

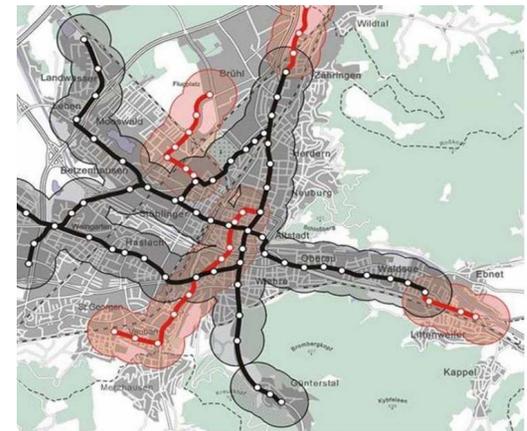
United Nations Forum on Climate Change Mitigation, Fuel Efficiency and Sustainable Urban Transport
16-17 March 2010
Seoul, Republic of Korea

COMPACT URBAN DEVELOPMENT AND REDUCTION OF MOTORIZED TRAVEL, ENERGY USE AND CO2 EMISSIONS

Policy Options for National and Local Governments

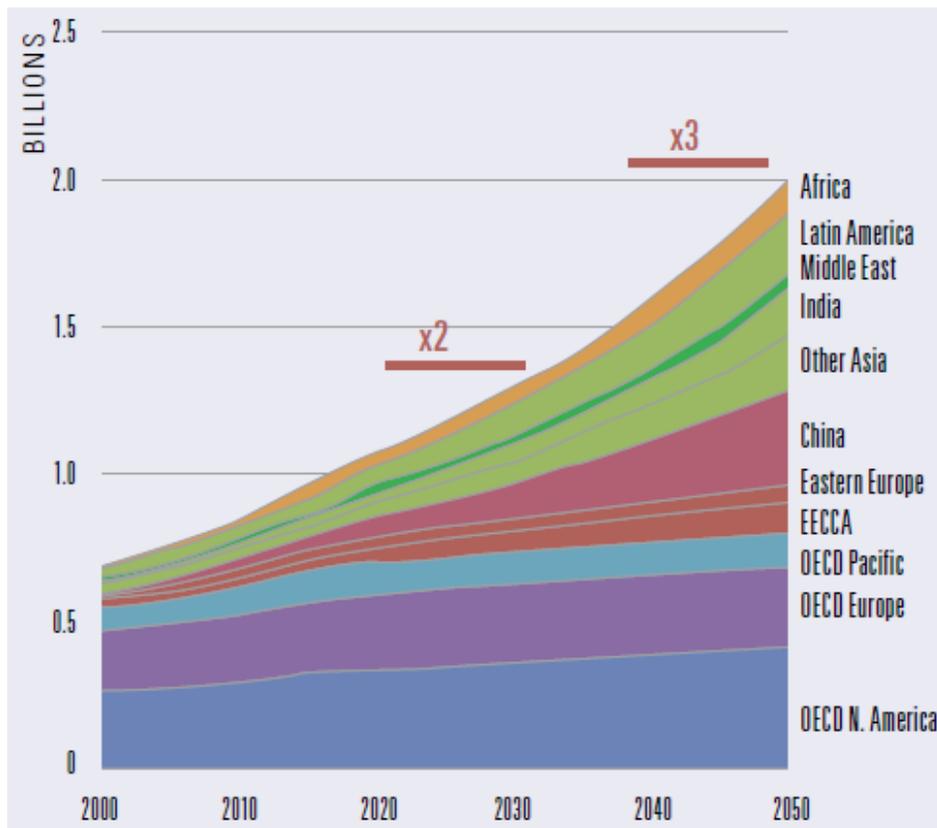
17 March 2010

Christian Schlosser, Ph.D.
UN-HABITAT, Human Settlements Financing Division
Transport and Energy Policy Section



