ECE Convention on long-range transboundary air pollution

Special session "Integrated and cross-sectoral policy-making on the path towards a Green Economy", 2 July 2014, Geneva

How integrated urban planning can help to reduce air pollution in cities

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UNECE Economic Cooperation, Trade and Sustainable Land Management Division

UNECE Committee on Housing and Land Management

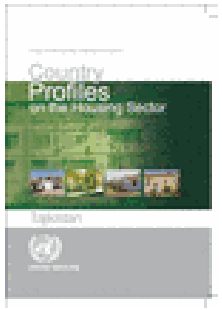
Priority directions of work:

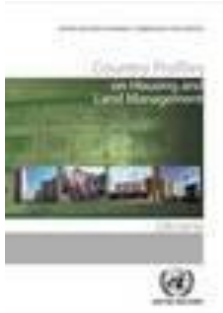
I. Housing, including energy efficiency, social housing, building standards

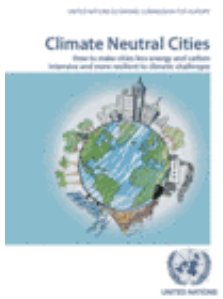
II. Urban planning and development, including compact, smart cities, ageing in cities, disaster risk reduction

III. Land administration, including e-governance, institutional aspects, capacity building and informal settlements

UNECE Committee on Housing and Land Management – publications at http://www.unece.org/hlm/welcome.html







Challenges of urbanization

Urban residents

- UNECE region: 73% (85% in 2015)

Main challenges created by high urbanization:

- Urban sprawl
- High energy consumption
- Environmental degradation
- Overpopulation and critical living conditions
- Conversion of land and green spaces into constructions and buildings
- Mobility problems and lack of infrastructures and services
- Housing issues

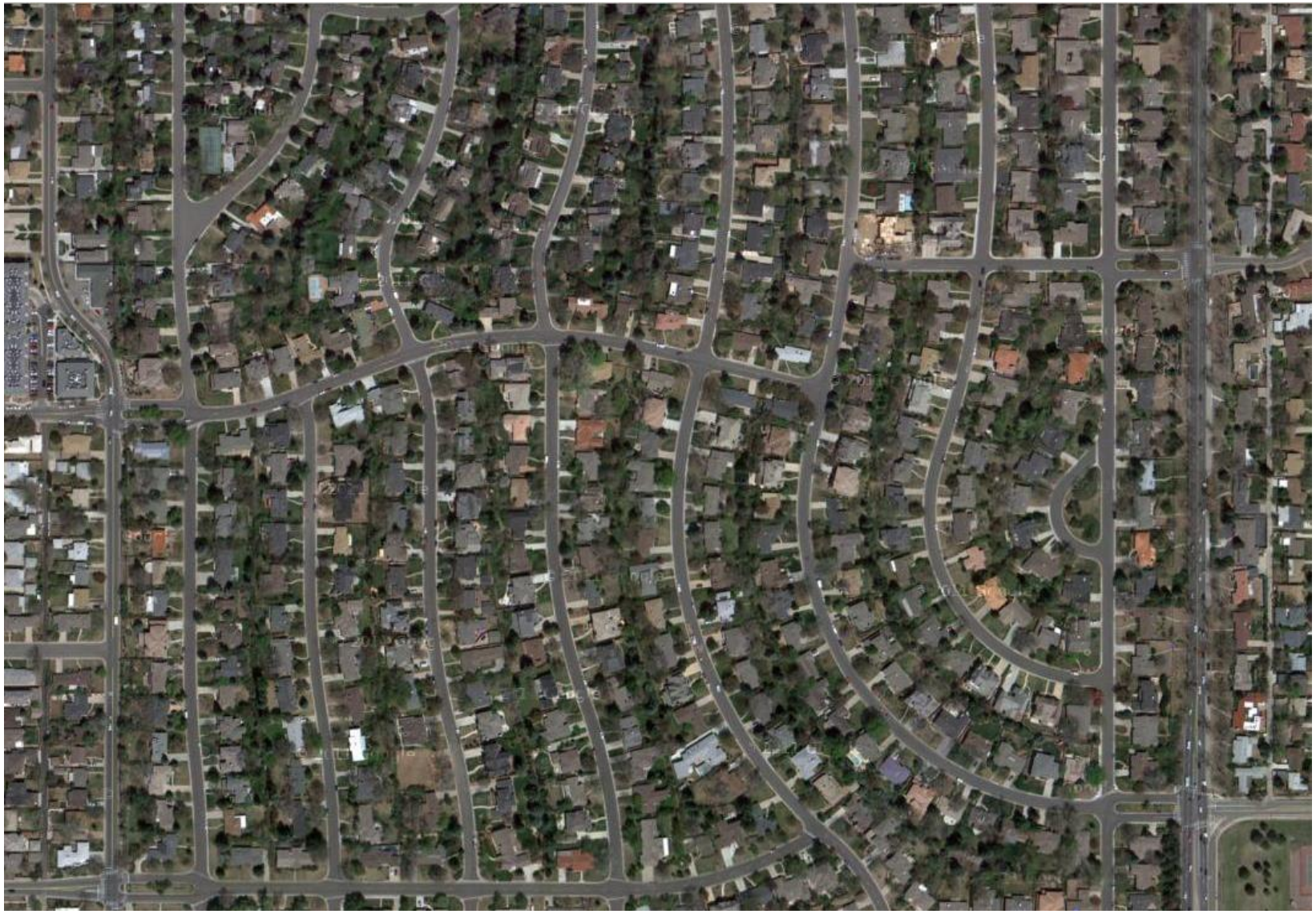
Sources for Nitrogen Oxides (Nox), Particles (PM) and Non-Methane Volatile Organic Compounds (NMVOC) emissions in Île-de-France, France

