Traffic planning and Public Transport in Freiburg

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VAG

Freiburg:

- **Population: 220,000**
- **CO_2 reducing aim: 40 % by 2030**
  (compared to 1992)
- **Freiburg CO_2 report 2009: -18.5 %**
  (compared to 1992)
- **CO_2 reduction per capita: -25.6 %**

Passengers public transport 2013: 77,000,000
Passengers public transport/ day: 211,000

Statistically every resident makes 1 trip by PT/day

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Mobility in the city …

… **is a political task**

… **needs (rare) space:** Car traffic in average needs ten times more space per person than public transport!

… **generates noise**

… **causes air pollution:** About 20 percent of CO^2-emissions in Germany are generated by car – passengers of public transport in average are causing only 1/3 of CO^2 emission compared to car drivers

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Experiment: Need of space ► car versus bus

Traffic jam on a four lane street

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Experiment: Need of space ► car versus bus

Drivers without their cars

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Experiment: Need of space ► car versus bus

Same number of drivers taking the bus

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1901: Start of the electric Streetcar

Even the first lines went through the city center. “Into the heart of the city.”

This hasn’t changed until nowadays.

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Reconstruction

In the second World War downtown of Freiburg was destroyed by 80 %.
The municipal council decided to rebuild the city center in the medieval ground plan

Consequence:

Not much space for mass mobility in the city center

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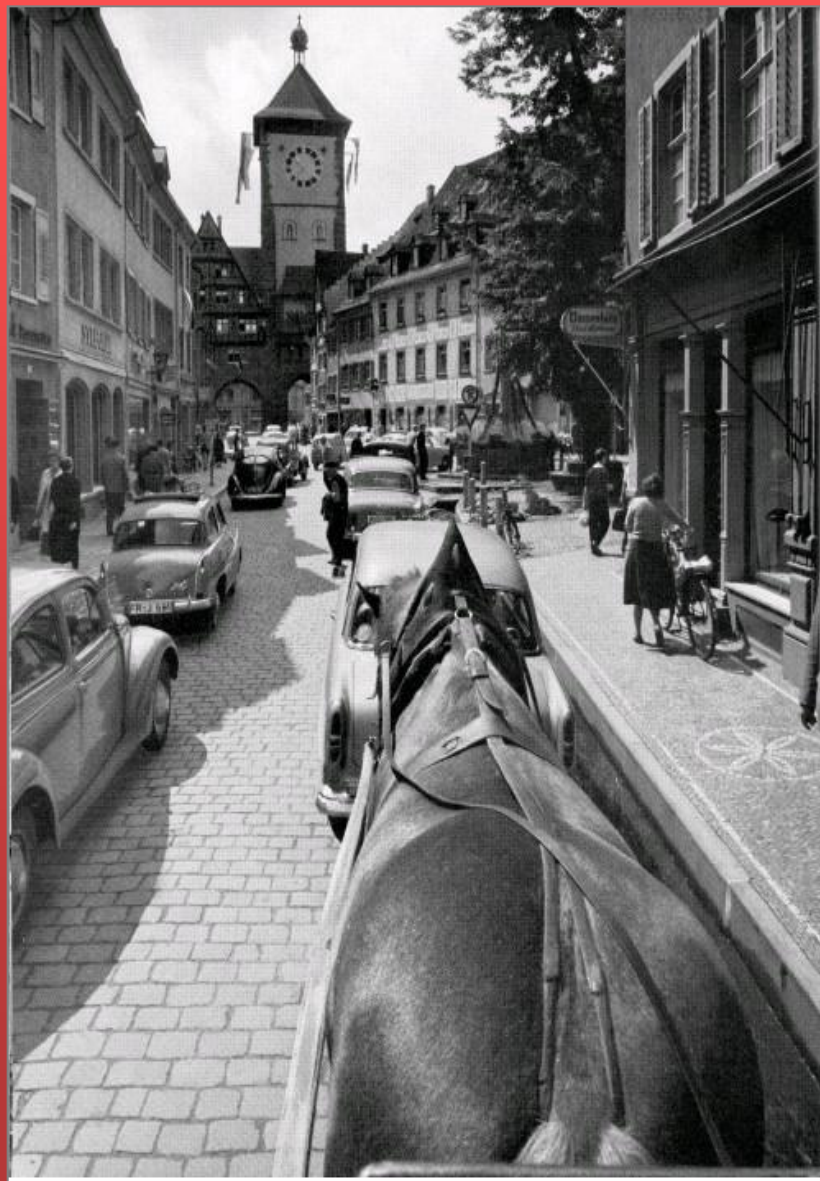
Introduction of the pedestrian zone

Downtown until 1972:

In the narrow downtown streets the increasing number of cars led to a decrease of quality of live in the city center.