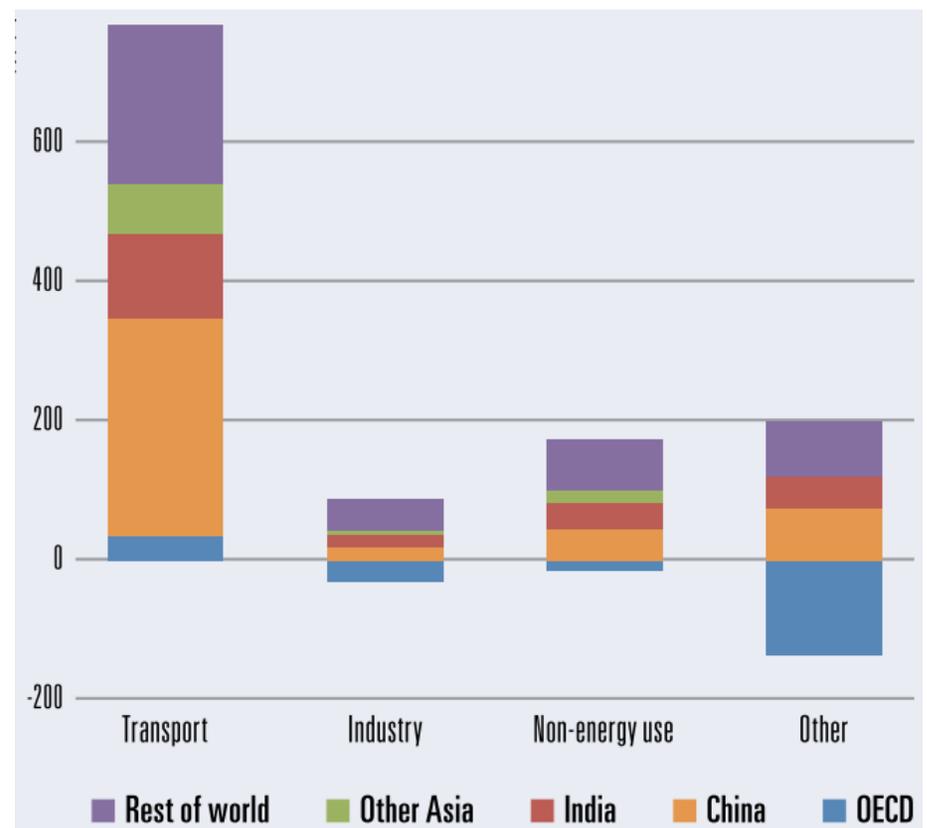
The Global Transport Challenge

Projected total stock of light-duty vehicles by region 2000-50



Source: GEF/WBCSD 2004

Projected Incremental Oil Demand by Sector 2006-30

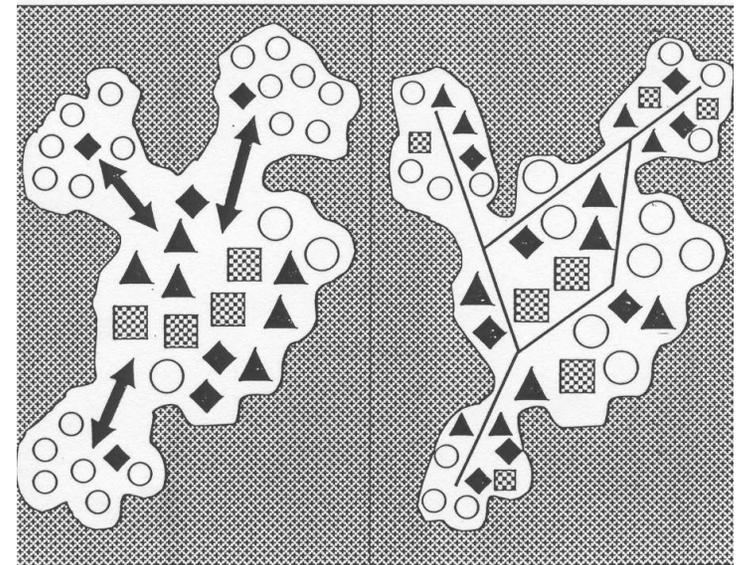
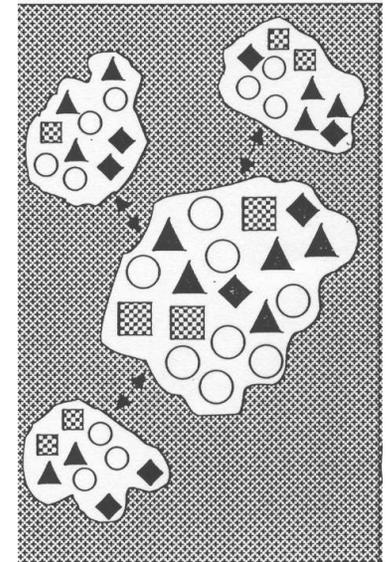


Source: GEF/IEA 2008

Defining Compact Development

Spatial development indicators: 5 “Ds”:

- *Density*: of population/employment by geographic unit
- *Diversity*: mix and balance of land uses
- *Design*: neighborhood/street layout: connectivity, presence of sidewalks
- *Destination accessibility*: Ease or convenience of trip destinations from point of origin
- *Distance to transit*: Ease of access to transit from home or work (e.g. bus or rail stop within $\frac{1}{4}$ to $\frac{1}{2}$ mile of trip origin)