Émissions annuelles en kilotonnes (et en %)	Oxydes d'azote (NOx)	Composés organiques volatils non méthaniques (COVNM)	Particules <10 µm (PM10)	Particules fines <2,5 µm (PM2,5)	Dioxyde de soufre (SO2)
Trafic routier	53,5 (55%)	14,9 (16%)	4,6 (25%)	3,9 (30%)	0,1 (<1%)
Plate-forme aéroportuaire	6 (6%)	0,6 (1%)	0,3 (1%)	0,2 (1%)	0,4 (2%)
Trafic ferroviaire et fluvial	1,2 (1%)	0,2 (<1%)	0,6 (3%)	0,3 (2%)	0,1 (<1%)
Résidentiel et tertiaire	19,5 (20%)	27,4 (30%)	5,4 (29%)	5,2 (39%)	6,1 (36%)
Industrie manufacturière	4,1 (4%)	20 (22%)	1,1 (6%)	0,5 (4%)	1,1 (6%)
Chantiers et carrières	2,7 (3%)	9,1 (10%)	3,8 (20%)	1,9 (15%)	0,1 (1%)
Extraction, transformation et distribution d'énergie	5,7 (6%)	3,9 (4%)	0,2 (1%)	0,1 (1%)	8,5 (50%)
Traitement des déchets	2,1 (2%)	0,3 (<1%)	0,3 (1%)	0,3 (2%)	0,6 (4%)
Agriculture	2,9 (3%)	0,6 (1%)	2,6 (14%)	0,7 (6%)	0,1 (1%)
Émissions naturelles	<0,1 (<1%)	14,5 (16%)	<0,1 (<1%)	<0,1 (<1%)	<0,1 (<1%)
TOTAL SECTEURS	97,9 (100%)	91,4 (100%)	18,8 (100%)	13,1 (100%)	17,2 (100%)

(source : Inventaire Airparif année de référence 2010)

Denver, USA

Population density 1,510.9 inhabitants/km^2



NEW YORK, USA

Population density **10,518.60 inhabitants/km^2**

Paris, France

Population density **20,980 inhabitants/km^2**

Urban Form as determining factor for reducing air emissions

Urban GHG emissions (tCO_2e/capita)