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Introduction of the pedestrian zone

Downtown since 1973:
The introduction of a pedestrian area raised the quality of the city center

► Now it was necessary to guarantee that everybody is able to reach the city center without a car by other means of mobility

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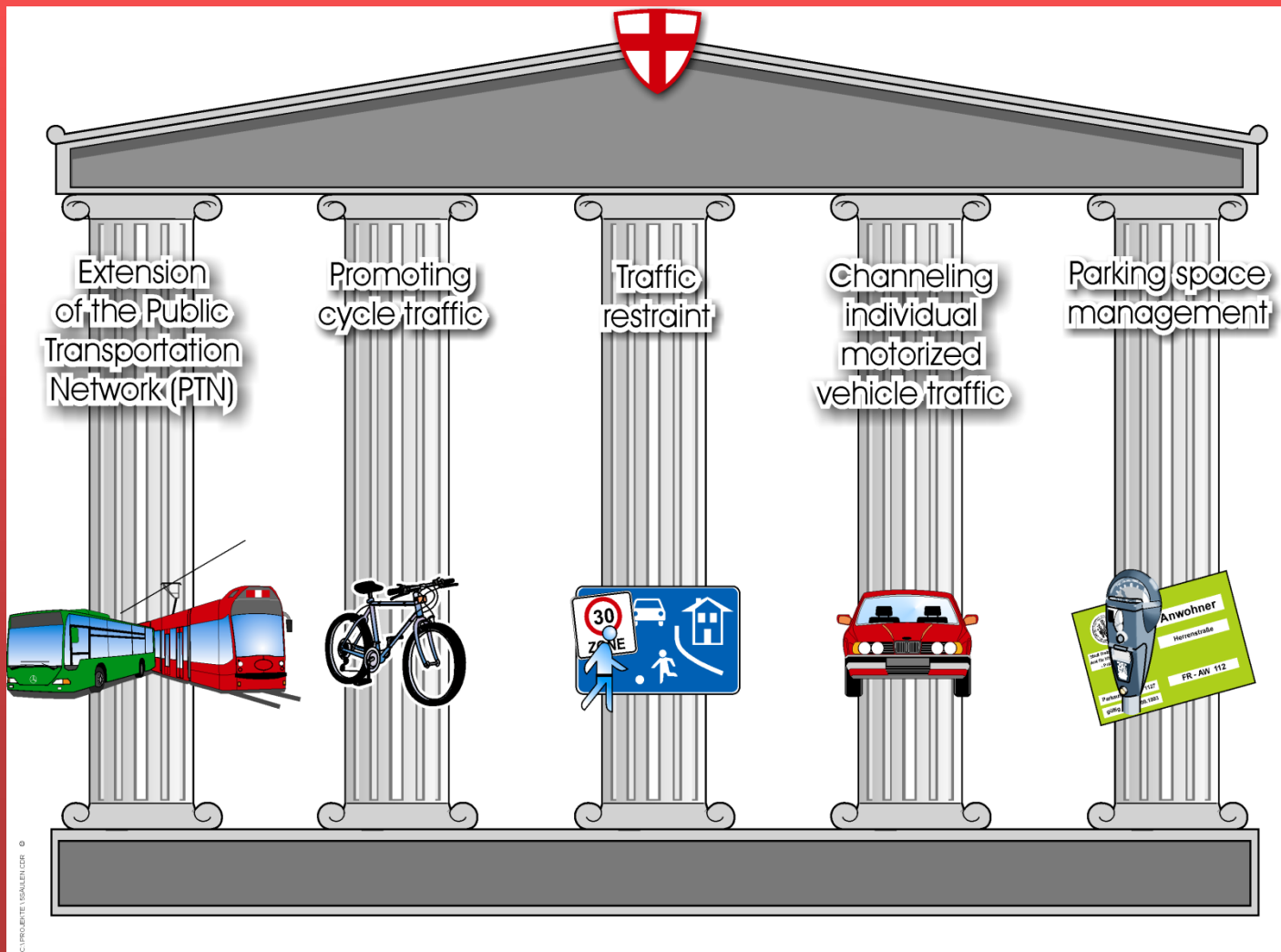
1989: Cybernetics mobility concept