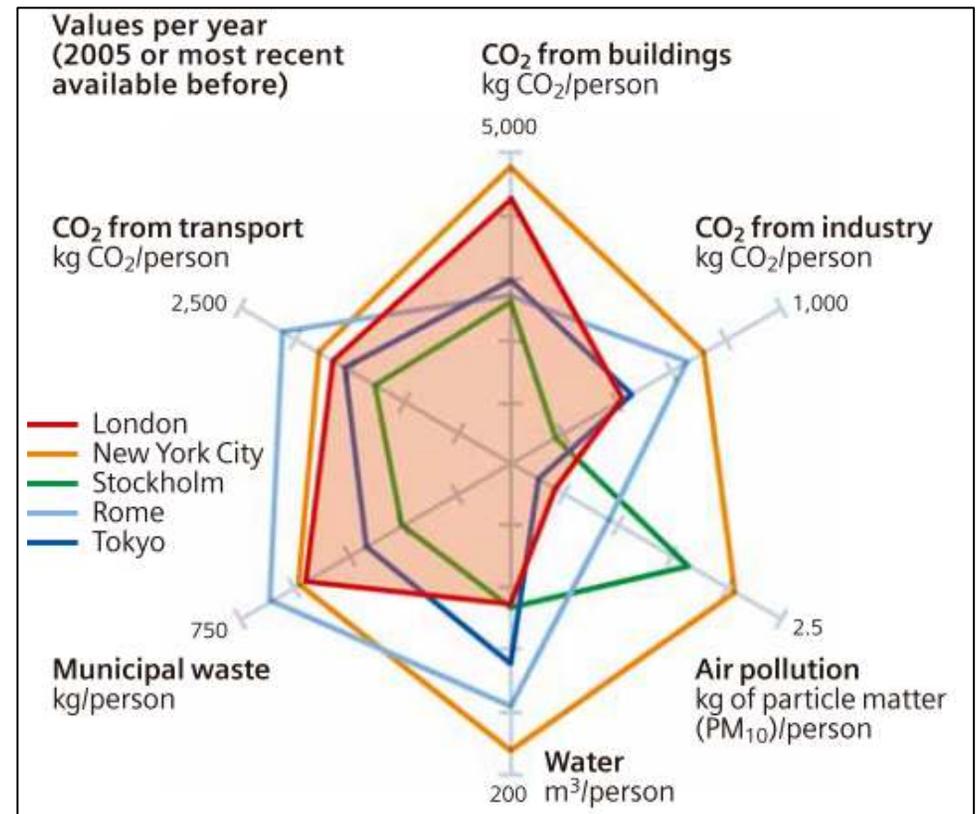
Source: TRB Special Report 298 (US)/Cervero and Kockelman

<http://www.ecolup.info/>

Development Patterns and Vehicle Miles Travelled

Findings of a recent 2009 US-TRB Report on “Driving and Built Environment”:
Developing more compactly. i.e. at higher residential and employment densities, is likely to reduce VMT:

- doubling residential density across a metropolitan area might lower household VMT by about 5 to 12 percent,
- reductions as much as 25 percent possible if coupled with higher employment concentrations, significant public transit improvements, mixed uses, and other supportive demand management measures

