



Planning and Design for Sustainable Urban Mobility



Urbanization



Rapid pace, largely
uncontrolled growth,
taking place mainly in
developing countries

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Global Urbanization Trends

World's urban population:

- Quintupled between 1950 and 2013;
- 60% will live in urban areas by 2030.

New urban dwellers:

- Every year sees the addition of 73 million;
- 67 million of these (more than 90%) in developing countries.

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The Urban Mobility Challenge

- **Mobility flows** are the key dynamics of urbanization, with the associated infrastructure constituting the backbone of urban form.
- Urban planners have largely focused on facilitating urban mobility by investing in **new and expanded infrastructure for private cars**.
- The **costs** of car-dependent development include:
 - urban sprawl;
 - air and noise pollution;
 - climate change;
 - road traffic accidents;
 - community severance.



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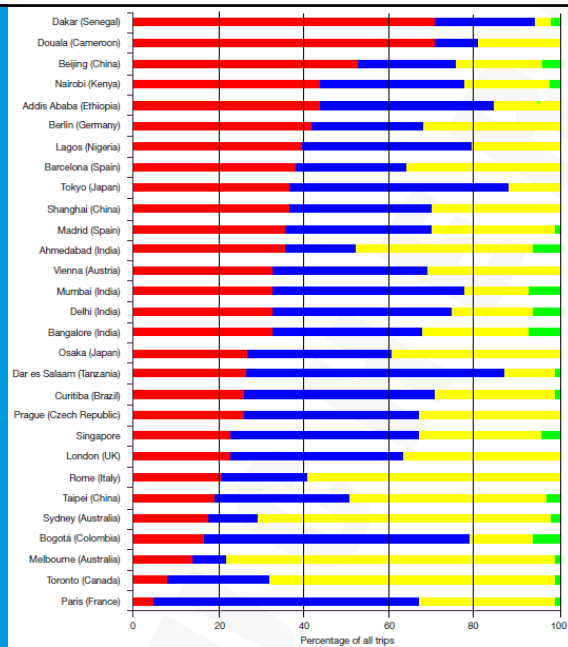
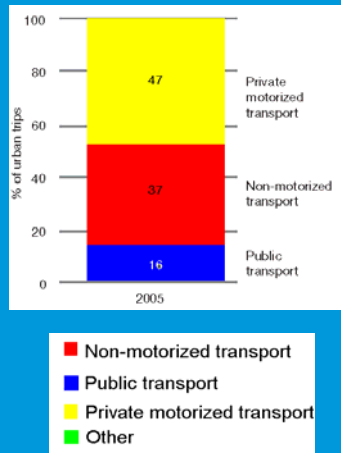
Need for Paradigm Shift

- **Access is the ultimate objective of all transportation.**
- Focus on the **human right to equitable access** to destinations and opportunities.
- Strengthen **enabling and developmental role of transportation** within cities.
- Review the **relationship between urban form and mobility**.
- Support **sustainable modes of transportation**, i.e. public and non-motorized transport.
- Efficient and **high-capacity public-transport systems** are the backbone of sustainable urban mobility.

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Urban Travel Modal Shares

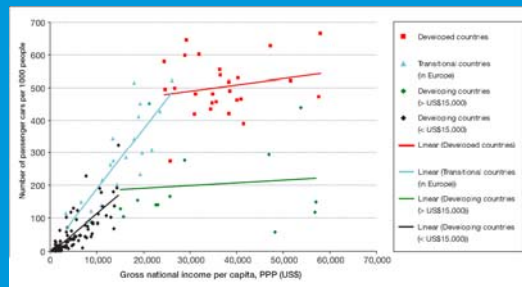


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Private Motorized Transport

- The automotive industry employs 5% of total global workforce.
- There are currently 825 million passenger cars globally (70% in developed and transitional countries).
- This figure is projected to increase to 2.1 billion by 2050.
- Some 63 mill. new cars sold each year (40% in Asia).
- In many developing countries, the bulk of new car registrations are for used cars, imported from developed countries.
- Strong relationship between car ownership rates and national income in low-income countries.
- Car ownership rates in some developed countries have stagnated.



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Private Motorized Transport

- Factors supporting motorization:

- Urban sprawl;
- Rising trade flows and incomes;
- Expanding globalization;
- The influence of the automotive industry;
- Large investments in road infrastructure.



- For many urban dwellers all around the world, the private car is the preferred means of mobility; it is a **status symbol** depicting affluence and success in life.

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Non-Motorized Transport



- Globally, 37% of all urban trips are made by foot or bicycle.
- For short trips, **walking** is the main mode of transport (in developing and developed cities).
- Important component in poorer and smaller cities, capturing **90% of all trips**.
- Developing countries: poor infrastructure for NMT.
- NMT is marginalized in urban planning and investments, which favour large (motorized) transport projects.

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Public Transport

- **Modal share of formal public transport is declining** globally.
- Notable shift from publicly owned provision to a privately owned, **market-driven approach** since 1980s.
- **Informal transport** accounts for 50% of all motorized trips in developing countries.
 - Often a major source of **congestion, road traffic accidents and pollution**;
 - **Major source of employment**: 15% in developing countries.



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Public Transport



- This is the most **effective** mode of urban passenger transport.
- Investments required for urban public transport services can be **prohibitive**.
- Spending on roads remains higher than on dedicated public transport infrastructure.
- Urban planning and land use policies – together with transport demand and fiscal measures – can encourage a shift in transport behaviour towards public transport.

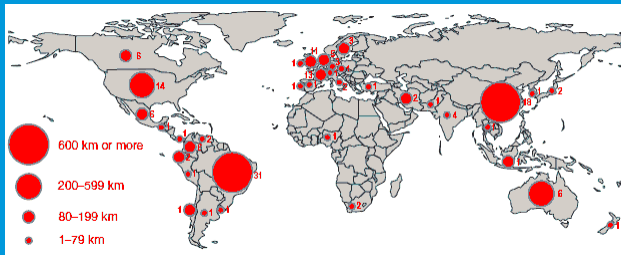
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Metro and BRT

Metro systems around the world

(cities with operational metro systems)



BRT systems around the world

(number of cities and system lengths)

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Urban Goods Transport



- Goods transport accounts for:
 - 10-15% of vehicle kilometres travelled in urban areas;
 - 2-5% of the urban employment ; and
 - 3-5% of urban land use.

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Mobility and Urban Form



Enhance
connectivity

Density = key element
of urban form



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Mobility and Urban Form

The '5 Ds' of built environment that influence travel:

- **Density:** People and built structures in specific land area.
- **Diversity:** Mixed spatial balance of land uses.



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https://www.yunbaogao.cn/report/index/report?reportId=5_5342

