



**CiViTAS**  
Cleaner and better transport in cities

**CATALIST**  
.....



## **Collective Passenger Transport Experience City of Graz**

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THE CIVITAS INITIATIVE  
IS CO-FINANCED BY THE  
EUROPEAN UNION

## Overview



- **General Data and Statistics**
- **Planning Principles**
- **Public Transport in Graz**
  - Extending Tram-Network
  - New Vehicles  
(Bio-Diesel -> Bio-CNG)



## *City of Graz*



- **European Cultural Capital City 2003**
- **Area 127 km<sup>2</sup>**
- **~ 255.000 inhabitants** (1991: 238.000)
- **~ 121.000 jobs** (1991: 134.000)
- **District Graz–Umgebung (surroundings)**
  - 131.000 inhabitants (1991: 118.000)
  - 36.000 jobs (1991: 26.000)



## *Infrastructure*

- **Bicycle route network** ~ 116 km
- **Public transport network** ~ 392 km
  - Tram (6 lines) ~ 49 km
  - Bus (37 lines) ~ 343 km
- **Road network** ~ 996 km
  - Priority roads ~ 194 km
  - Roads without priority ~ 802 km



Stadt GRAZ Stadthausdirektion



## *Mobility of the population*

- **On average every inhabitant makes 3.7 trips per day** (2004: 3,7)
- **He/she covers 23,5 km on average** (2004: 23 km)
- **And spends 83 minutes in traffic** (2004: 78 min.)
- **0.9 million trips are made every day in Graz** (2004: 1.1 mio.)

mobility survey 2008

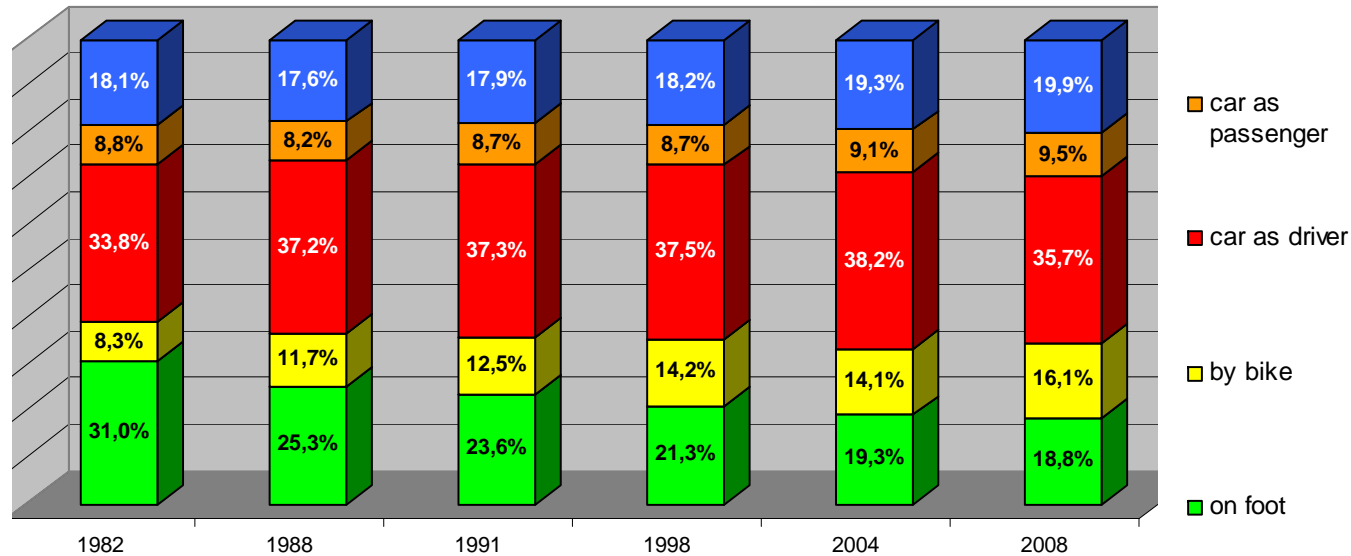


## *Planning principles Policy Guidelines*

- **Graz – a city of good accessibility**
- **Graz – a city of short distances**
- **Graz – a city with a balanced distribution of the means of transport**
- **Graz – a city with socially and environmentally compatible traffic**
- **Graz – a city with public participation**



