Velocity lecture
“The pan-European Master Plan for Cycling Promotion (PEMP) - A framework for starter, climber and champion countries”

The Role of UNECE Sustainable Transport Division

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58 conventions, 1712 Contracting Parties
Sustainable urban mobility and public transport

**Norway - Oslo**

- **Size**: 5.08 km²
- **Population**: 1,168,950
- **Density**: 229 inhabitants/km²
- **Tourist Season**: May - August
- **Number of Tourists**: 3.5 million
- **Number of Parking Spaces**: 119

**Distribution of passengers among modes of public transport**:

- **Bus**: 2,600
- **Train**: 41
- **Metro**: 80
- **Trolley**: Number of stations
- **Urban Train**: Number of stations
- **Light Train**: Number of stations
- **Ferry Boat**: Number of stations

**Cost of single / one hour ticket**: $0.99
**Cost of monthly ticket**: $185.65

**Actions taken to improve the quality of urban public transport and non-motorized transport**:

- Launch of mobile application for public transport tickets with pay-as-you-go credit function (implemented)
Sustainable urban mobility and public transport pillars

Urbanization & Public Transport demand
The world urban population is expected to increase by 72 per cent by 2050, from 3.6 billion in 2011 to 6.3 billion in 2050. Urbanization needs efficient and sustainable public transport networks.

Accessibility and Congestion
Access of the urban population in total with the most efficient and effective way to employment opportunities, health and education facilities by reducing congestion and its negative effects, should be main objective of a sustainable public transport network.

Road Safety
The development of Sustainable public transport is interrelated with the reduction of road fatalities and therefore increase of road safety. Residents of public transport-oriented communities with high rates of use have significantly lower per capita traffic fatality rates compared to residents of more automobile-dependent, sprawled communities.

Climate Change
Hundreds of millions of people in urban areas across the world will be affected by climate change. More than half of the world’s greenhouse gas emissions come from urban areas. Sustainable public transport leads the fight against cities’ air pollution.

Affordability
Sustainable public transport implies availability for all. Calculation of fares based on population purchasing power and on the need to ensure profitability of public transport is a difficult exercise. The main message of Sustainability should be that all citizens afford public transport tickets.

Public Transport Financing
Sustainable public transport financing should focus on projects that improve the integration across urban services, increase public transport capacity and increase the access of the urban poor to employment opportunities and health and education facilities.

Well being: Cycling and Walking
The promotion of non-motorised transport (cycling and walking) for everyday physical activity is a win-win approach; it does not only promote health but can also lead to positive environmental effects, especially if cycling and walking replace short car trips. Sustainable Public Transport promotes cycling and walking.

Intelligent Transport Systems (ITS)
Intelligent Transport Systems play a significant role in shaping the future ways of mobility and the transport sector. They are integral part of any strategic activities and actions towards Sustainable public transport and mobility.
European Agreement on Main International Traffic Arteries (AGR), of 15 November 1975

European Agreement on Main International Railway Lines (AGC), of 31 May 1985

European Agreement on Important International Combined Transport Lines and Related Installations (AGTC), of 1 February 1991

European Agreement on Main Inland Waterways of International Importance (AGN), of 19 January 1996
Review of related Work

Task 1.1 Introduction to cycling (International/City level) – characteristics, benefits and challenges
Task 1.2 International and City level Cycling technical specifications/standards, respective decisions and guidelines for their implementation
Task 1.3 Summary of the existing International and City level Cycling lanes technical, operational and maintenance parameters
Task 1.4 Collection and review of existing relevant studies, assessments and works
Task 1.5 Introduction of the existing and future Cycling Lanes networks and plans in International and City levels
Task 1.6 European Union cycling funded projects and initiatives and its impact in the ECE region

Methodology and main assumptions for the work

Task 2.1 Review and identification of the necessary parameters and assumptions for the work:
  a) Social, environmental and safety aspects;
  b) Interoperability / Intermodality between Cycling and Public transport modes;
  c) International connections, interrelations and dynamism towards neighbouring regions;
Task 2.2 Transport demand and traffic forecasting, development scenarios;
Task 2.3 Elaboration and distribution of the questionnaires to the UNECE countries / Capitals (or major cities);
Task 2.4 Analysis and processing of the returned questionnaires;

