

Axel Kuehn

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## Information Leaflet

Studytour  
Mulhouse-Freiburg  
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Midttrafik

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### General introduction

The two cities Mulhouse and Freiburg will be destinations for a political study-tour of Midttrafik and the municipalities involved from October 24<sup>th</sup>-26th.

The main topic of the study-tour will be modern tramways, the proper integration of tramway / light rail corridors in the built-up environment and the linking of land-use and public transport planning but Mulhouse will also present the TramTrain feature and the combination of an urban tramway with a regional TramTrain service.

Mulhouse has to be seen as a representative of the modern French tramway.

Freiburg is internationally acknowledged as a model-case and best practice for the integrated planning of land-use and public transport or more generally a high quality mobility and demand management.

The information leaflet presented here describes the two cities and systems broadly and hints to additional web information.

### Mulhouse

#### History and geography



(source: Internet / wikipedia)

Mulhouse is a town and commune in eastern France close to Swiss and German border. With 110,000 population it is the largest town in Haut-Rhin department, and the second largest in Alsace after Strasbourg. Its designated local development area consists of 16 communes, but its conurbation is substantially larger than that (about 235000 population).

## Information Leaflet: Mulhouse-Freiburg

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### Public Transport and Regional Planning Organisation

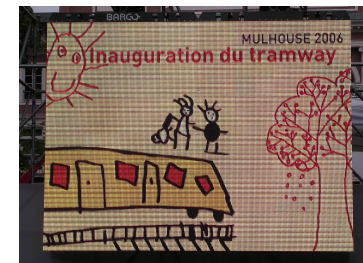
#### The players:

The municipality:	Mulhouse municipality,
The regional planning authority:	Communauté d'Agglomération de Mulhouse ( <b>CAMSA</b> ),
The regional railway authority:	---
The regional Passenger Transport Authority:	responsibilities are with Region (Alsace) and Departement (Haut Rhin),
The local PT operator:	Les Transports de l'agglomération mulhousienne ( <b>SOLEA</b> ),
The regional PT operator(s):	<b>SNCF</b> + bus operators
The local Passenger Transport Authority:	Mulhouse Agglomeration ( <b>M2A</b> ) – replacing former <b>SITRAM</b>

City and region of Mulhouse face similar institutional context in Alsace then neighbouring Strasbourg. However, the region/agglomeration is much smaller and represents one of the smallest which are “going tramway” in France.

Planning for the tramway/TramTrain-project started in 1995 and the tramway was opened May 2006 (first 12km).

19.7km tramway (not fully completed yet!) with 37 stations and 27 tram vehicles are estimated to cost roughly 350 Mio.€.