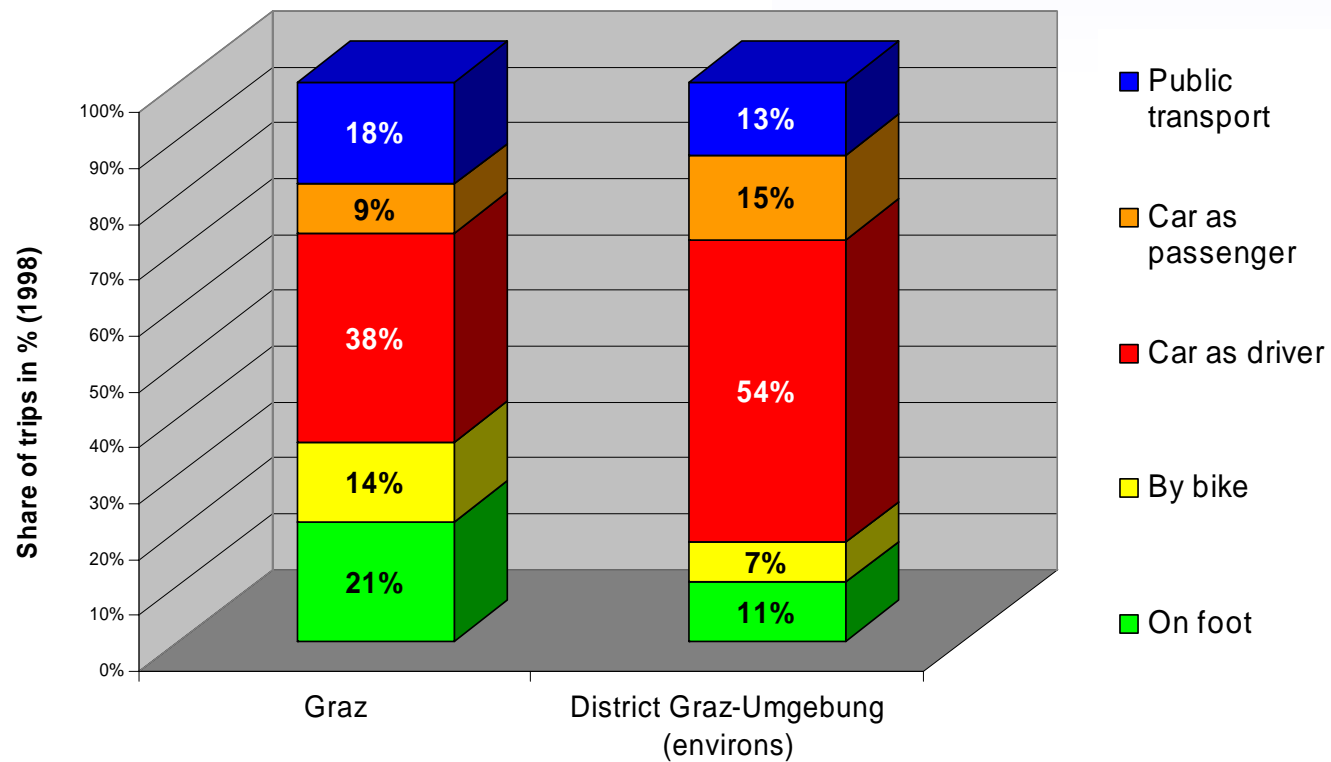
## Modal Split – mode choice



mobility survey 2008



## Mobility - City and District



## *The idea of Gentle Mobility*

- **developed since 1980**
- **Gentle Mobility**
  - forcing of the environmental friendly group (pedestrians, bike, PT)
  - reduction of car use on a necessary level
  - speed reduction (Tempo 30/50)
  - on-road parking management



## *Planning principles: Gentle Mobility since 1980*

- **Priority for environmental friendly modes**
  - **Creation of a „green network“**
    - foot and bike network
    - Direct connection to city centre and city quarter centres
  - **Making public transport more attractive**
    - User friendly stops
    - Modern vehicles
    - securing connections, correct timetables
    - Extension and priority measures