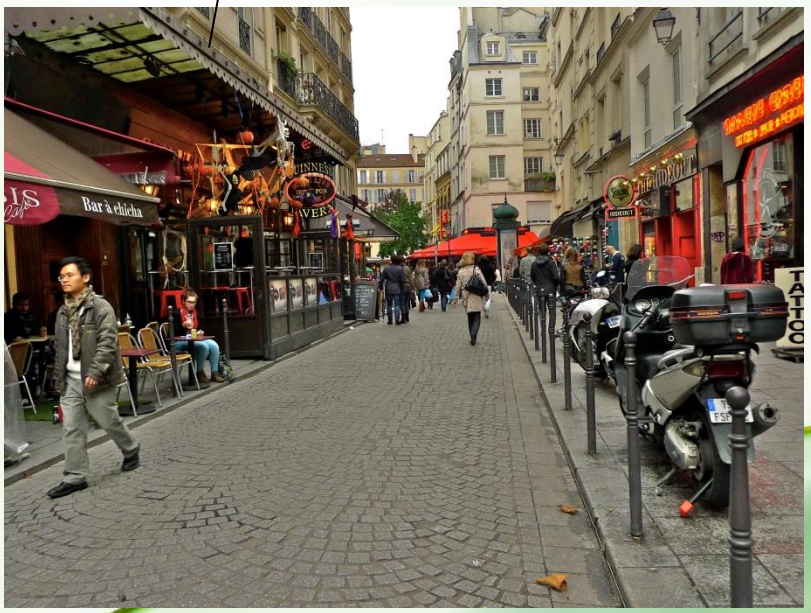
Denver	21.5
New York	7.9
Paris (Ile de France)	5.2

Source: The World Bank. 2010. Representative GHG Baselines for Cities and their Respective Countries.

Compact cities – key characteristics

- Dense and proximate development patterns, which reduce average travel distances
- Urban areas are linked by public transport systems
- High accessibility to local services and jobs