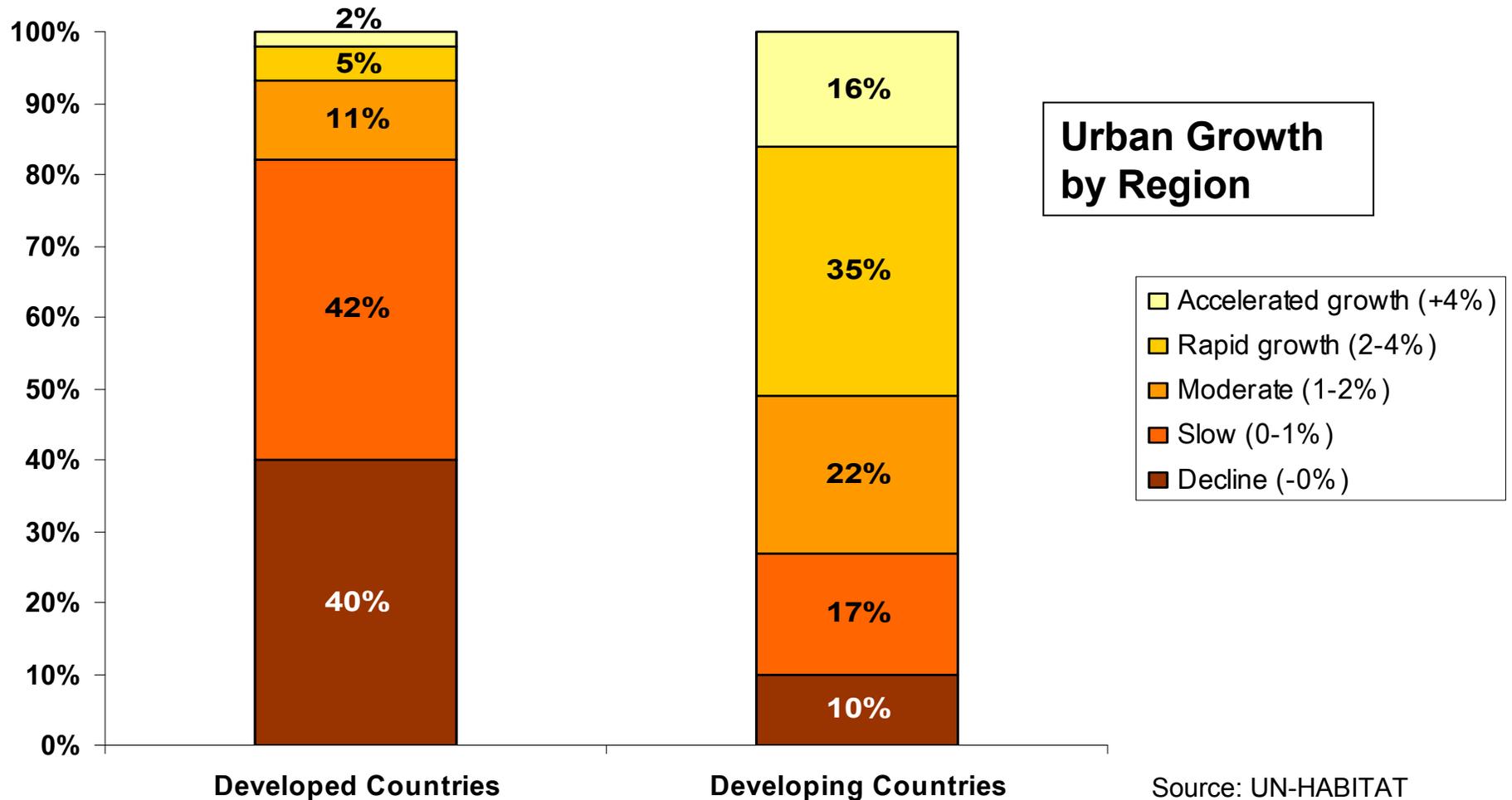


Comparison of cities' environmental footprint

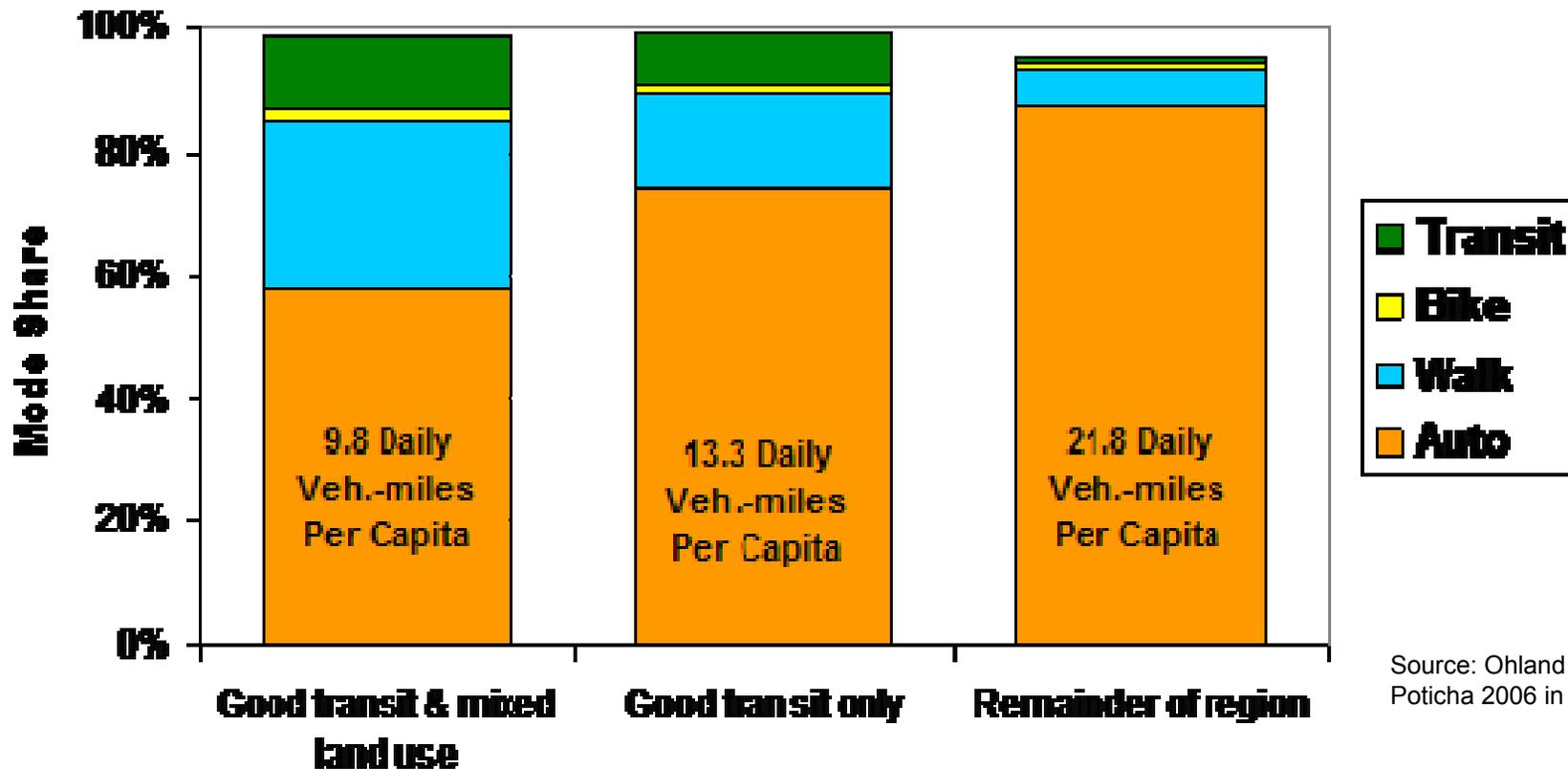
Source: Siemens/McKinsey 2008

Global Variances in Urban Growth

In the North, almost half of the cities are declining
In the South, more than half of cities are growing very fast
Developing World cities grow 10 times faster



