

SEAMLESS TRANSPORT CHAINS THROUGH HARMONISATION

Success Stories and Global Perspectives for Rail Freight

Session 2: Rail Freight and Spatial Planning

Moderator:
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Present positions:

CEO IBV-FALLAST Transport Planning Consultancy, Graz/Klagenfurt, Austria

CEO STL Solutions for Transport and Logistics, Graz, Austria

Regional Director of the Austrian Traffic Science Society, Styrian Branch

Member of Austrian Association for Research on Road-Rail-Transport (FSV)

Teaching Post "Spatial Planning and Transport" part of the Master Study for "Traffic Engineering" at Graz University of Technology

Teamleader for Transport and Infrastructure in ONSS-Project: Oman National Spatial Strategy

From 1980 to 2014: Graz University of Technology

From 2004 to 2014: Deputy Head of the Institute for Transport Planning, Graz University of Technology, Austria





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Success Stories and Global Perspectives for Rail Freight

Rail Freight and Spatial planning







SEAMLESS TRANSPORT CHAINS THROUGH HARMONISATION

Success Stories and Global Perspectives for Rail Freight

Freight transport and Spatial Planning

- a stronger interplay for increasing synergy

Dr. Kurt Fallast
IBV-FALLAST







Spatial planning influences transport

Spatial planning		Transport
Urban sprawl	——	More difficult to find alignement
Residential zones	——	Restrictions for operating
Protected areas (landscape, heritage buildings or city quarters)	——	Restriction for finding alignement
Intensive land use	——	Generates transport
Decentralized production	—	Generates longer trips



Spatial planning is influenced by transport

Spatial planning

Transport

Development of regions
High land consumption
Delimitation of areas

GLOBAL

Environmental impacts (noise, air pollution)

Restriction for land use as residential zones or as areas with special requirements

Increasing decentralisation

Encourages spezialisation of production on different sites

Transport infrastructure

operating

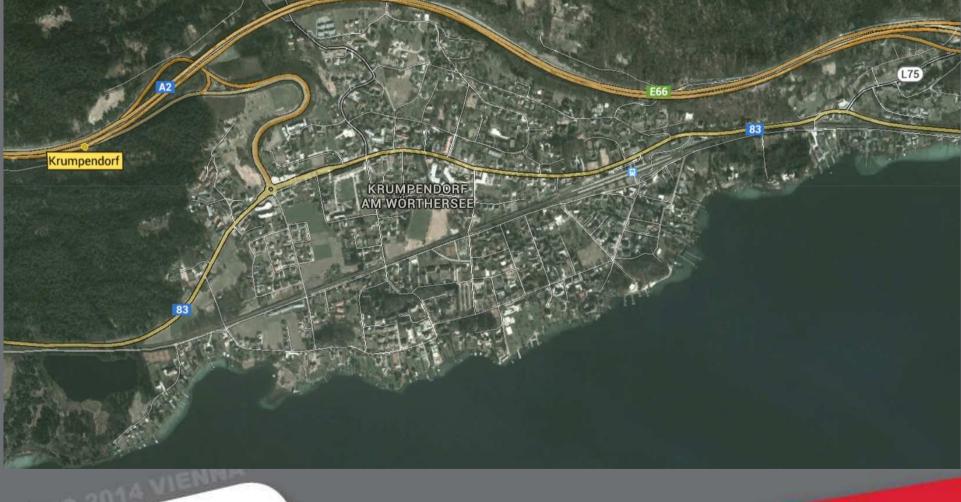
operating

Cheap transport

Cheap freight transport



How to evaluate these impacts?







Spatial planning in Transportmodel

Development scenarios (input)

Sociodemographic Development

Economic development

Spatial planning and land use

Road network
National ports
Railway network

Transport model

Environment impact model

Impacts

(output)

Accessibility

Economic impacts

Sociodemographic impacts

Transportation network

Traffic volume (passenger, freight)

Environmental (air pollution, noise, ...)