Philadelphia, USA



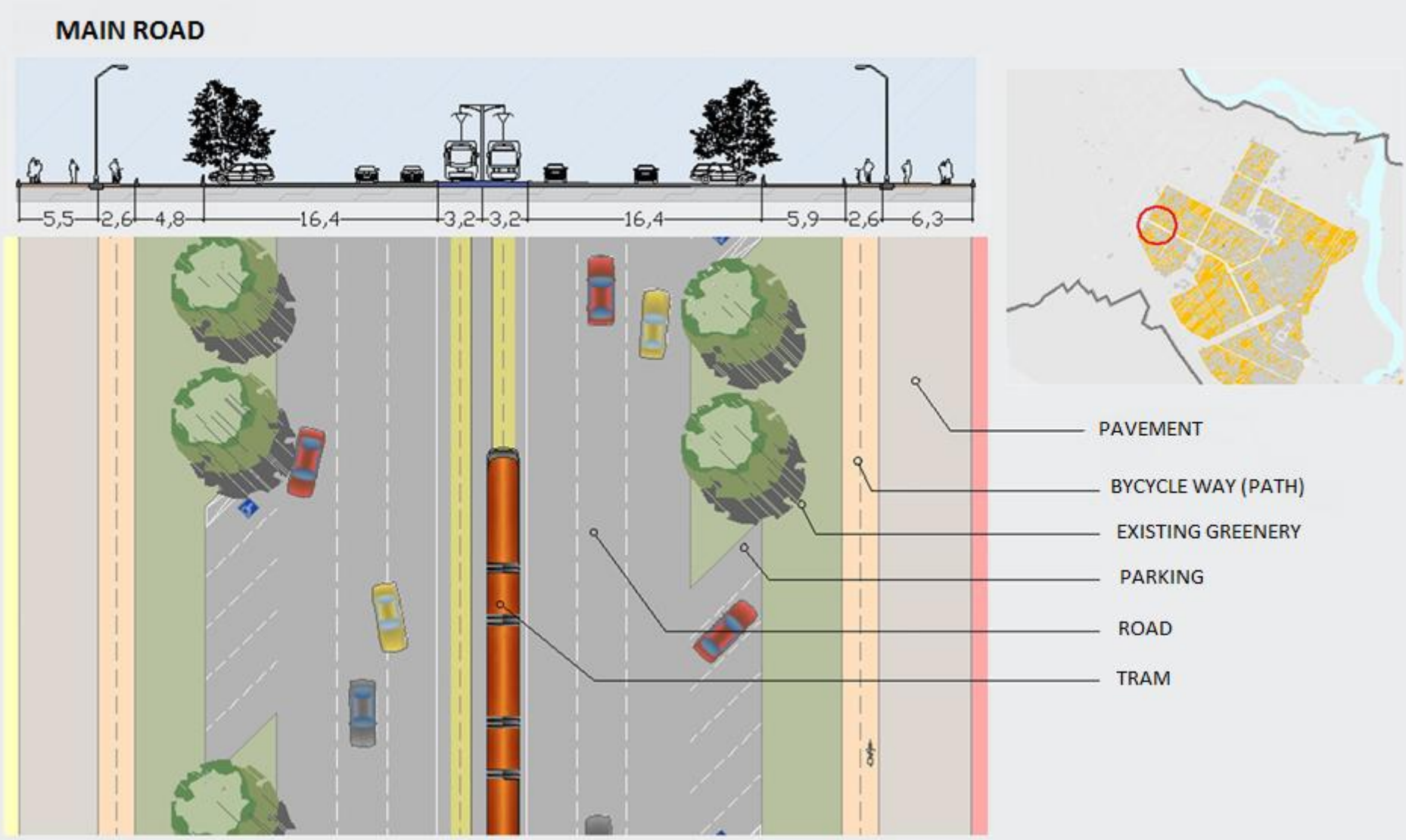
Paris, France

Oslo, Norway

Bankoboev.Ru

ქალაქ რუსთავის მიწათსარგებლობის გენერალური გეგმა 2013 წ

საპროექტო გზები და ავტოსადგომები



Alternative transport implementations in Georgia

Smart City – definition

What are Smart Cities ?

- Cities, which are ready to meet their economic,
  social and environmental challenges
- Cities, which strive to increase energy efficiency and to reduce environmental pollution
- Cities which plan and implement climate change mitigation measures

UNECE smart city programme

Partners

- Housing and Land Management Unit (UNECE)
- Organization for international Economic Cooperation (OiER), Vienna
- Dubai Real Estate Institute
- Environmental Agency Austria (EAA)