Developed Countries: Communities and Travel

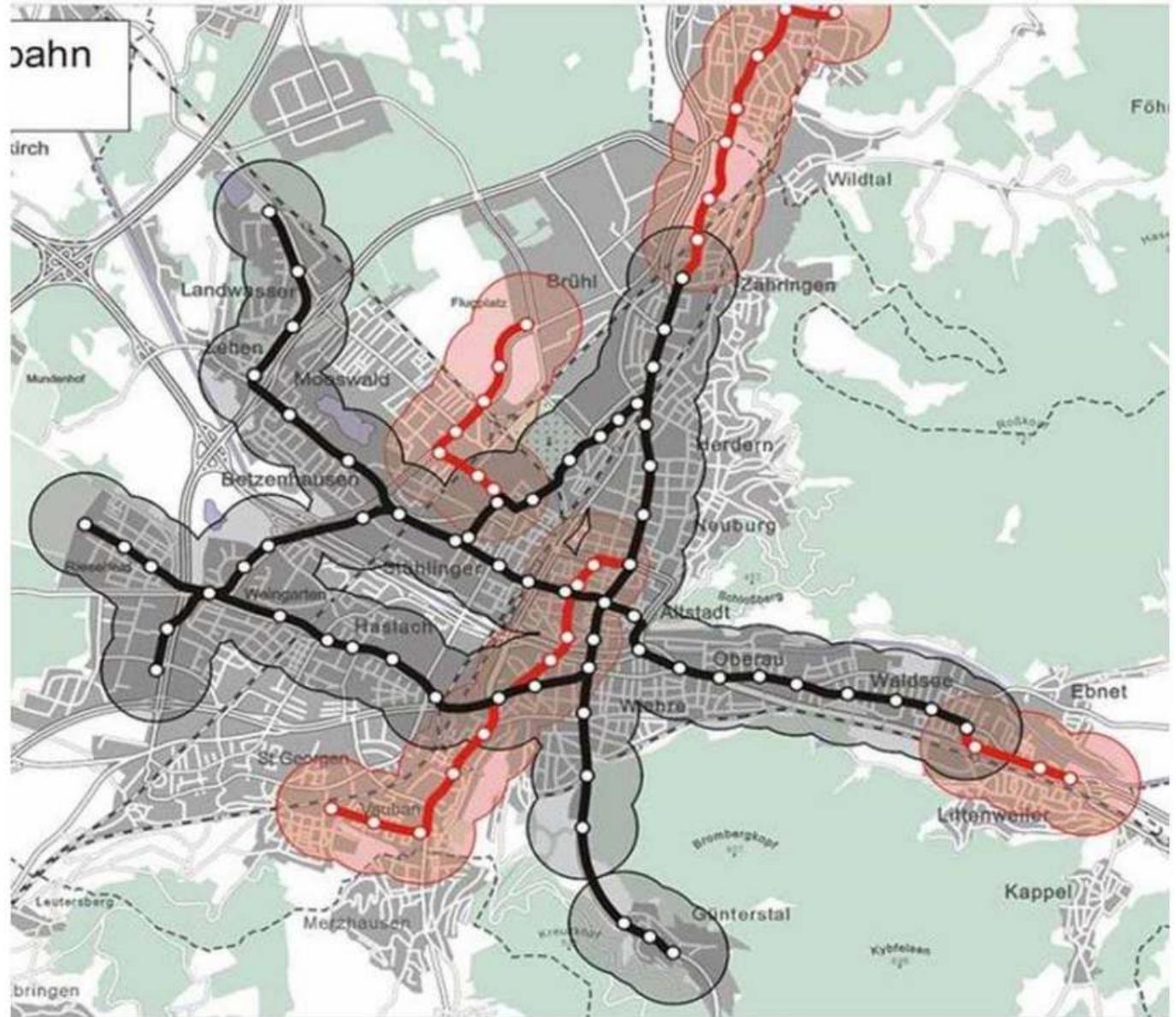


Residents of neighborhoods with good transit service and land use mix drive about half as much, and walk, bike and use public about four times as much, as residents of conventional, automobile-dependent suburban communities (Example from Portland, Oregon/USA)