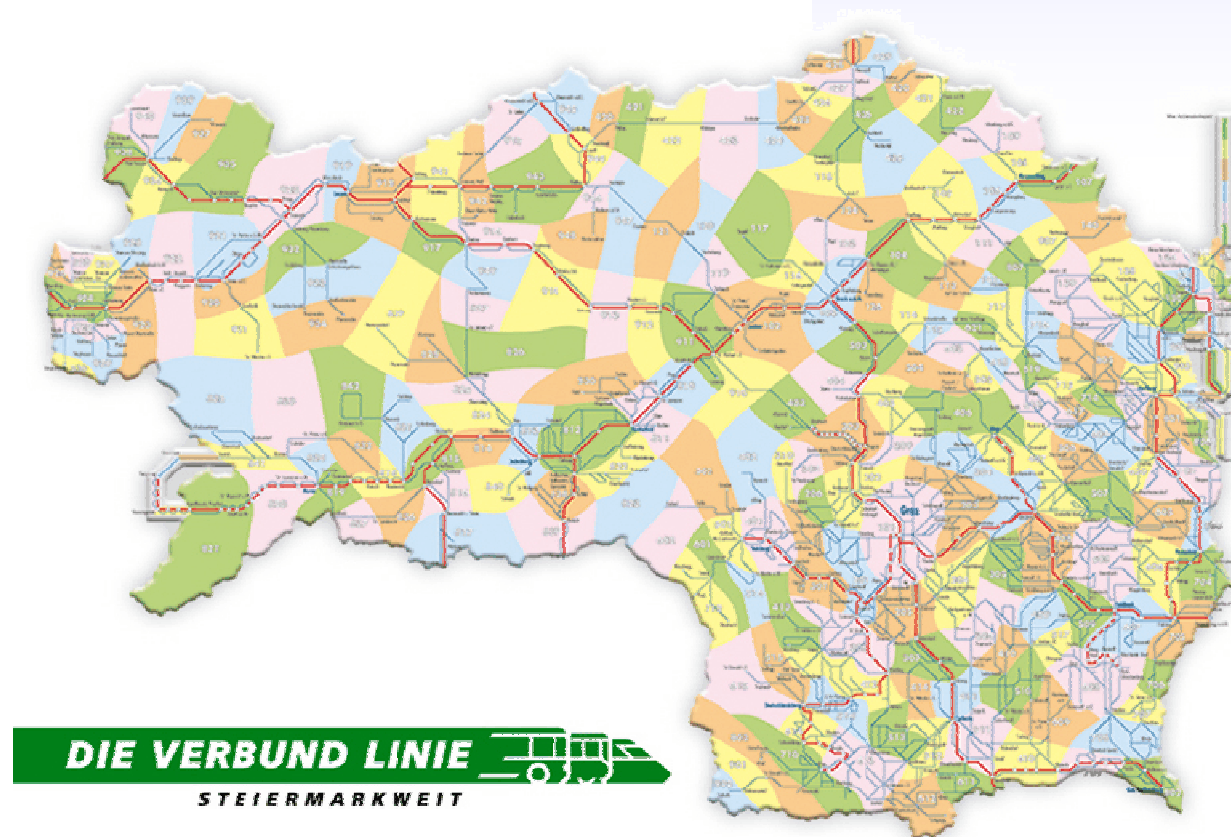
## *Planning principles: Gentle Mobility since 1980*



- **Keeping through traffic out of residential areas**
  - Closing gaps in the priority road network
  - Direct link-up of industrial and commercial areas with the priority road network
- **Parking management**
  - Park & Ride at the city edges and in the region
  - Different tariff zones
  - Extension of short term parking zones
- **Speed reduction**
  - Tempo 30/50



*Attractive Public Transport –  
one ticket for the whole Region*



## *Attractive Public Transport – Tram Extensions*

- **3 Tram Extensions Realised 2006 / 07**

- Extension Linie 4

- Length: 1,5 km
- Costs: € 15,1 Mio.
- Passengers: ~ 7.600

- Extension Linie 5 (to the interchange Puntigam)

- Length: 0,4 km
- Costs: € 15,2 Mio.
- Passengers: ~ 6.700



## *Attractive Public Transport – Tram Extensions*



- **3 Tram Extensions Realised 2006 / 07**

- Extension Linie 6

- Length: 1,8 km
- Costs: € 19,4 Mio.
- Passengers: ~ 8.300

- **2 New Interchanges**

- Connection between light railway, tram, regional and urban bus-lines with P+R facilities

- **Mobil Central – Info Centre**

- **Bike and Ride facilities**

## *Attractive Public Transport – Next Steps (in planning)*



- **New Southwest Tram-Line**
  - Length: 7,7 km
  - Costs: ~ € 80,0 Mio.
  - Passengers: ~ 22.000
- **New Northwest Tram-Line to the new Interchange Gösting**
  - Length: 4,4 km
  - Costs: ~ € 48,0 Mio.
  - Passengers: ~ 15.000