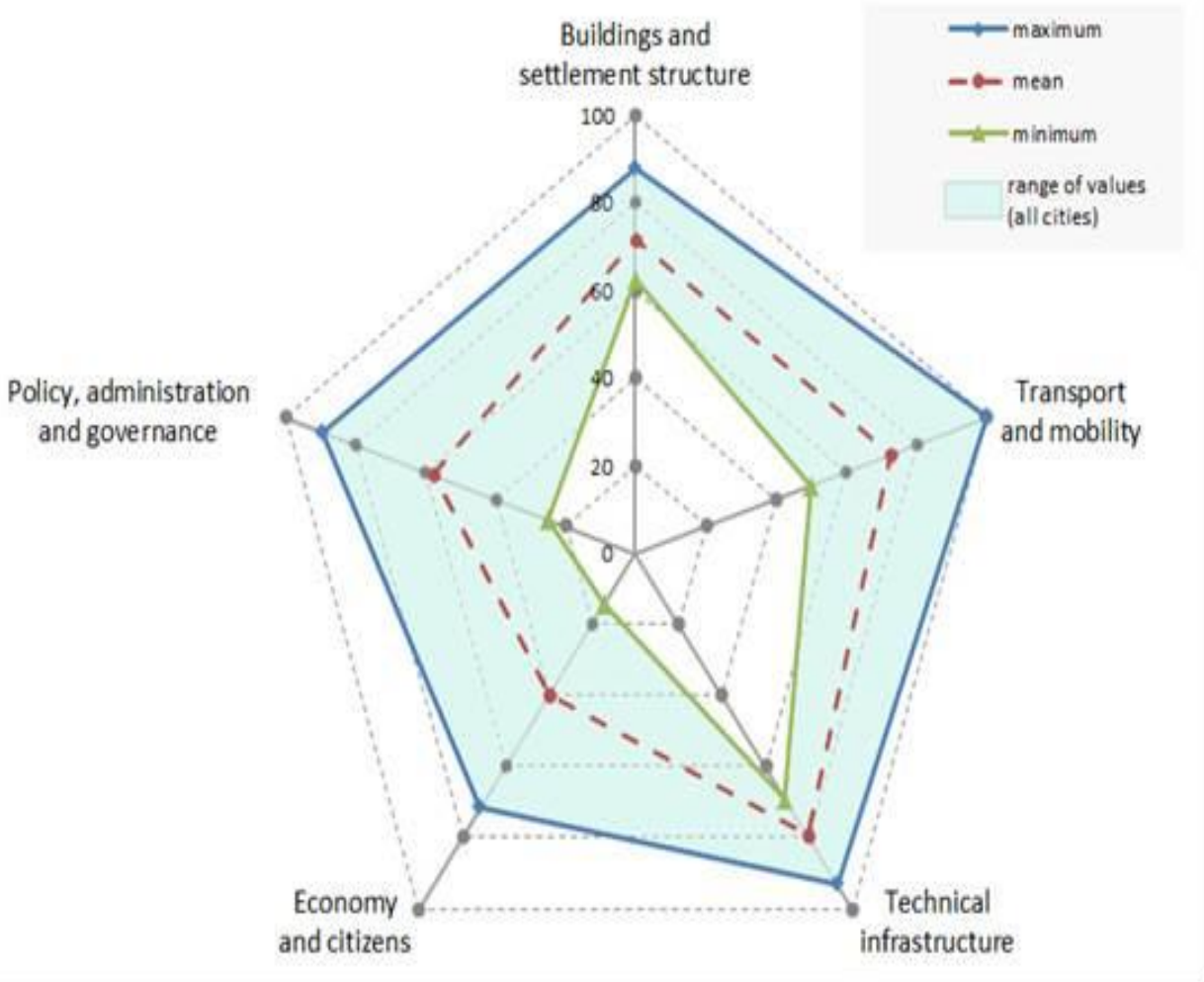
Stakeholders

- National governments
- Local authorities and city councils of the ten pilot cities
- City planners/managers, urban architects
- Private sector/industrial players from the relevant fields
- Academia and other research institutions
- NGOs

Activities

- **A set of indicators developed**
- **City profiles for 10 pilot cities**
- **Networking events, capacity building in transition countries**

Smart City Profiles – spider diagram



Results for 12 Austrian cities across the 5 core areas of activity in urban development

It allows cities to make better evaluations of their current status and their development in relation to defined indicators.

The maximum of all indicators (100) gives the fictitious smartest city.

Steps for building smart cities

Promote

- **Coherent and coordinated policy frameworks at the national and city level**
- **Governance capacity and intersectoral cooperation**
- **New partnerships with the business, academia; involvement of key stakeholders and inhabitants in planning and implementation**

Smart cities programme events in 2014-2015

- Workshop on L*and Information systems for smart cities* (8-9 May 2014, Geneva); part of Geospatial World Forum
- Urban Future Global Conference (18-19 November 2014, Graz)
- Dubai Conference on smart cities (16-17 February 2015)
- Activities in pilot cities in Europe, Central Asia, Middle East

Thank you for your attention

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www.unece.org/hlm/welcome