Enabling a symbiosis of NMT and public transport

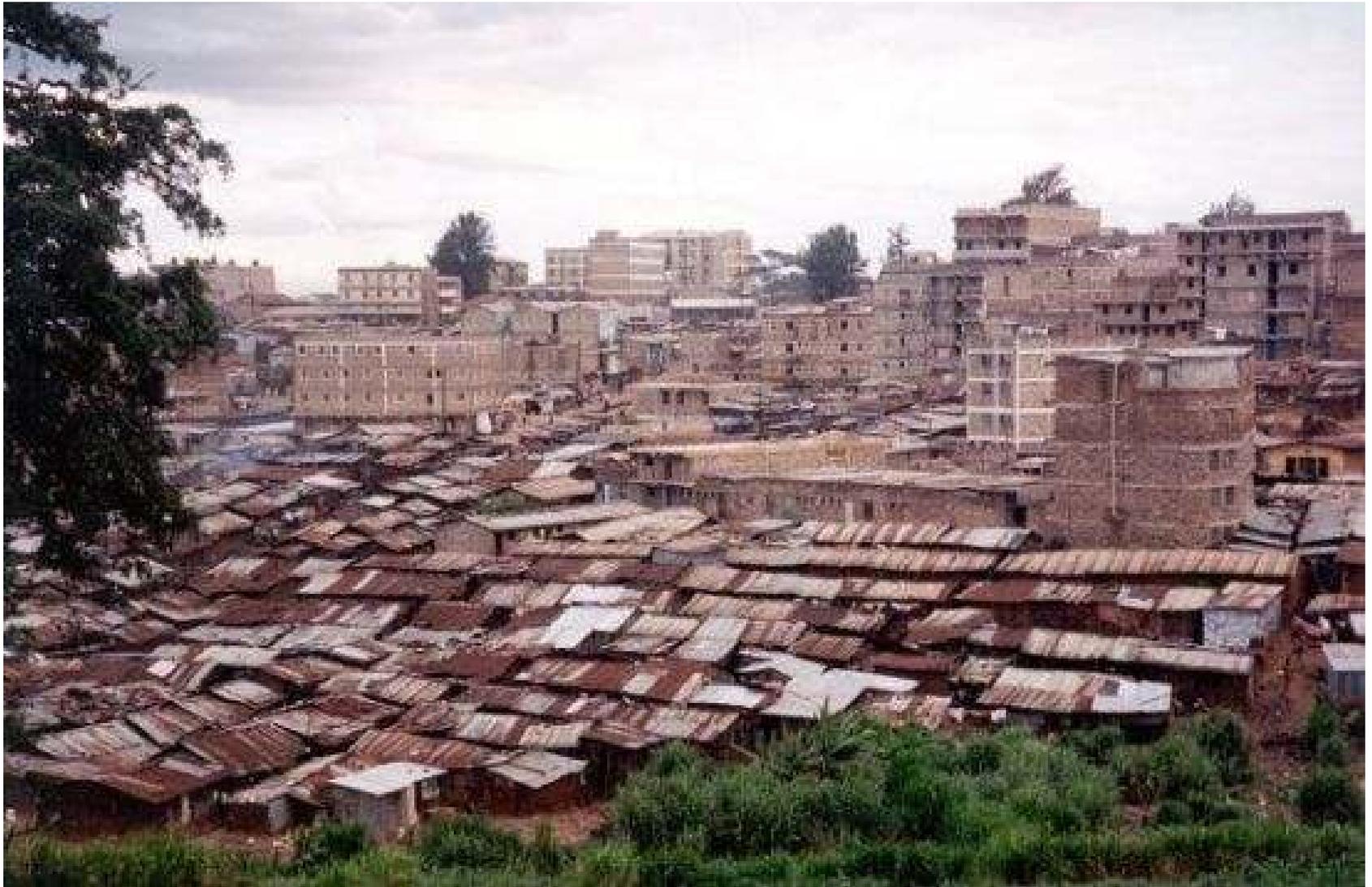
Residential areas within 300m of a light-rail stop in Freiburg/Germany

Source: City of Freiburg, in: Pucher/ Buehler



Compact development in developing countries

Are urban slums compact neighbourhoods ?