## *Attractive Public Transport – Next Steps (in planning)*

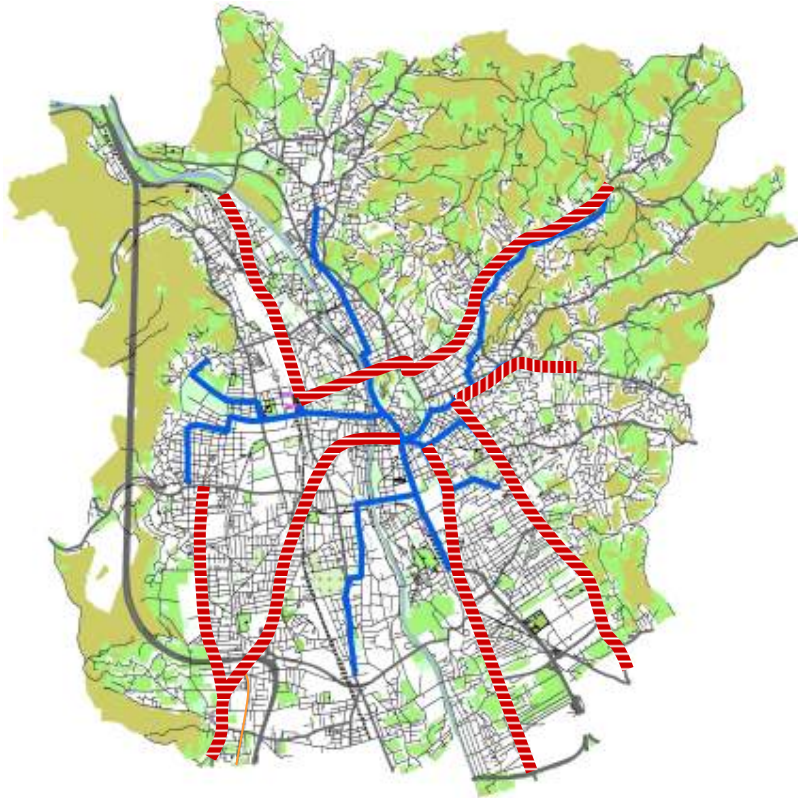


- **Circle Line – University**

- Length: 1,4 km
- Costs: ~ € 15,0 Mio.
- Passengers: ~ 2.000

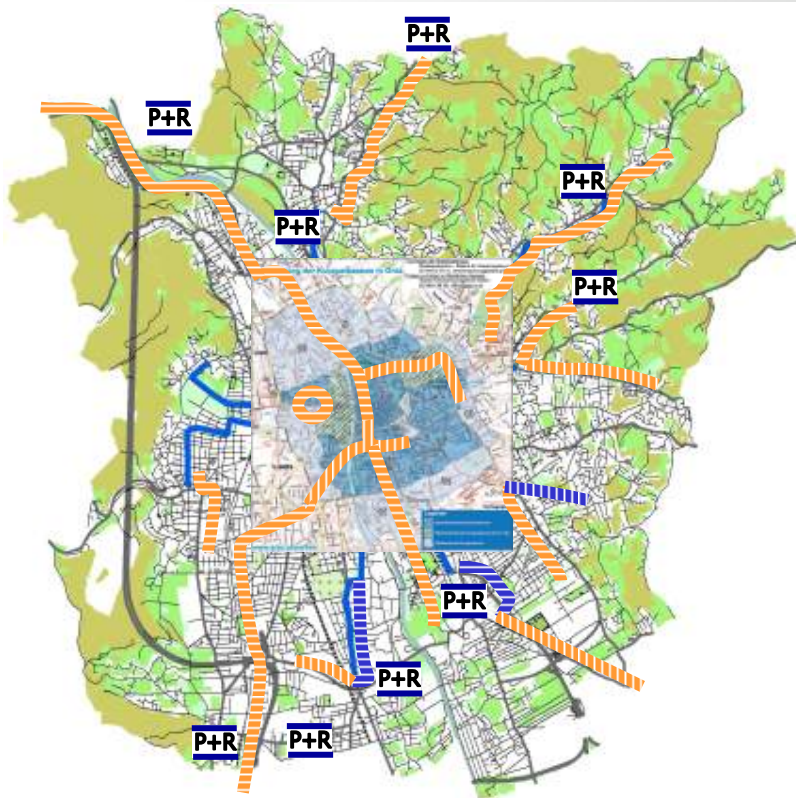


## *Attractive Public Transport – Next Steps (in planning)*



- **bus - corridors / extension**





## *Projects – parked cars*

- **advancement of on-road parking-management**
  - zones of short-term parking
  - chargeable on-road parking („Parking-zone“)
- **P+R areas at rail- and/or Tram-lines**
  - 2.100 existing parking places
  - 2.000 parking places in planning stage

## *Attractive Public Transport – for the next decades*



- **Completion Tram – Network**
- **Light-Railway operation on railway lines to reach suburban areas**
- ....