►Town-, life- and environmental-quality improved



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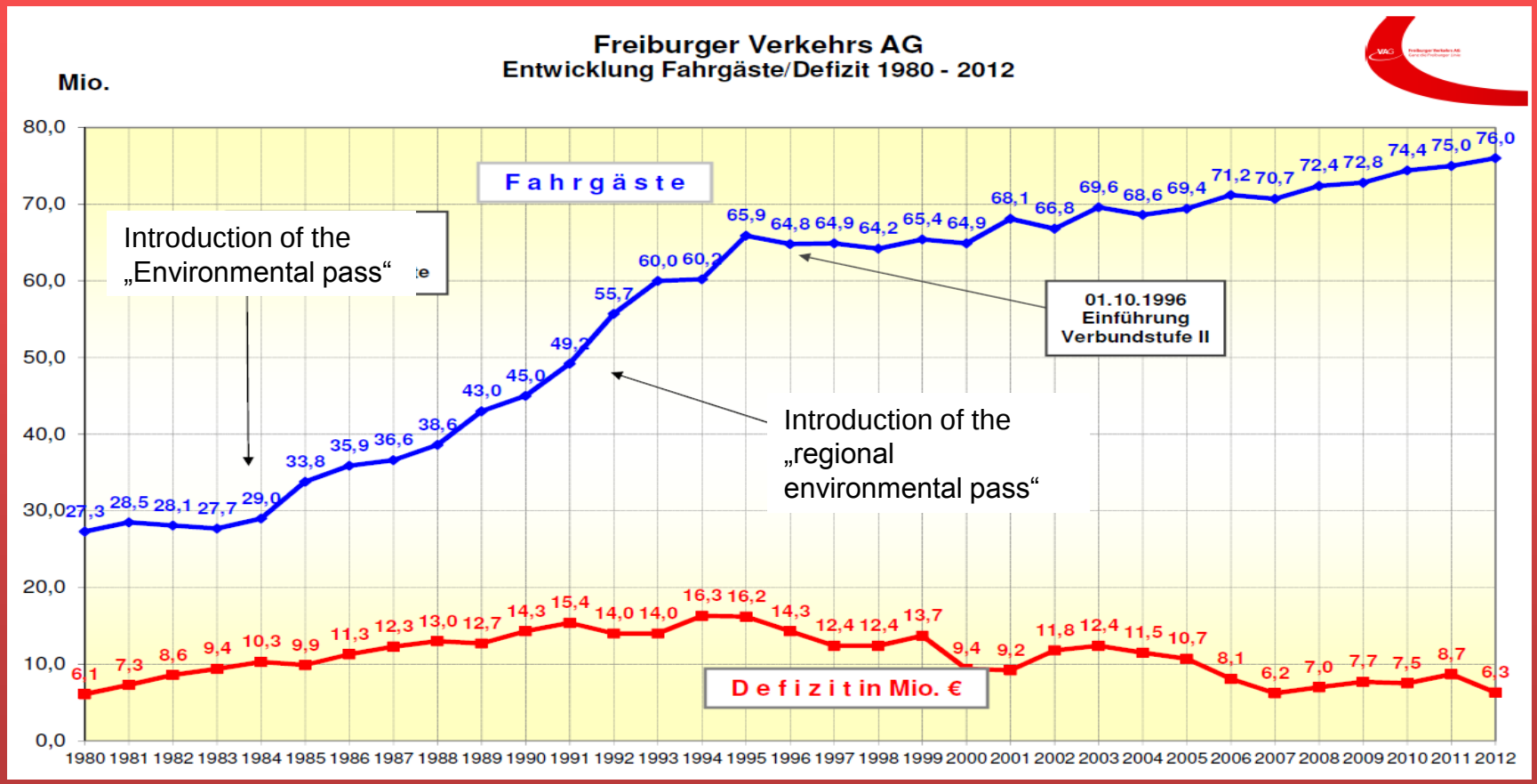
Development of the number of customers of public transport in Freiburg



Until 1984 the number of customers was constant ~ 28 Million Customers/Year – while the deficit was rising and rising

By changes of the image, the fare system and a better offer of public transport, the number of customers and the productivity increased

