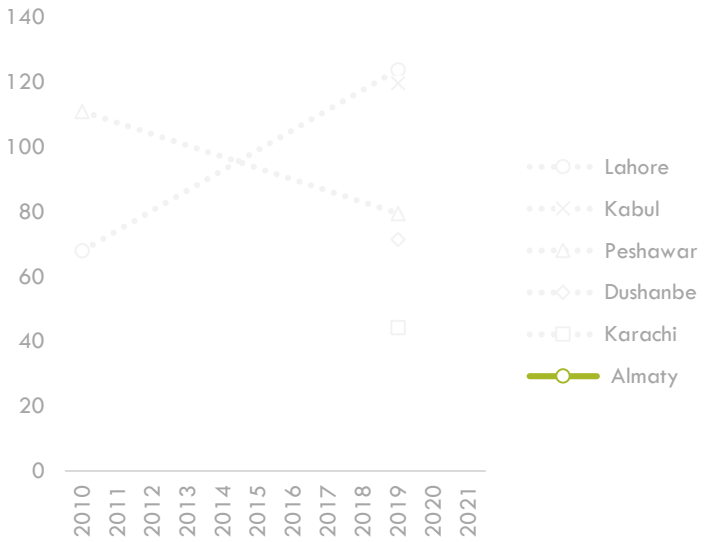
NO2 concentration

ug/m3 (vs. highest 5 cities in Central and West Asia) (WHO)



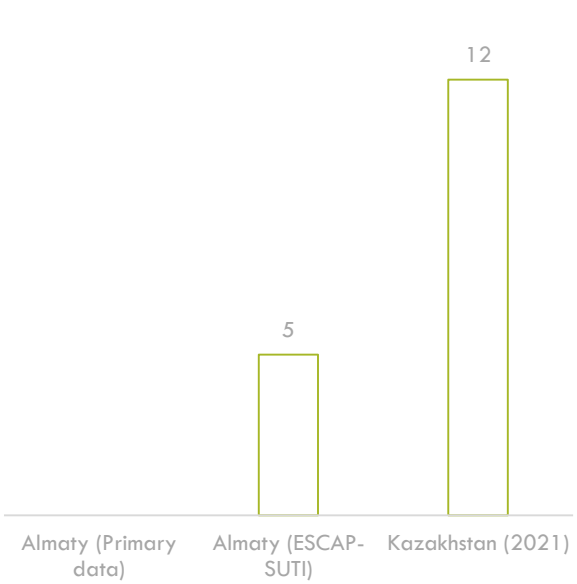
PM 2.5 concentration

ug/m3 (vs. highest 5 cities in Central and West Asia) (WHO)



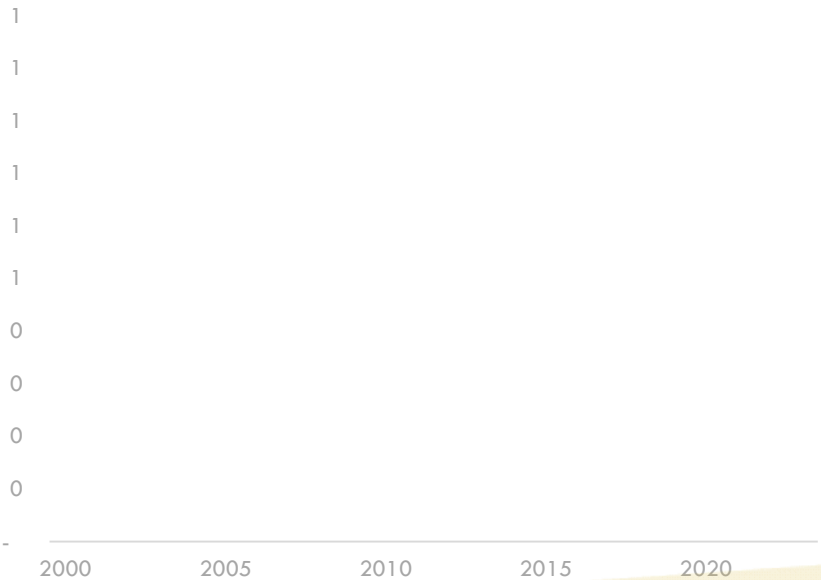
Road crash fatality rate

Deaths per 100,000 population



Road crash fatality rate

Deaths per 100,000 population (Primary data)



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)

Almaty 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

Almaty 147th out of 183 cities

(2024) (IESE)

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

Almaty 0.05/1.00

(2020) (GHS)

SUTI Geometric Mean

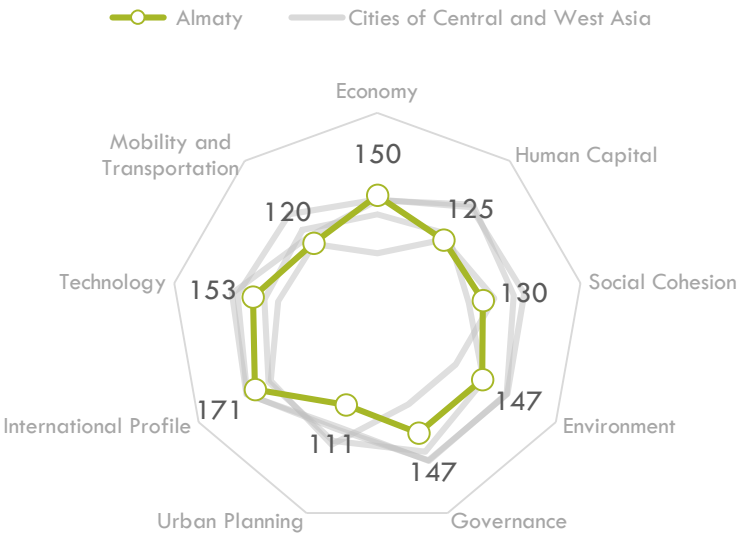
The geometric mean in the Sustainable Urban Transport Index (SUTI) by UNESCAP is a mathematical approach to aggregate scores across its 10 sub-indicators, including public transport ridership, safety, affordability, air quality, and access to transport

Almaty 57 score out of 100

(2024) (UNESCAP - SUTI)

Cities in Motion index ranking by subcomponent

Ranking (vs. other Cities of Central and West Asia) (2024) (IESE)



Transport relevant policy documents

Year published	Document name
2013	City of Almaty Sustainable Transport Strategy
2019	Almaty Development Strategy - 2050
2020	Strategy "Smart Almaty"

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/P175833138923008 71be641a5ea7b90e0e6.pdf