“Sustainable Planning for and with Munich’s Public Transportation”

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Outline

1. Livable cities as key elements of worldwide sustainable development
2. Munich - recognized as one of the leading livable cities
3. MVG - an integrated operator and infrastructure provider
4. Metro projects
5. Tram projects
6. Bus projects
7. Summary
8. Conclusions
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Climate Change and Urban Growth

• The main producers of climate change are the metropolitan areas throughout the world
• In the future, exactly those clusters will further grow and concentrate even more production, services, housing and need for mobility
• This means further problems with all types of emissions…
• It also means, that small, big and mega cities have a (huge) responsibility for our planet and a great opportunity to save our environment for future generations on the planet!
Trends

Fight against global warming (reduction of greenhouse gas emissions, i.e. carbon dioxide)
- in agglomerations: public transit is useful instrument, because:
  - high share of public transit is climate protection (significant better carbon footprint)
  - but: public transit has to become even better

Rising energy prices
- Rise in cost of motorized individual transport shifts mobility towards public transit = more riders
- but: reduction of specific energy consumption in public transit and new energy sources remains a challenge

Spatial development
- back to the city/regional population decreasing = growth in urban areas
- but still: on the weekend „back to the countryside“
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Some Background Information about Munich today

- Population: City 1.43 M; Munich Metropolitan Region 5.5 M
- Outstanding position in science, research and education
- High innovation potential
- Excellent infrastructure
- High recreational potential
- Number 1 in economic growth in Germany
- The already high commuting movements, in and out of town, are expected to increase further more
Some Facts about Munich's Sustainable Mobility

- In comparison with other large German cities, Munich has today the highest modal split of public transport.
- In comparison with other large German cities, Munich has the highest share of bicycle transport.
- In the Munich traffic management policy, public transportation plays an outstanding role.
- Munich is in the process of taking a leadership position in mobility management on a Europe-wide basis.
Munich – General Policies

- Priority of PT in all strategic and planning documents of the city
- Transit oriented development since 1950’s
- Almost 90% of urban growth since 1990 within the area of metro and tram stops
- 3 billion € invested in metro construction 1966-2006
- 100km metro network
- 75km light rail network
- 480km bus network
- 24 hour network by trams and buses 365 days a year
- Accessibility of 95% of all stops and vehicles
- Presence of service and security staff in the metro-system
- The „Green Zone“ for motor-cars in the city centre (since 2008)
- Ban of heavy trucks in the inner city area (since 2007)
Urban Development Strategy – “Compact, Urban, Green”

2. Munich - recognized as one of the leading livable cities

Priority to the development of locations already accessed by train, metro and tram

Building Permit since 2003
- New Living Areas
- Inner Development,
as Recycling of Rail
  and Military
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Complete and integrated managed public transport service for the city of Munich

City of Munich is MVG’s owner and organizing authority for public transport

• **METRO:** operation, vehicles, maintenance, infra, finance
• **TRAM:** operation, vehicles, maintenance, infra, finance
• **BUS:** operation, vehicles, maintenance, infra, finance
• **PLANNING:** competence for strategic and operational measures throughout all processes with environmental, economical and social impacts
MVG – an integrated operator and infrastructure provider

MVG serves about:
- 1.3 million inhabitants in Munich and another 0.3 million inhabitants of the metropolitan region
- 925,000 employees in Munich
- more than 8 million tourists in Munich every year

Metro:
- 307 million passengers / year
- 6 lines operating daily every 5/10 minutes from 4:30 to 1:30
- 70% of population live close to metro stations (1000 m)

Tram:
- 83 million passengers / year
- 10 lines, 20 hour services in main lines plus nightlines
- 30% of population live close to tram stop (400 m)

Bus:
- 162 million passengers / year
- 62 lines, 6 nightlines
- 86% of population live close to bus stop (400 m)
Coherent Policies…

- … integrate urban development und PT planning from the beginning
- … create intermodality, that means…
- … easy access by foot, bike + ride and park + ride facilities
- … create a safe environment and mixed use of functions to reduce travel distances
- … create services that that enable people to travel without car even for complex trip chains
- … create the right taxation and legal framework to strengthen PT
- … integrate people’s feedback to the suggested measures to sustain it
MVG’s Intermodality

- Walkability of almost all the city (design and security) as major pre-requisite for high acceptance of PT
- 1200km of complementary cycle network
- Intermodality of PT with cycling, parking, car-sharing means…
- … 30,000 bike racks in downtown Munich
- … 25,000 park+ride facilities in the metropolitan region
- …soon 10,000 car-sharing users
- Restricted parking policy (restrictions to build parking space)
- Restricted parking policy (pricing and time limits to park)
Integration of PT in urban street space