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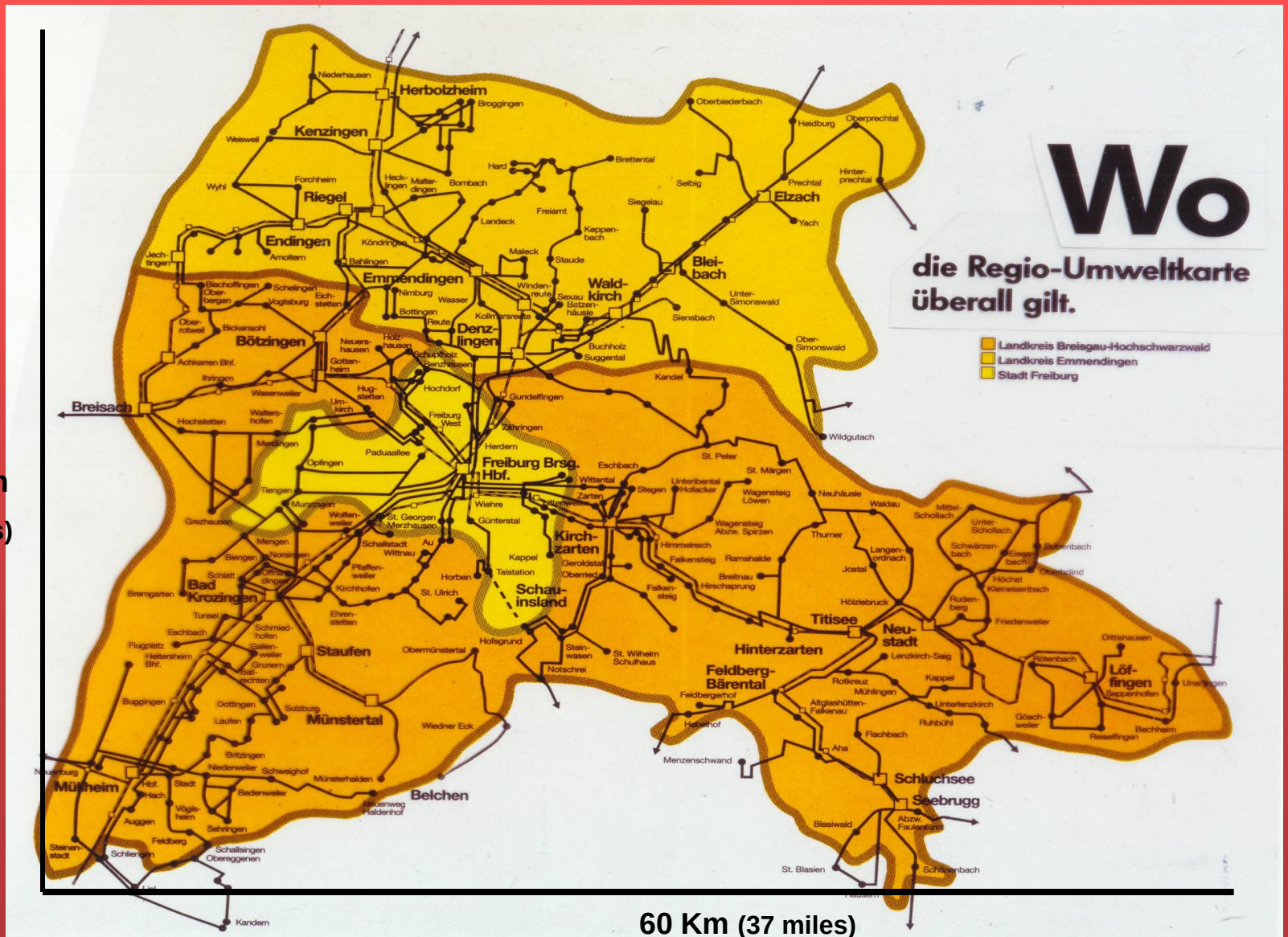

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How to make public transport attractive? It has to be …

- fast
- cheap
- easy understandable (fare system)
- available
  - good frequency
  - close to everyone

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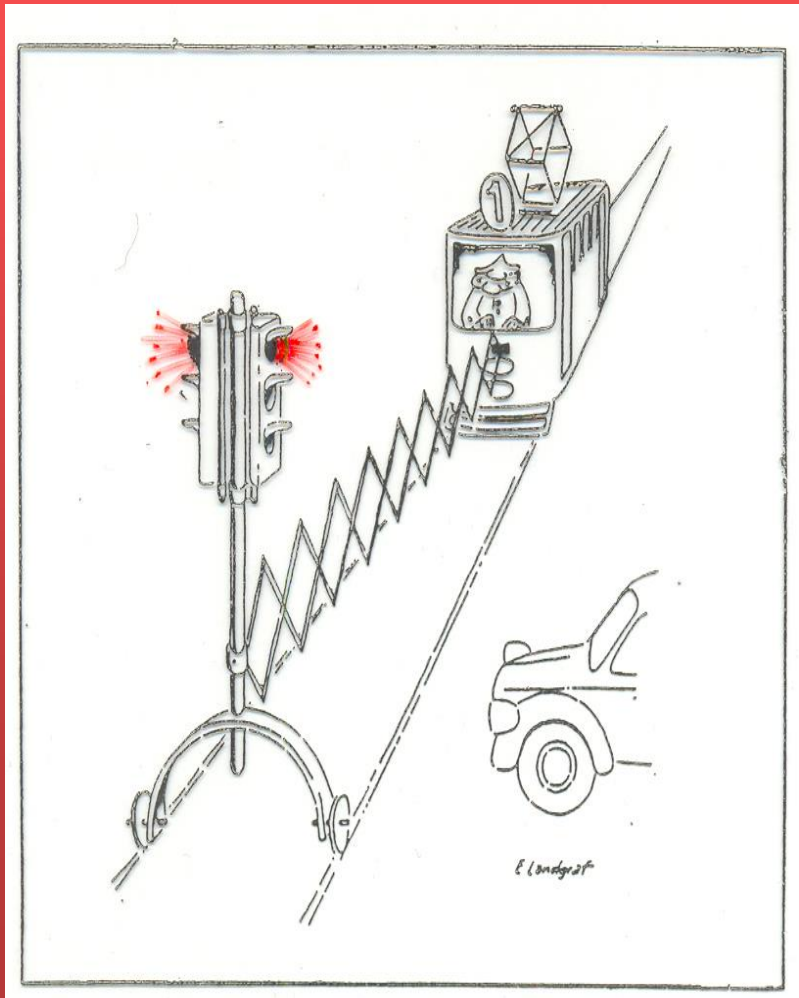
Acceleration oft the streetcars by…