## Information Leaflet: Mulhouse-Freiburg

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Mulhouse tram impressions

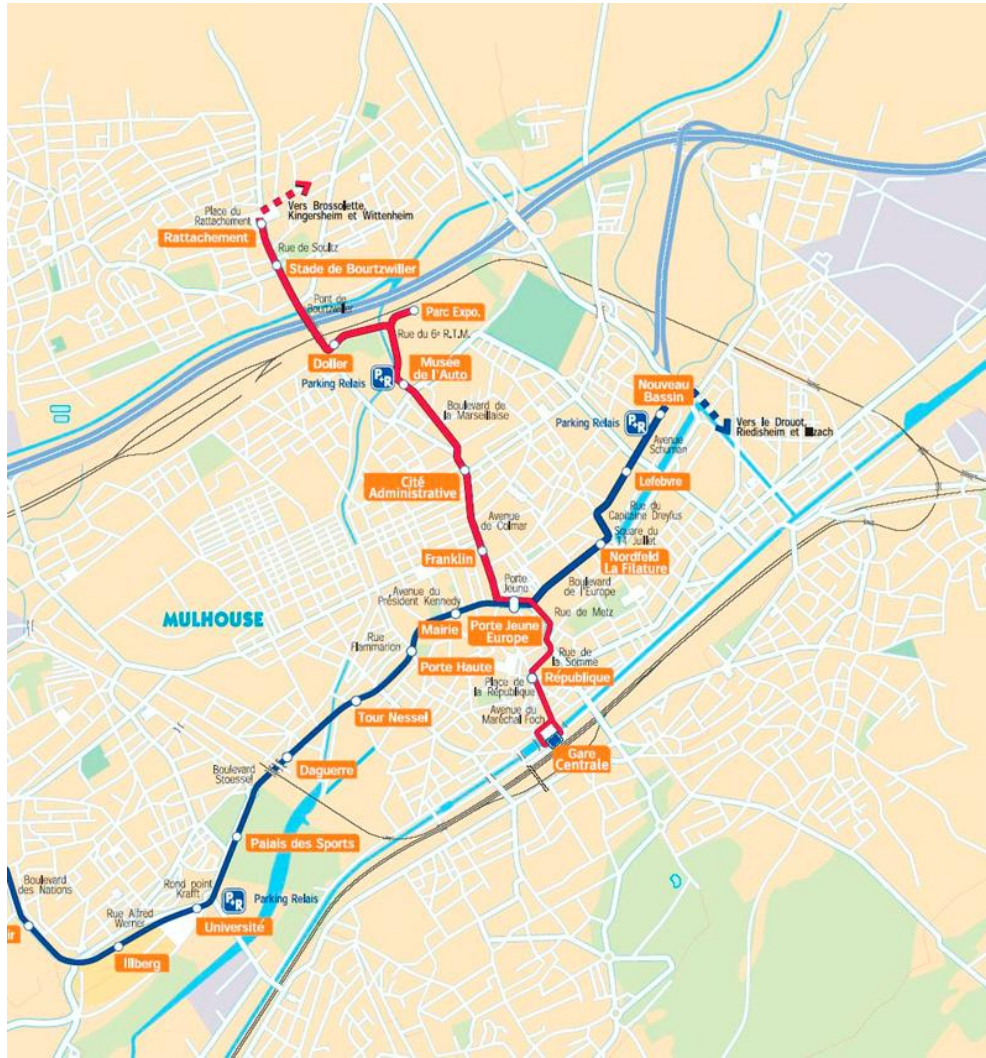
The initial tramway network consists of two lines which meet in the city centre, one of them also linking to the railway station.

Like in most French tramway cases the implementation of the tramway alignment meant heavy changes to the street network and considerable “corridor development” besides the pure tramway project.

Since 2006 further extensions for the tramway have been opened respectively are under development.



# Information Leaflet: Mulhouse-Freiburg



(source: Internet / SITRAM)

## Information Leaflet: Mulhouse-Freiburg

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### TramTrain Background

The Mulhouse TramTrain and tramway project was planned from the beginning as an integrated project which allowed achieving all required parameters in the urban section used by both trams and TramTrains.