Mathare
Slum,
Nairobi

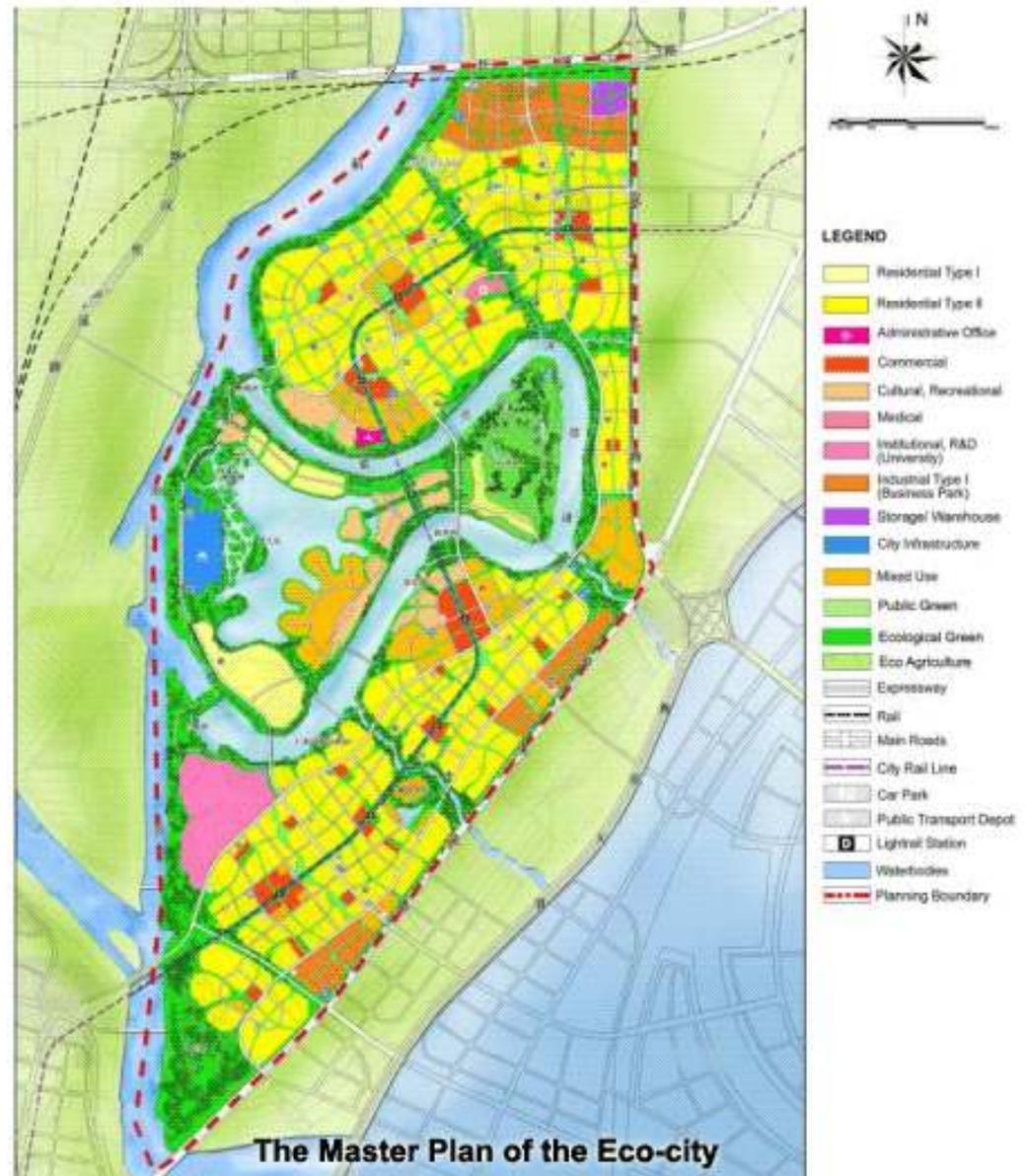
Source:
UN-Habitat

Innovative Examples in developing countries

Master Plan of Sino-Singapore Tianjin Eco-City, China

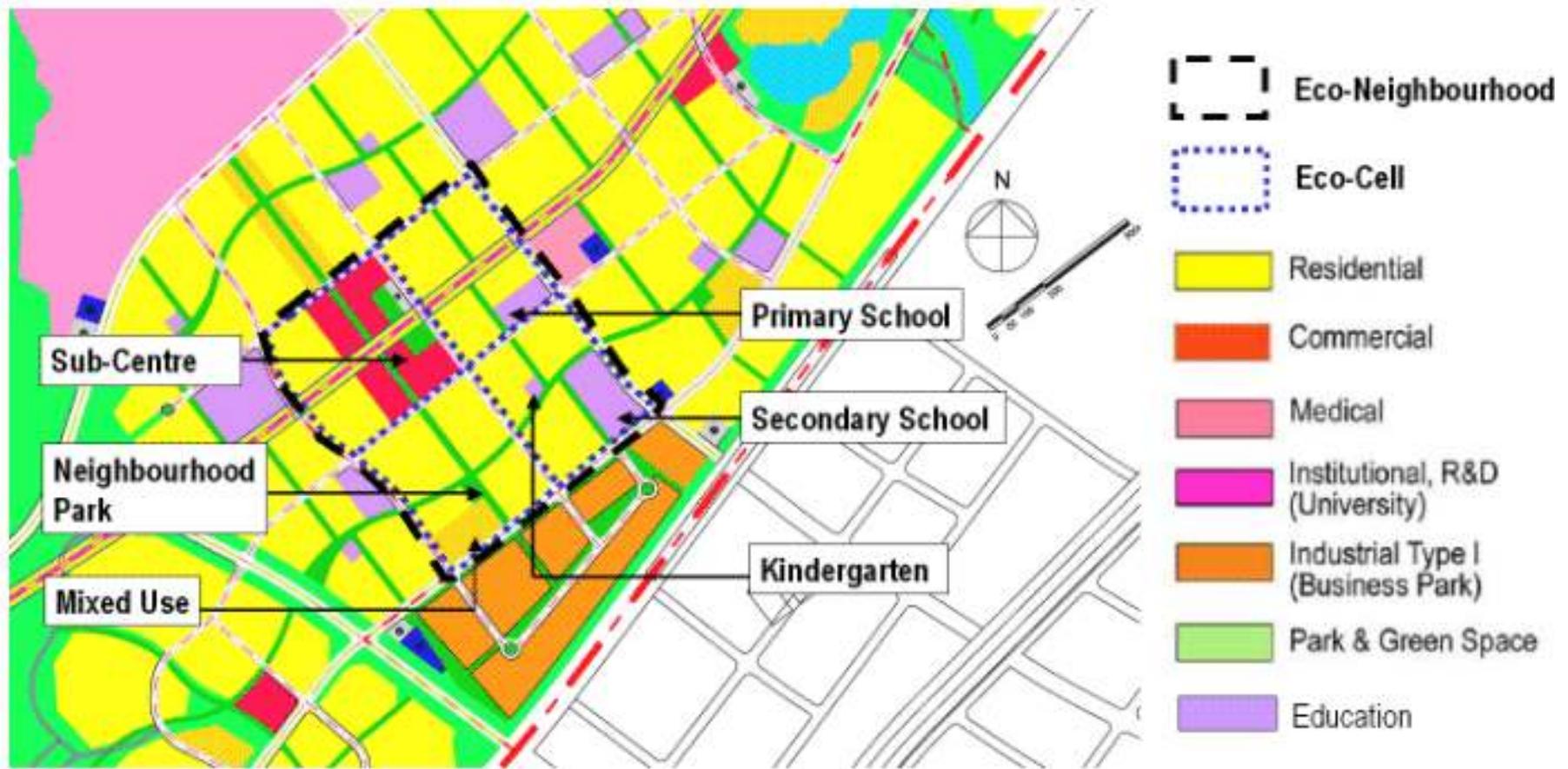
“as scaleable, practicable and replicable model for sustainable development for other cities in China and around the world”

Source:
<http://www.tianjinecocity.gov.sg/masterplan.htm>



Compact Neighbourhoods Tianjin Eco-City, China

“Eco-Cell” concept: integrating different land uses within a modular 400m by 400m grid, basis for neighbourhoods, districts, and urban centres



An illustration of the Eco-cell

Source: <http://www.tianjineco-city.gov.sg/masterplan.htm>

UN-HABITAT Mandate in Urban Transport

- General mandates with provisions on transport (Vancouver Declaration on Human Settlements, Habitat Agenda, Istanbul Declaration on Human Settlements, the Declaration on Cities and Other Human Settlements in the New Millennium)
 - Governing Council Resolution GC 22/8 (2009) “Access to basic services for all”
 - MTSIP Focus Area 4: Environmentally Sound Basic Urban Infrastructure and Services
- ⇒ Focus on Enhancing Access to Mobility for the Urban Poor in the Context of Sustainable Urbanization