- ... shortens access to transit
- ... creates visibility and awareness for public transport
- ... obliges to reduce street space for cars
- ... connects people closest to neighbourhoods and communities, physically as well as economically
- ... sets a clear priority for PT in the limited public street space
Transit oriented land use in Munich…

- … is the major prerequisite for **cost effective** public transport
- … is the most effective strategy **against urban sprawl**
- … allows to **reduce** space for car-parking
- … reduces overall **lifecycle costs** for private households and the public bodies (economic efficiency)
- … reduces **car dependency** dramatically
- … allows **social inclusion** of all parts of society
- … is the **most sustainable** answer to energy problems beside better energetic building standards and industrial potentials
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4. **Metro projects**

**Expansion of the metro station „Marienplatz“**

- Enlargement of the platform surfaces to enlarge capacity
- Equalization of passenger flows
Expansion of the metro station „Fröttmaning“
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Line 23 (Tram Parkstadt Schwabing)

Simulation Tram Stop Münchner Freiheit

Construction works – Dezember 2008

The new Köln Square – Oktober 2008

Housing Construction at Parkstadt Schwabing

5. Tram projects
Tram St. Emmeram

- Construction permit awaited for September 2009
- Spring 2010: start of construction works, finishing spring 2011
- about 14,300 passengers expected daily in the busiest section
Tram-Extension Pasing Station together with a Central Busterminal

- Planning 2002-2009
- Building Permit 2011
- Construction works: 2012 – 2013
- About 3,000 extra passengers expected
Tram Westtangente

- Length 8.5 km
- Connecting 8 east-west running train, metro and tram routes
- Inhabitants served: about 43,000
- Employees served: about 34,000
- About 38,000 passengers daily expected in the busiest section
The new Tram 'Variobahn'
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Project: tram and bus prioritization

- Increased average speed:
  + approx. 22% (from 16.5 to 21.2 km/h)
- Improved punctuality:
  + approx. 20%-points to a yearly average of 78% (peak result: 87%)
- Increased ridership:
  + 7 - 26% (according to line)
- Higher revenue due to more riders
  + approx. 25%
- Increased efficiency
  - 14 % vehicle requirement
  - €4 mil. operational costs per year
- More service:
  + 9% only by tram, even more by bus
 Implemented and planned tram and bus prioritization
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53% of all households are single households, many having higher incomes
• 650 cars/1000 inhabitants
• BMW producing high level performing cars in Munich
• German Car Drivers Association ADAC based in Munich

but/and
• 45% of all households do not own a car!
• 95% of Munich residents use at least once in three months PT
• 70% use PT every week at least once
• more than 40% daily PT users

Things can happen!
MVG Munich – Summary (2)

- 32% of all trips made by PT, 42% of all motorized trips by PT
- 90% of all trips to the core city centre made by PT
- 10% less car trips in the central district 1996-2006
- 26% walking and cycling trips
- High value of properties close to metro- and light rail stops
- Air quality quite good, but due to EU- regulations in some streets further restrictions for private cars to be planned
- Main problem remains regional trips to Munich related trips, remain to a quite big part car-based and will rise faster than inner-urban mobility until 2020 and require more PT invest
- The urban land use and mobility strategy has stopped growth in car use since the 1990s
- The future challenge remains stricter land use policy in the region
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Conclusions (1)

- Sustainable cities give clear priority to alternative modes to private car (that means not to the car at the same time – limited resources!)
- These cities can reduce their overall energy consumption dramatically compared to cities favouring private car use
- It is decisive that cities have a comprehensive strategy that is put into reality within a master plan
- Only cities with a PT network will have success; single projects do not lead to sustainable use of PT
- Land use, urban and street design, security and cultural richness are together key elements for successful PT
Conclusions (2)

- Reliability and appropriate capacity as well as high level of service only can sustain PT and keep citizens as long term users.

- All kind of barriers such as informational, economical and physical obstacles have to be abandoned to create a non-discriminating network.

- Authorities have to establish a long term financing structure to enable operators to build and extend comprehensive networks.

- In liveable cities, citizens have integrated PT in their life planning, it becomes part of the mobility and urban culture (way of life).

- Therefore stakeholder engagement is important to exchange and monitor citizens needs and expectations.
Thank you very much for your attention!