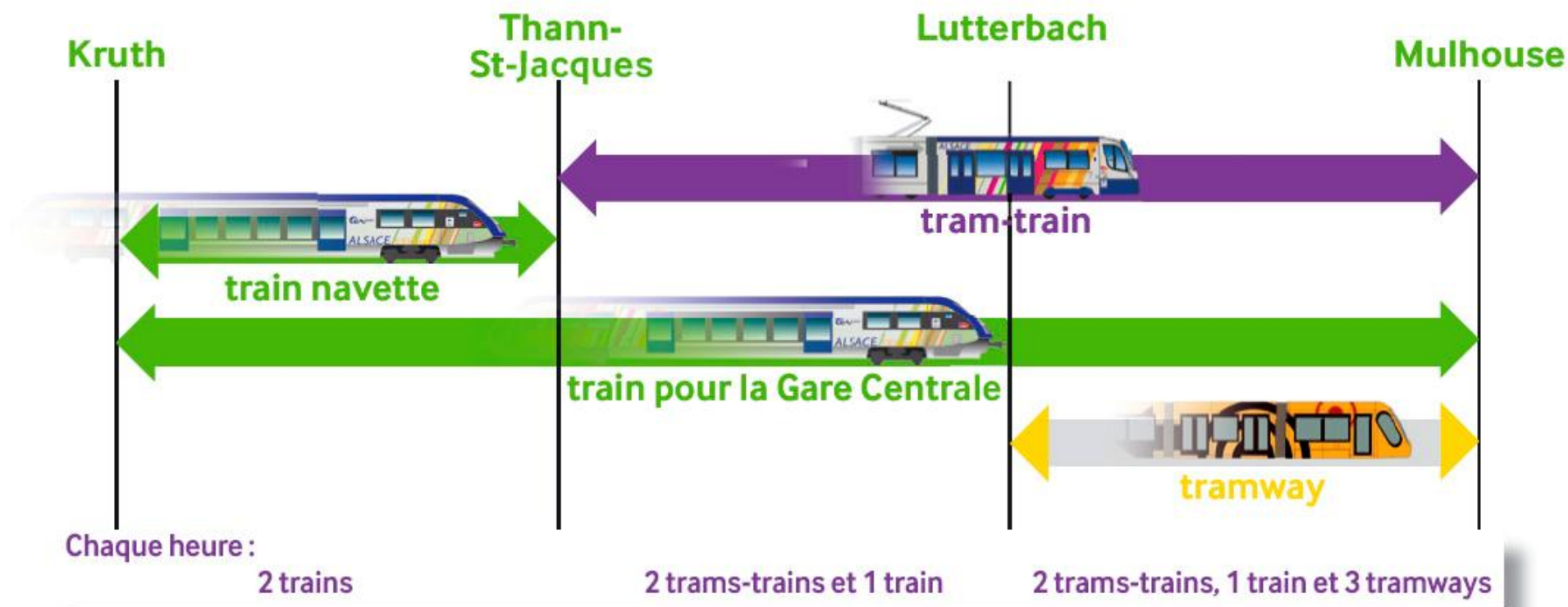
The regional railway corridor to Kruth in the Vosges mountains was un-electrified and 39km long.

As part of the project the route was to be electrified (25 kV AC) and equipped with additional stations. This means also that the project required the use of dual-mode TramTrain vehicles able to operate also in the tramway network under 750 V DC. A Dieseltram option was not discussed in Mulhouse. When project decisions were taken forward in Mulhouse the Kassel reference case was not yet in operation! However, even today all French TramTrain projects which use un-electrified railway infrastructure are going for electrification and even for rather long regional / rural sections.

Originally one was also aiming for a parallel development of both the urban and the regional component, however, one did soon recognise that the regional TramTrain-project involves much more stakeholders (especially the state railway SNCF and the state infrastructure manager RFF) and therefore increased complexity which would have delayed the urban tramway project's progress. That there is real justification for these concerns can be seen from the fact that the tramway is now operating since 2006 while the TramTrain will open in December this year and this opening just being for the first phase! Increased infrastructure and rolling stock costs compared to the initial estimations had led to a decision to stop TramTrain operation in a first phase in Thann and to operate a DMU shuttle between Thann and Kruth.