## *Attractive Public Transport – New Vehicles - Tram*



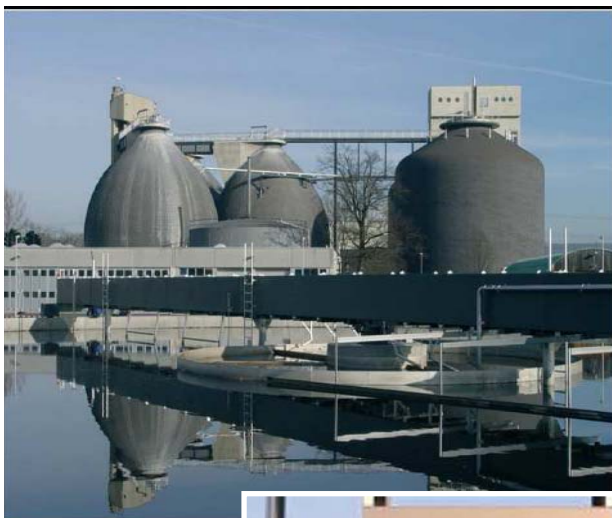
- **City-Runner**
  - 100% low-floor technology
  - Since 2002 in use
- **Variobahn – Stadler**
  - 45 new vehicles appointed
  - Delivery from 2009 to 2015
  - 100% low-floor
  - €2,16 Mio. per vehicle
  - Option to enlarge to a length of 40 m

## *Attractive Public Transport – New Vehicles - Bus*



- **134 Bio-diesel Busses**
  - 1<sup>st</sup> trials with 2 busses in 1994
  - Start to change in 1997
  - 2006 all busses run with bio-diesel
  - Since 2005 diesel particulate filter will be built in
  - Bio-diesel a proven technology
- **Lower Emissions**
  - -92% Hydrocarbon
  - -97% Carbon Monoxide
  - -90% Micro Dust

## *Attractive Public Transport – New Vehicles - Bus*



- **In face of the effective bio-diesel technology it's a question of resources**
- **Consideration to change to Bio-CNG**
- **Gathering of organic waste, liquid manure under implication of sewage plant**
- **To run a bio-gas factory**
- **1<sup>st</sup> step with 4 busses 2009**

## *Attractive Public Transport – Next Steps (in planning)*



- **Underground connection on main railwaystation**
  - About 40.000 passengers per day
  - Connections between railway, 4 tram-lines, 25 regional and urban bus-lines
  - Realisation from 2010
  - Estimated Costs: ~ €90,0 Mio.



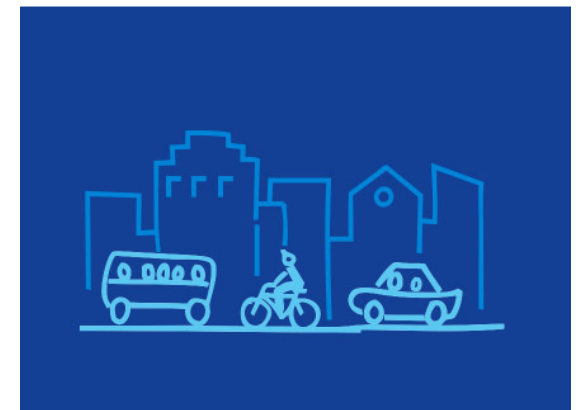
## *Financing Public Transport*

- **96 mio. pass. per year in the city**
- **Revenue to Cost ratio at ~69%**
- **Financing Contract between City of Graz – PT-Operator GVB since 2009**
  - Term of Contract 10 years
  - Volume €500 Mio.
  - Include acquirement of vehicles  
track maintenance  
development of passenger information system



## *Financing Public Transport*

- **Integrated Tariff System since 1994**
- **Financing Partners**
  - Federal government (€ 9,27 Mio.)
  - Regional government (€ 13,46 Mio.)
  - City of Graz (€ 4,93 Mio.)
  - Order of PT-Services (€ 15,34 Mio.)
  - Total (€43,0 Mio.)**
- **Tariff subsidy of ~ €23,69 Mio.**



*Thank you for your attention*



*DI Gerhard Ablasser*

City of Graz

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