The role of mobility in the context of livable cities

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The adverse impacts of growth in motorisation

• in economic, environmental and social terms
• are ruining the quality of life in our cities and our global climate.

EcoMobility
An ILEI-Local Governments for Sustainability Initiative
Humans love to move, travel, discover... by different ways and modes...

Challenges in developing cities
Challenges in developing cities

In most cities, mobility is dominated by personal motorized transport. Many people choose cars to move around...
Challenges in developing cities

• Road transport is a major contributor to air pollution and climate change.

• Urban transport contributes to now 50% urban CO2 emissions and is still growing!
Challenges in developing cities
Challenges in developing cities

Worldwide, 1.3 Million road deaths and up to 50 Million people injured per year
Challenges in developing cities

10-25% of urban areas are taken by road transportation infrastructure - A lot of space for cars but...
Challenges in developing cities

...where is the space for people?

the silent pedestrian, the invisible cyclist must be seen
Failures in Urban and Transport Planning

Trends in cities
- Rapidly increasing car ownership and use
- Declining mode share of public transport, walking, and cycling
- Declining city centres; rapid decentralisation into car-oriented suburban sprawl

Focus was given to road design:
- More infrastructure for cars
- More space for motorized vehicles, which let to less density and often to sprawl
- Unsustainable focus

Source: Xie/GTZ, 2006, Beijing
Induced Demand

Greater

- Demand for space
- Impact on health
- Deterioration of environment
- Impact on traffic
- Demand for travel
A liveable city is a city that provides a high quality of life for its citizens. This requires:
- Economic strength
- Social balance
- Ecological viability

All these elements are interdependent.

Why going for liveable, sustainable, compact and attractive cities?

London

Brussels

Vienna
Livable Cities & Urban Life

What influences Liveability?

Direct transport related factors:
- Infrastructure
- Accessibility
- Quality of architecture
- Urban design
- Public Transportation
- Public places
- ...etc.

Other factors:
- Safety/Crime
- Schools and education
- Recreation
- Political stability
- Availability of goods/services
- Economic/Business conditions
Mercer Quality of Living Survey 2012
Top 10 Cities (worldwide):

- Vienna, Austria (1st)
- Zurich, Switzerland (2nd)
- Auckland, New Zealand (3rd)
- Munich, Germany (4th)
- Vancouver, Canada (5th)
- Düsseldorf, Germany (6th)
- Frankfurt, Germany (7th)
- Geneva, Switzerland (8th)
- Copenhagen, Denmark (9th)
- Bern, Switzerland (10th)
Tackling the Problem

Traditional focus was given to road design: More infrastructure for cars, more space for motorized vehicles, unsustainable focus: Question is, how to use limited road space best

Source: City of Münster
Why public transport priority? Corridor Capacity

(people per hour on 3.5 m wide lane in the city – PPHPD [PAX/hour/direction])

Equivalency road width: In order to carry 20,000 automobile commuters PHPD, a highway must be at least 18 lanes wide. (assumption 1.2 passengers per automobile)

Source: Botma & Papendrecht, TU Delft 1991 and own figures
Improving Public Transport System

Priority for Public Transport
Re-thinking priorities and giving greater space to those that need it most.
Avoid, Shift, Improve, Integrate
Compact land use (Smart Growth)

Example: Shopping

Starting point: Household requires a wide range of goods, with varying frequency.

First decision: How far do you have to go?

Second decision: Which mode of transport will you (have to) use?

Third decision: Which type of vehicle + use?

- Smart infrastructure planning: Reduces need for travelling! AVOID/REDUCE
- Encourage use of non-motorized and public transport! SHIFT
- Reduce car size and consider using alternative fuels! IMPROVE
The push and pull approach


Measures with push-effects
Area-wide parking management, parking space restrictions in zoning ordinances, car limited zones, permanent or time-of-day car bans, congestion management, speed reductions, road pricing...

Measures with pull-effects
Priority for buses and trams, high service frequency, passenger friendly stops and surroundings, more comfort, park-and-ride, bike-and-ride..., area-wide cycle-networks, attractive pedestrian connections...

Measures with push- and pull-effects
Redistribution of carriageway space to provide cycle lanes, broader sidewalks, planting strips, bus lanes..., redistribution of time-cycles at traffic lights in favour of public transport and non-motorized modes, public-awareness-concepts, citizens' participation and marketing, enforcement and penalizing...
Transport Demand Management (TDM)

Rationale: “Demand for transport services is not given, but depends on transportation policies, pricing, investments & choices.”

“TDM is a strategy which aims to maximize the efficiency of the urban transport system by discouraging unnecessary private vehicle use and promoting more effective, healthy and environmental-friendly modes of transport, in general being public transport and non-motorised transport.”
## CO₂ emissions from passenger transport vs. modal split:

<table>
<thead>
<tr>
<th>City</th>
<th>Share (%) of public transport, walking and cycling</th>
<th>CO₂ emissions (kg per capita per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Houston</td>
<td>5%</td>
<td>5690 kg</td>
</tr>
<tr>
<td>Montreal</td>
<td>26%</td>
<td>1930 kg</td>
</tr>
<tr>
<td>Madrid</td>
<td>49%</td>
<td>1050 kg</td>
</tr>
<tr>
<td>London</td>
<td>50%</td>
<td>1050 kg</td>
</tr>
<tr>
<td>Paris</td>
<td>54%</td>
<td>950 kg</td>
</tr>
<tr>
<td>Berlin</td>
<td>61%</td>
<td>774 kg</td>
</tr>
<tr>
<td>Tokyo</td>
<td>68%</td>
<td>818 kg</td>
</tr>
<tr>
<td>Hongkong</td>
<td>89%</td>
<td>378 kg</td>
</tr>
</tbody>
</table>

Source: UITP
We will discuss today

- Travel Demand Management
- Non-motorised Transport
- Public Transport Options
- Financing transport
- Measuring success