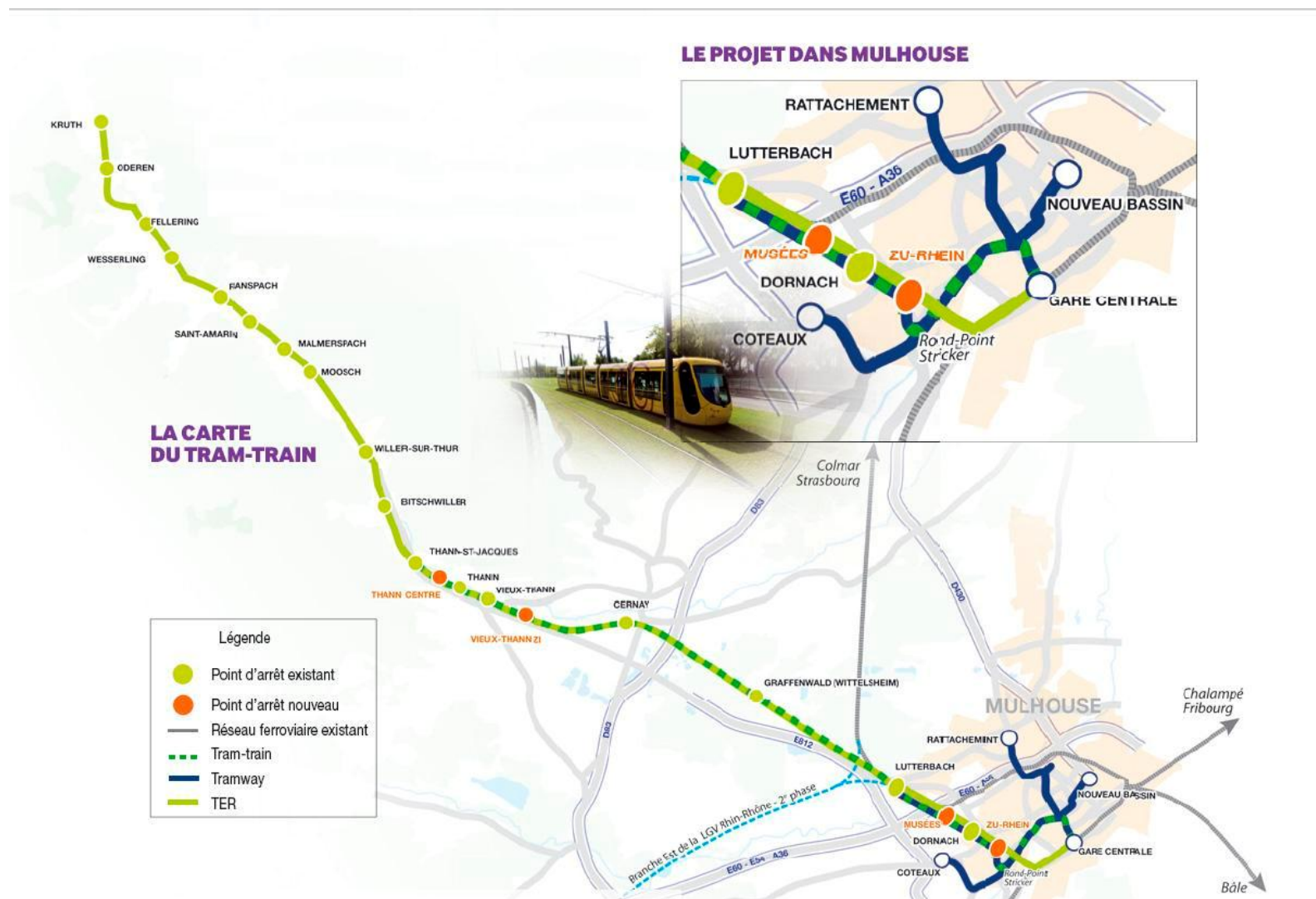


## Une offre complémentaire : trams-trains, trains, tramways



For the first time in France the scheme involves real track-sharing features as parallel to the TramTrain stopping services DMU services will be kept as an express connection to Mulhouse main station.