- priority at traffic lights



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Acceleration oft the streetcars by…

- lowfloor vehicles
  - an advantage for handicapped persons
  - easy and fast access for everyone

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Acceleration oft the streetcars by…

- separate track for the streetcars
  - independent from the car traffic

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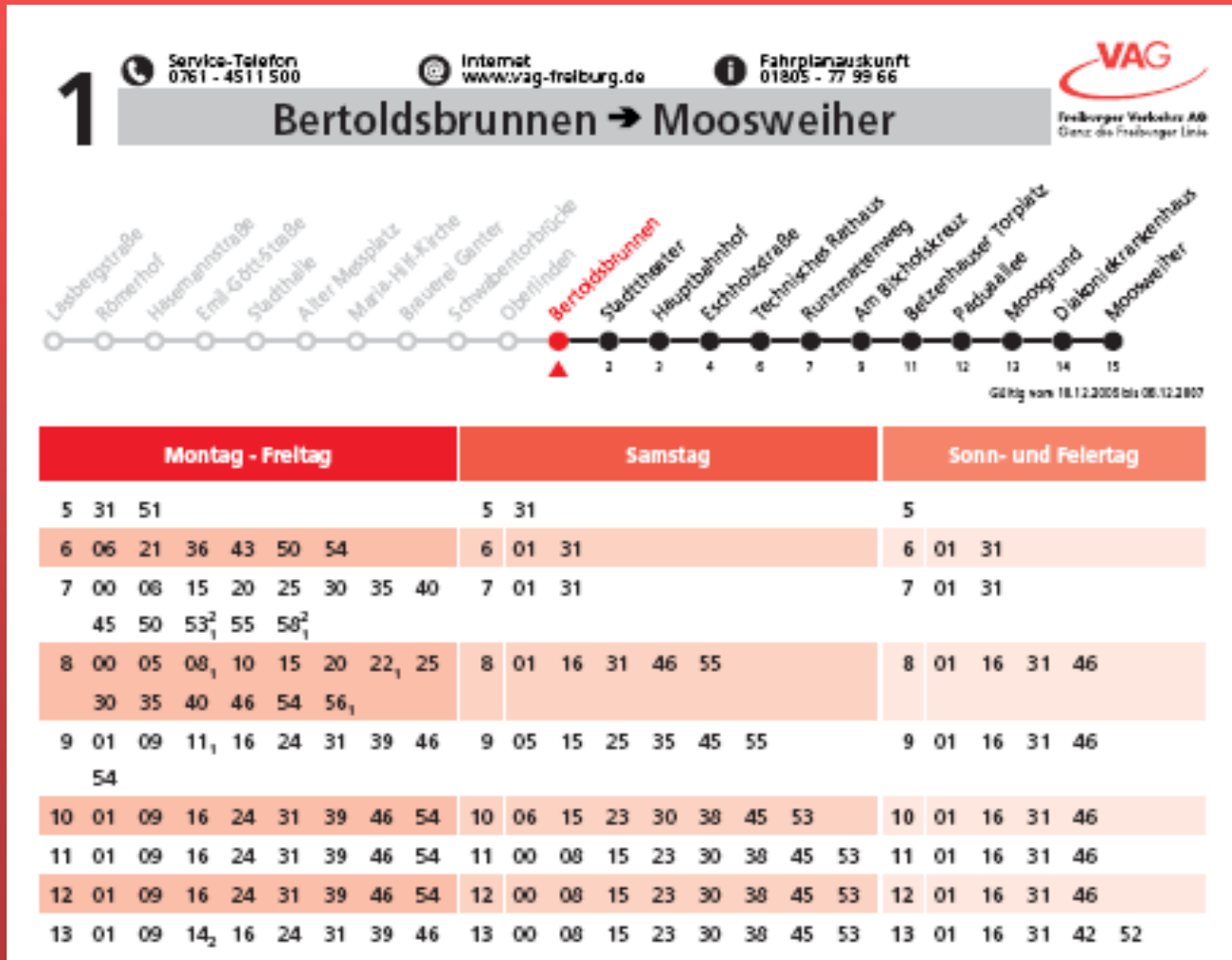
Frequency

- Streetcar lines are running every 7,5 minutes
- Main bus lines are running every 15 minutes
- More dense frequencies in the rush-hour