Cycling Lanes status and needs in the UNECE member Countries / Cities

Task 3.1 Collection of necessary information and data
Task 3.2 Analysis and control of information obtained
Task 3.3 Approved or proposed national legislation and standards
Task 3.4 Cycling Lanes links in operation, under construction, planned (accompanied by maps)
Task 3.5 Pre-feasibility, feasibility and alignment studies (under elaboration, approved)
Task 3.6 Technical parameters (speed, gradient, stations, safety measures etc.)
Task 3.7 Existing and future traffic flows
Task 3.8 Information and communication systems at present, in the future
Task 3.9 Agreements on Cycling Lanes with neighboring countries
Task 3.10 Construction costs and timing, maintenance and operation costs
Task 3.11 Financial sources – available and proposed

Elaboration of Environmental – Health benefits analysis by using existing tools (HEAT - FoFITS) from Cycling development

Task 4.1 Review of existing tools requirements and preparation of appropriate questionnaires in order to facilitate data collection;
Task 4.2 Identification of the main parameters that these tools should include and analyse
Task 4.3 Use of the tools based on data received for International and Cities level;
Task 4.4 Analysis of case studies the results of which will be included at the final report
Methodology on the infrastructure module of the Cycling Master Plan

Elaboration of pan-European master plan for cycling at International level –

Task 5.1 Economic and social characteristics as well as economic growth analysis in ECE region;
Task 5.2 Design speeds, upgrading of existing lanes/building of new lanes, types of operation (types of bikes);
Task 5.3 Construction, maintenance and operation average unit costs (new links, rehabilitation);
Task 5.4 Information, communication and signaling systems as well as other safety features/technical parameters;
Task 5.5 Maintenance, operation and management;
Task 5.6 Costs and benefits/revenues, economic and risk analyses, social and environmental impacts;
Task 5.7 International Network of Cycling Lanes including its connections to neighboring countries and its position vis-à-vis the EU transport core network and the ECE AGR agreement;
Task 5.8 Alignment of individual corridors/links;
Task 5.9 Construction schedule, priorities, phasing, Master Plan time limits (2030 and 2050);
Task 5.10 Construction, maintenance and operation costs;
Task 5.11 GIS maps of International Network of Cycling Lanes in the individual member Countries and in the whole ECE region;
Task 5.12 Identification of interconnections with other transport components (railways, sea ports-inland ports-airports);
Task 5.13 Identification of possible connections and extensions to other regions (East Asia etc.)
Task 5.14 Identification of possible missing links, border crossings bottlenecks and of other inefficiencies along the ECE region.

Elaboration of pan-European master plan for cycling at Cities level –

Task 6.1 Economic and social characteristics as well as economic/population growth analysis for each city;
Task 6.2 Basic design principles – size of cities/agglomerations, bikes parking spaces, distances from train stations/ buses-trams stops, their design, equipment and services;
Task 6.3 Design speeds, upgrading of existing City lanes/building of new lanes, types of operation (types of bikes);
Task 6.4 Construction, maintenance and operation average unit costs (new links, rehabilitation);
Task 6.5 Information, communication and signaling systems as well as other safety features/technical parameters;
Task 6.6 Maintenance, operation and management;
Task 6.7 Costs and benefits/revenues, economic and risk analyses, social and environmental impacts;
Task 6.8 Cities’ Networks of Cycling Lanes including its connections to Cities public transport networks ;
Task 6.9 Alignment of individual lanes/links;
Task 6.10 Construction schedule, priorities, phasing, Master Plan time limits (2030 and 2050);
Task 6.11 Construction, maintenance and operation costs;
Task 6.12 GIS maps of Cities’ Networks of Cycling Lanes for each City;
Task 6.13 Identification of interconnections with public transport components (buses, trams, light trains, underground);
Task 6.14 Identification of connections with the International Network of Cycling Lanes;
Task 6.15 Identification of possible missing links along Cities Cycling networks or with public transport networks.
Methodology on the infrastructure module of the Cycling Master Plan

Addressing funding questions

Task 7.1 Estimate of budget for the implementation of both Cycling Lanes networks;
Task 7.2 Possibilities of stage construction;
Task 7.3 Definition on a macro-scale of the necessary technical and institutional actions for assisting the implementation of the proposed Cycling Lanes networks;
Task 7.4 Estimate of financial resources available and of potential revenues;
Task 7.5 Possibilities and potential sources of funding the proposed Cycling Lanes networks including the EU grants and project bonds, PPP and BOT schemes;
Task 7.6 Remarks on the perspectives to construct the Cycling Lanes networks;

Conclusions/Recommendations – Public awareness actions and dissemination of results – Follow-up preparations

Task 8.1 Presentation of final report with conclusions and recommendations;
Task 8.2 Presentation of the pan-European Cycling Master Plan in International and Cities level;
Task 8.3 Publication of a project newsletter, brochures and a summary report, findings and conclusions;
Task 8.4 Organization of workshops to present the progress of the project and the final results;
Thank you...!