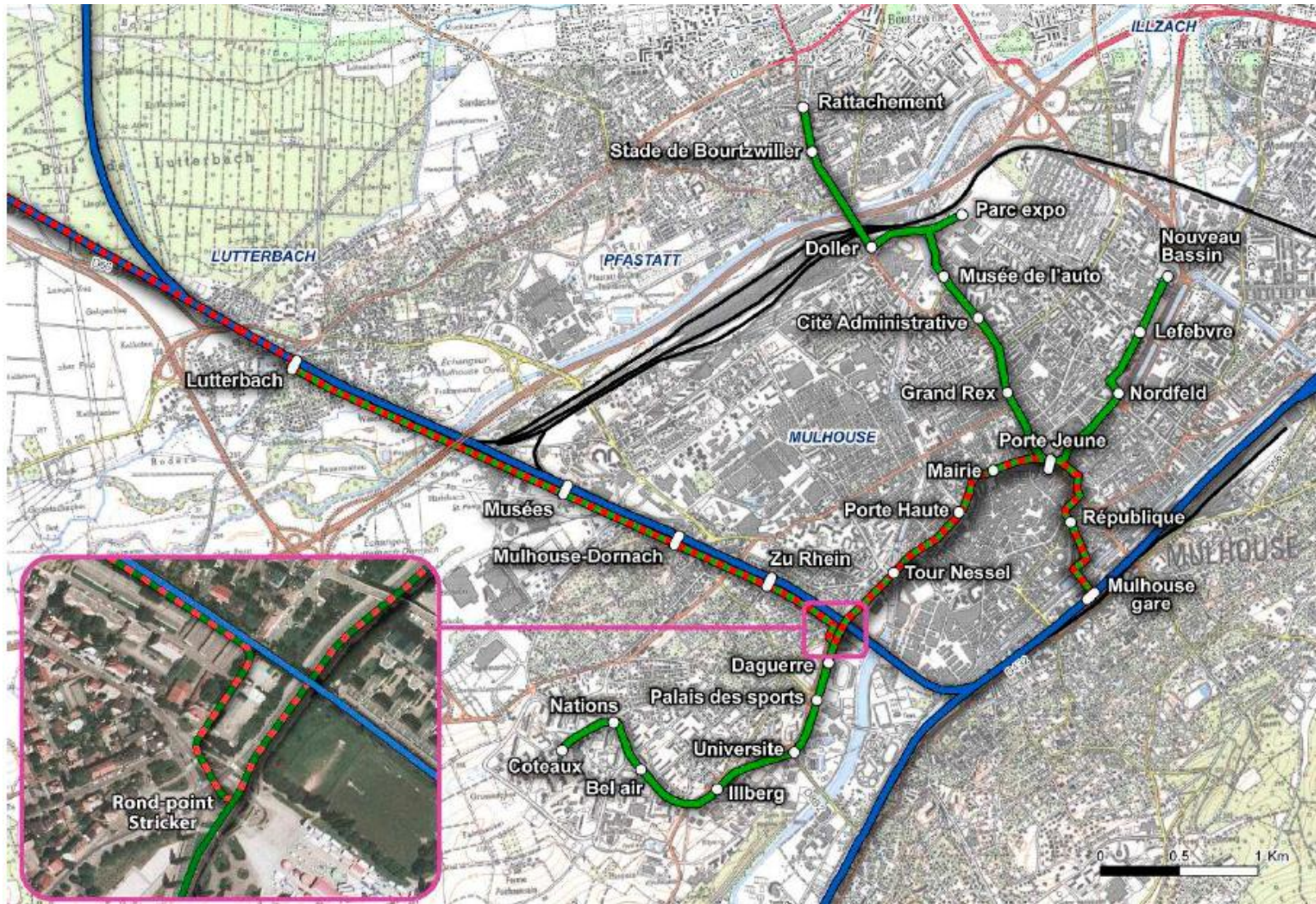
# Information Leaflet: Mulhouse-Freiburg



(Source: RFF)



# Information Leaflet: Mulhouse-Freiburg



(Source: RFF)



## Information Leaflet: Mulhouse-Freiburg

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To keep away from the mainline Mulhouse-Strasbourg, between Lutterbach and the linking point with the tramway corridor of line 2 a new parallel double track tramway infrastructure has been established.