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VAG Freiburger Verkehrs AG

Bertoldsbrunnen ➔ Moosweiher

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2 2 4 6 7 9 11 12 13 14 15

Gültig vom 18.12.2006 bis 08.12.2007

Montag - Freitag	Samstag	Sonn- und Feiertag
5 31 51	5 31	5
6 06 21 36 43 50 54	6 01 31	6 01 31
7 00 08 15 20 25 30 35 40 45 50 53^2_1 55 58^2_1	7 01 31	7 01 31
8 00 05 08_1 10 15 20 22_1 25 30 35 40 46 54 56_1	8 01 16 31 46 55	8 01 16 31 46
9 01 09 11_1 16 24 31 39 46 54	9 05 15 25 35 45 55	9 01 16 31 46
10 01 09 16 24 31 39 46 54	10 06 15 23 30 38 45 53	10 01 16 31 46
11 01 09 16 24 31 39 46 54	11 00 08 15 23 30 38 45 53	11 01 16 31 46
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13 01 09 14_2 16 24 31 39 46	13 00 08 15 23 30 38 45 53	13 01 16 31 42 52

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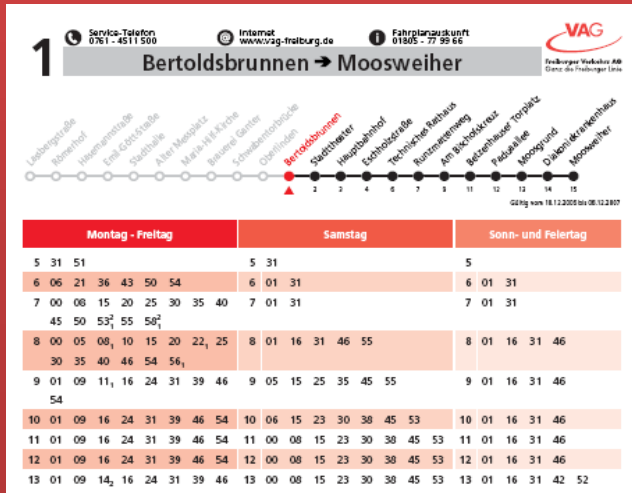
Frequency

- Connection between streetcar and suburban bus lines is guaranteed
- Bus and streetcar conductors automatically get an information about delay of other lines in the display of the dashboard



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Frequency

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Night traffic at weekends

- Five bus lines in the nights from Friday to Saturday and from Saturday to Sunday
- Start in the city center at 1.11, 2.22, 3.33 and 4.44 am

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Night traffic at weekends

- Taxi service to the towns and villages around Freiburg

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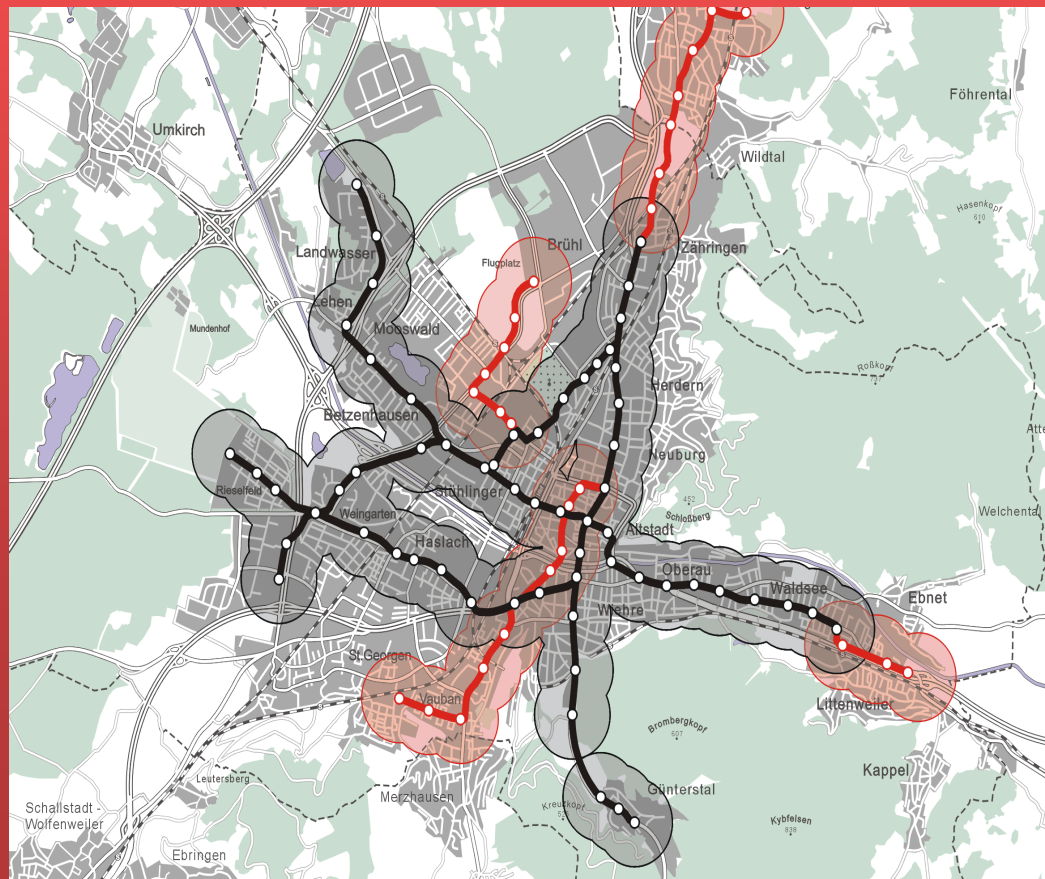
Planning of streetcar lines close to the customers!