Traffic Safety

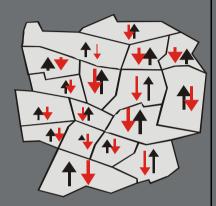




The 4-step Transport model

Step 1: Traffic generation

How many trips? (residential, work places, education, shopping, leisure)



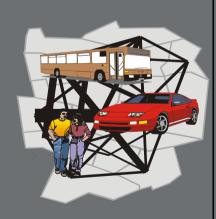
Step 2: Origin-Destination-Matrix

Distribution of trips (from Origin to Destination)



Step 3: Modal Split Mode of the trips?

- Walking
- Bicycle
- Public Transport
- Private cars
- Freight by truck
- Freight by rail

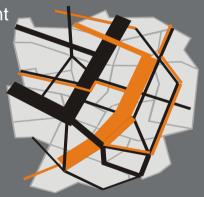


Step 4: Traffic assignement

Which route?

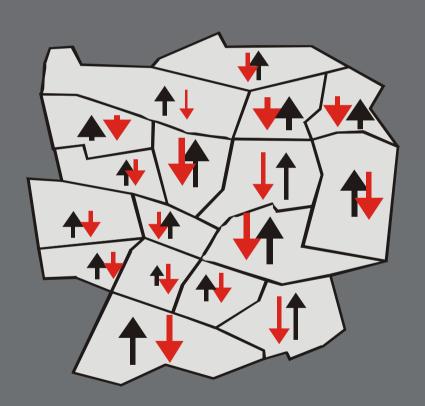
Criterias:

- travel time
- costs
- accessibility
- safety
- comfort





Step 1: Trip generation

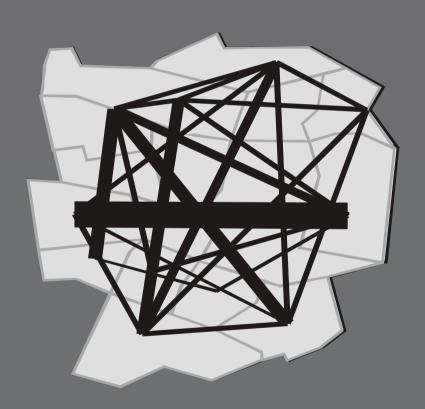


How many trips?

- Intensity of land use
- Zoning (industry, trade, economy)
- Number of work places
- Shopping facilities
- Leisure facilities



Step 2: Trip distribution



Origin / Destination Matrix

- Intensity of land use
- Zoning (industry, trade)
- Number of working places
- Shopping facilities
- Leisure facilities



Step 3: Modal Split



Which mode?

- Costs
- Trip length
- Type of goods
- Multi modal facilities
- Restrictions (night time, weekend, holidays)
- Restrictions (emissions)
- Weight limits



Step 4: Traffic assignement



Which route?

- Costs
- Transport time
- Traffic conditions
- Transport network
- Restrictions (night time, weekend, holidays,..)
- Restrictions (emissions)
- accessibility



Rail freight transport

- Rail freight transport needs large-scale spatial planning
- Rail freight transport needs regional spatial planning to secure space for intermodal facilities (terminals),
- Rail freight transport needs long-term spatial planning with vision





Criteria for industrial sites

- Connection to rail network
- Closeness to intermodal facilities
- High density of land use
- Sustainable « mobility of short trips » also for freight transport
- Concentration of industrial sites



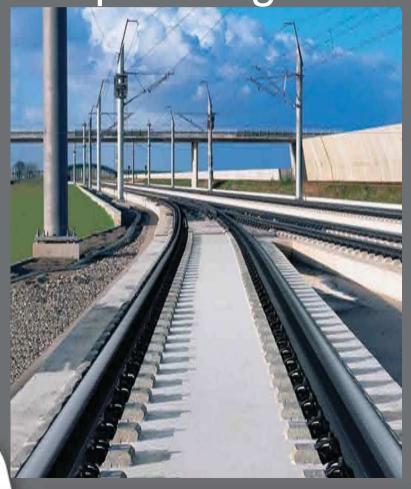


Let's straighten things out!





operating in coordination with spatial planning







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