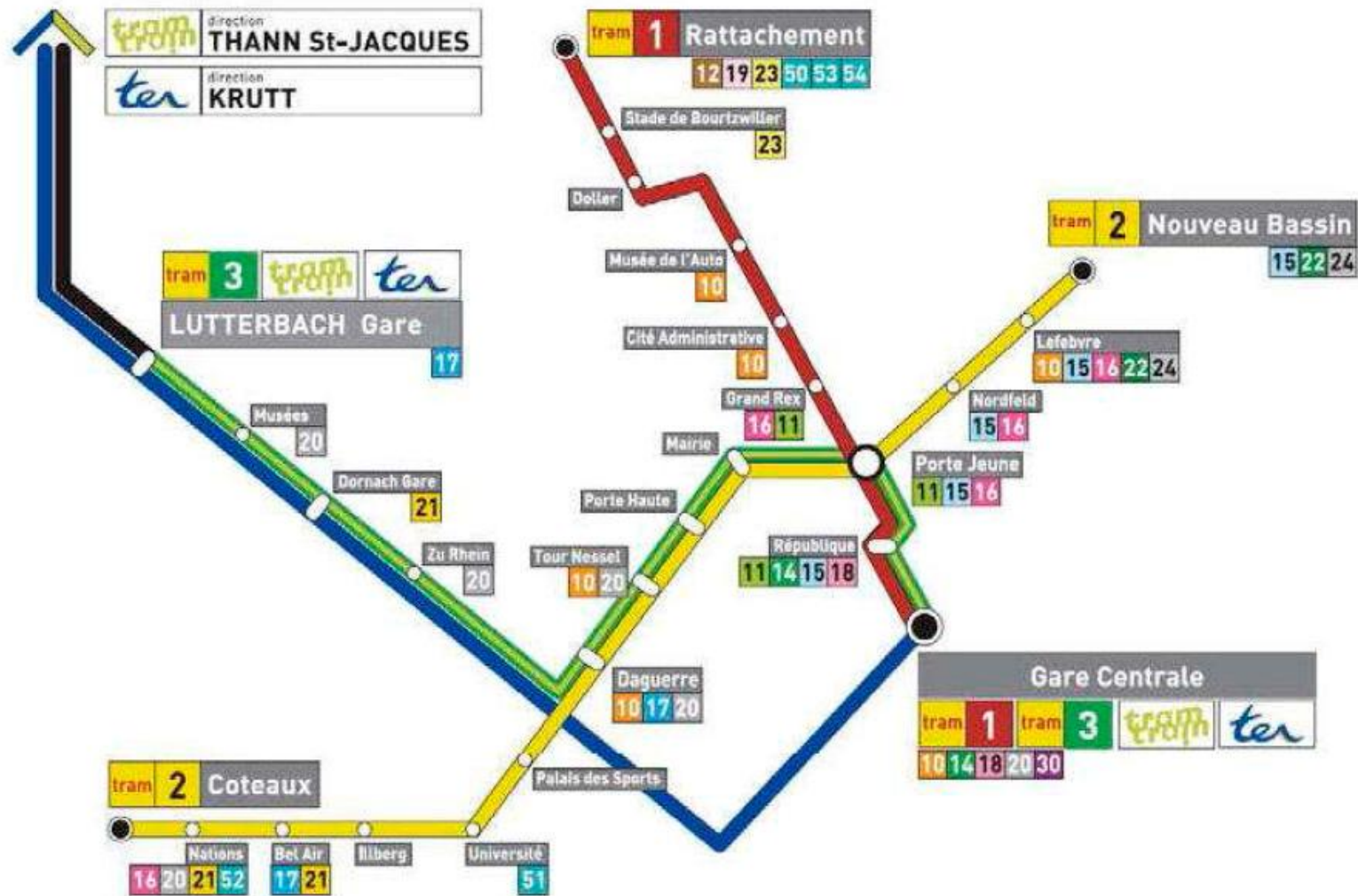


This infrastructure will be used until Lutterbach by both tramways (operated as line 3) and the regional TramTrain services.

The Mulhouse scheme uses ALSTOM CITADIS tramway vehicles for the pure urban services and SIEMENS AVANTO vehicles for the Tram-Train services.