(New) Streetcar lines have to be planned in the center of the urban developments.

They have to be planned where many inhabitants …

… are living
… are working
… are spending their leisure time



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Planning of streetcar lines ► Example: “Rieselfeld”

New residential area (75 hectare) built under strict social and ecological points of view.

The track of the streetcar is the central axis of mobility.

The new line was opened in 1997 when only 1000 inhabitants lived there

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Planning of streetcar lines ► Example: “Rieselfeld”

- Streetcar planned as central axis of mobility
- No apartment more than 400 meters away from the next streetcar-stop
- Streetcar runs every 7,5 minutes
- Maximum speed for cars: 30 km/h

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Example main station: Connecting different kinds of mobility

- Long distance and regional traffic of German Railway
- Three streetcar lines
- Central bus station for busses from the environs
- Parking house for bicycles
- Three parking levels for cars under main station

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Ticket for an event =
Ticket for public transport

- **Concerts**
- **Sport events**
- **Fairs**
- **Big congresses**

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Unrestricted mobility – less traffic: Aspects of city planning

- Strengthening of the city center and the district centres by ensuring access to basic supplies and services within walking distance

- Suburban hypermarkets are (nearly) only allowed to offer bulky goods (like: furniture, household appliance, …)

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Unrestricted mobility – less traffic: Aspects of city planning

- New city districts (like Rieselfeld and Vauban) are offering housing and working places to give the opportunity to minimize the distance between home and working place

► ► "The purpose of all our activities in society and in the transport sector should never be to maximize traffic but to guarantee a certain level of access, for all parts of the population." (Dr. Udo Becker, TU Dresden)

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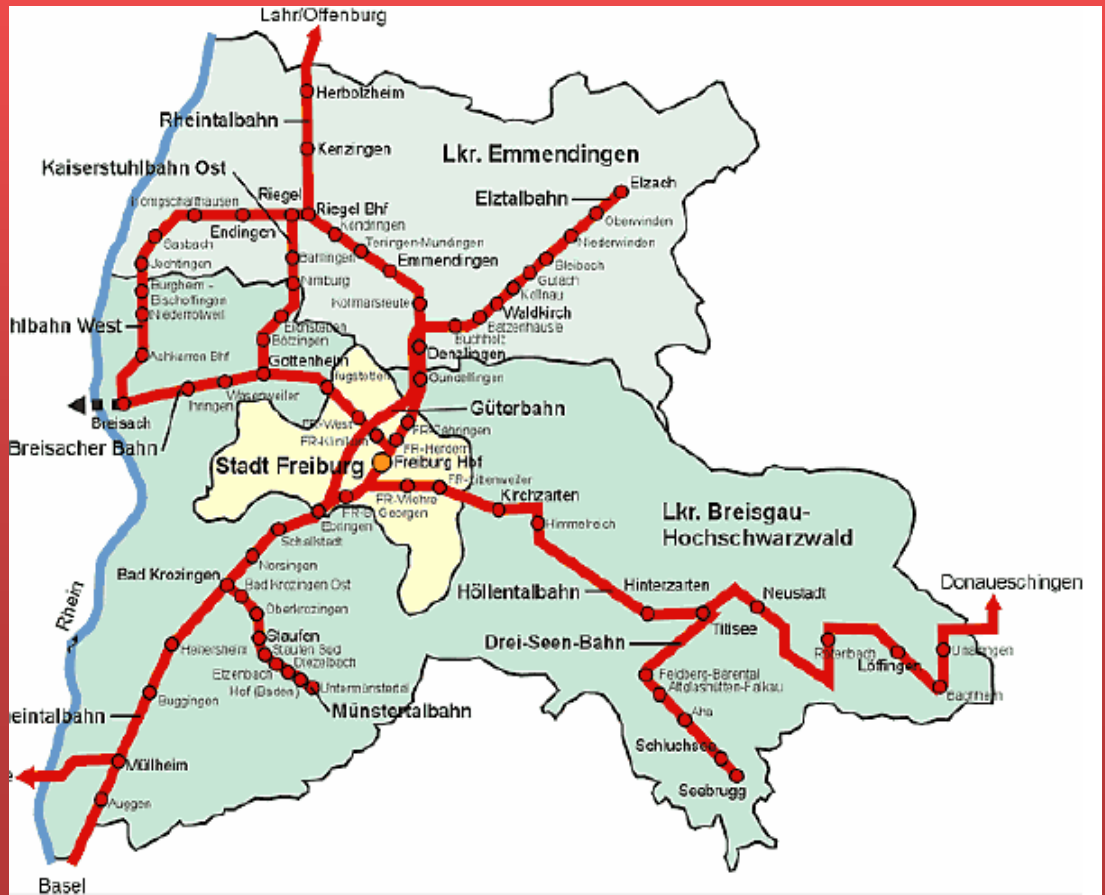
New suburban trains