# Tram-train de Mulhouse





### Concept's success

The tramway has been opened in May 2006 and has fulfilled the expectations regarding patronage with today about 50000 daily trips.

### Critical remarks – if any

If one looks at the railway line foreseen in Mulhouse for the TramTrain, the Thur valley railway to Thann and Kruth, it shows quite some similarities to other rural railways which are served elsewhere today with modern regional DMU railway vehicles: single track, un-electrified, running through smaller villages and towns. All the features of the regional TramTrain conversion regarding additional stops are no more dependent today on having a light rail vehicle and electric operation – one must realise that state-of-the-art heavy rail rolling stock (DMUs/EMUs) have made terrific progress in the last ten years. There is no automatism anymore that conversion to light rail or TramTrain results in the same quantum jump of quality improvement compared to the “normal” railway as it was. Costs for TramTrain rolling stock in Mulhouse have been seen some years ago as quite high – 4.4 Mio.€ per vehicle within a small series of 12 TT-vehicles. Today this represents a standard cost level and Dieseltram solutions would be even more expensive.

When the Mulhouse project decision for TramTrain was taken 15 years ago the railway world was still another one and speculation how an objective recommendation today would look like is not really helpful now. However, the more challenging task is to get in other TramTrain-project cases today into serious evaluations which also reflect better the progress in the “neighbouring” heavy rail world.

### Links

[www.cc-mulhouse.fr/index.htm](http://www.cc-mulhouse.fr/index.htm)

[www.mulhouse-alsace.fr/](http://www.mulhouse-alsace.fr/)

[www.solea.info/](http://www.solea.info/)



### Freiburg

#### History and geography

Freiburg im Breisgau is located in the extreme south-west of the country on the western edge of the Black Forest in the Upper Rhine Plain – about 20km from the French border and about 70km from Switzerland. One of the famous old German university towns, and archiepiscopal seat, Freiburg was incorporated in the early 12th century and developed into a major commercial and ecclesiastical centre of the upper Rhine region. The city is known for its ancient university and its medieval cathedral, as well as for its high standard of living and advanced environmental practices. The city is situated in the heart of a major wine-growing region and serves as the primary tourist entrepot to the scenic beauty of the Black Forest. According to meteorological statistics, the city is the sunniest and warmest in Germany.



(source: wikipedia)

Freiburg is known as an "eco-city". In recent years it has attracted solar industries and research organisations; the Greens have a stronghold here (the strongest in any major German city; up to 25% of the overall city vote, in some neighbourhoods reaching 40% or more in the 2002 national elections). The newly built neighbourhoods of Vauban and Rieselfeld were developed and built according to the idea of sustainability.



## Information Leaflet: Mulhouse-Freiburg

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The citizens of Freiburg are known in Germany for their love of cycling and recycling. The lord mayor, Dr. Dieter Salomon, (elected in 2002), is the only member of the Green Party who holds such an office in a city with more than 100,000 inhabitants.