- Connecting city of Freiburg and the counties
- Frequency: 30 minutes
- New organized bus lines



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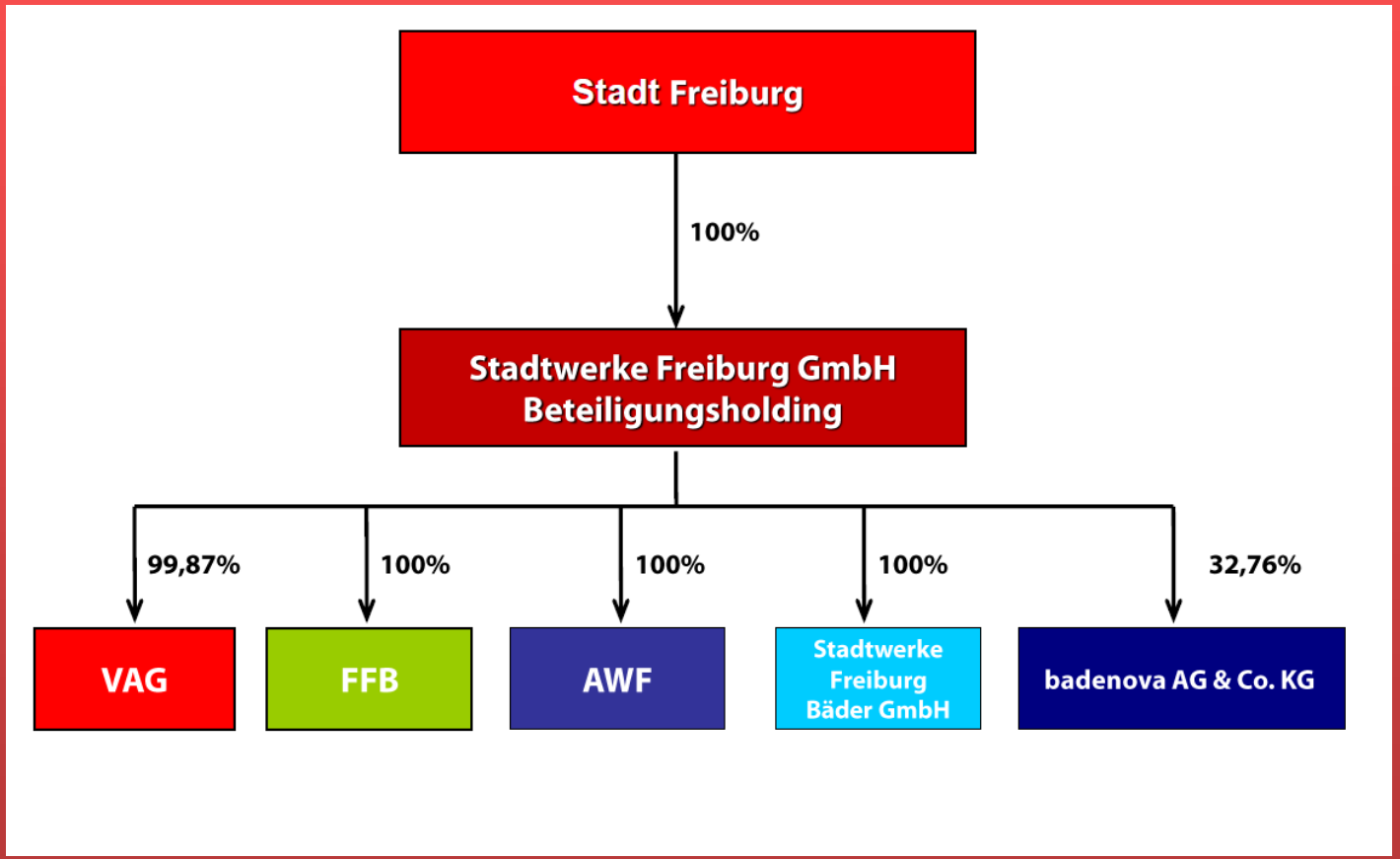
VAG = Public Transport Company

FFB = Airport Company

AWF = Wastewater Company

Bäder GmbH = Public swimming pools

badenova = Electricity, gas, water and heat provider



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