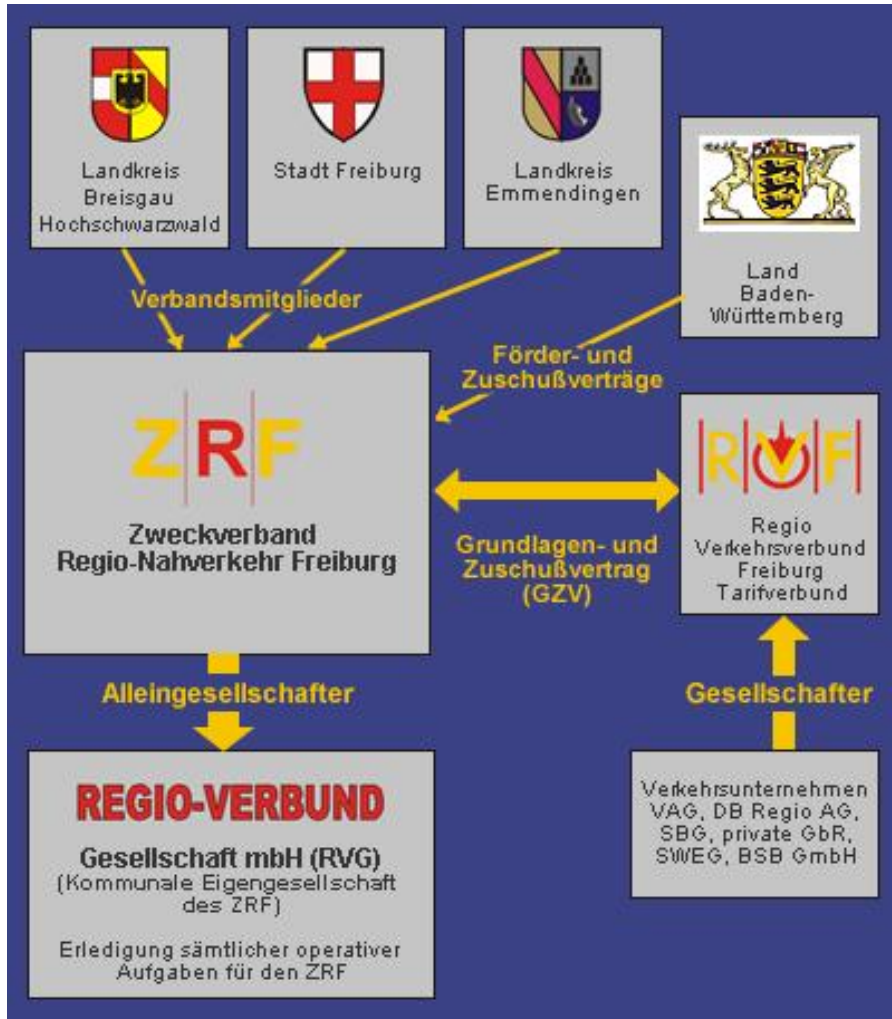
### Public Transport and Regional Planning Organisation

#### The players:

The municipality:	Freiburg municipality,
The regional planning authority:	Regionalverband Südlicher Oberrhein ( <b>RVSO</b> ),
The Passenger Transport Authority:	Zweckverband Regio-Nahverkehr Freiburg ( <b>ZRF</b> ) + Regio-Verbund GmbH (public side) Regio-Verkehrsverbund Freiburg ( <b>RVF</b> ) (operator side),
The local PT operator:	Freiburger Verkehrs-AG ( <b>VAG</b> ),
The regional PT operator(s):	DB Regio + Breisgau S-Bahn + SWEG

The Freiburg area is part of the regional planning authority “Regionalverband Südlicher Oberrhein”. Further to this there is no further regional planning unit between the RVSO and the local communities which would i.e. care for integrated land-use planning etc. This is different to some other cities/agglomerations both in Baden-Württemberg and Germany which have created rather strong planning bodies on agglomeration level (i.e. Verband Region Stuttgart, Region Hanover, Planungsverband Frankfurt-Main, Nachbarschaftsverband Karlsruhe). However, with regard to public transport, such an intermediate planning level exists, which covers the city area and the two counties which enclose Freiburg. The structure is rather specific with a political body on the public side, a purpose community, the so-called Zweckverband Regio-Nahverkehr Freiburg and its management organisation Regio-Verbund GmbH, which cares for an integrated public transport offer in the agglomeration. The ordering responsibility is limited to the urban tram and bus network and the regional bus network, while responsibility for regional railway services is with the state organisation Nahverkehrsgesellschaft Baden-Württemberg. Further to this there exists a passenger transport authority (here only “Tarifverbund”) formed by the operating companies which owns the responsibility for the fare system.

# Information Leaflet: Mulhouse-Freiburg



(source: ZRF / VRF)

## Information Leaflet: Mulhouse-Freiburg

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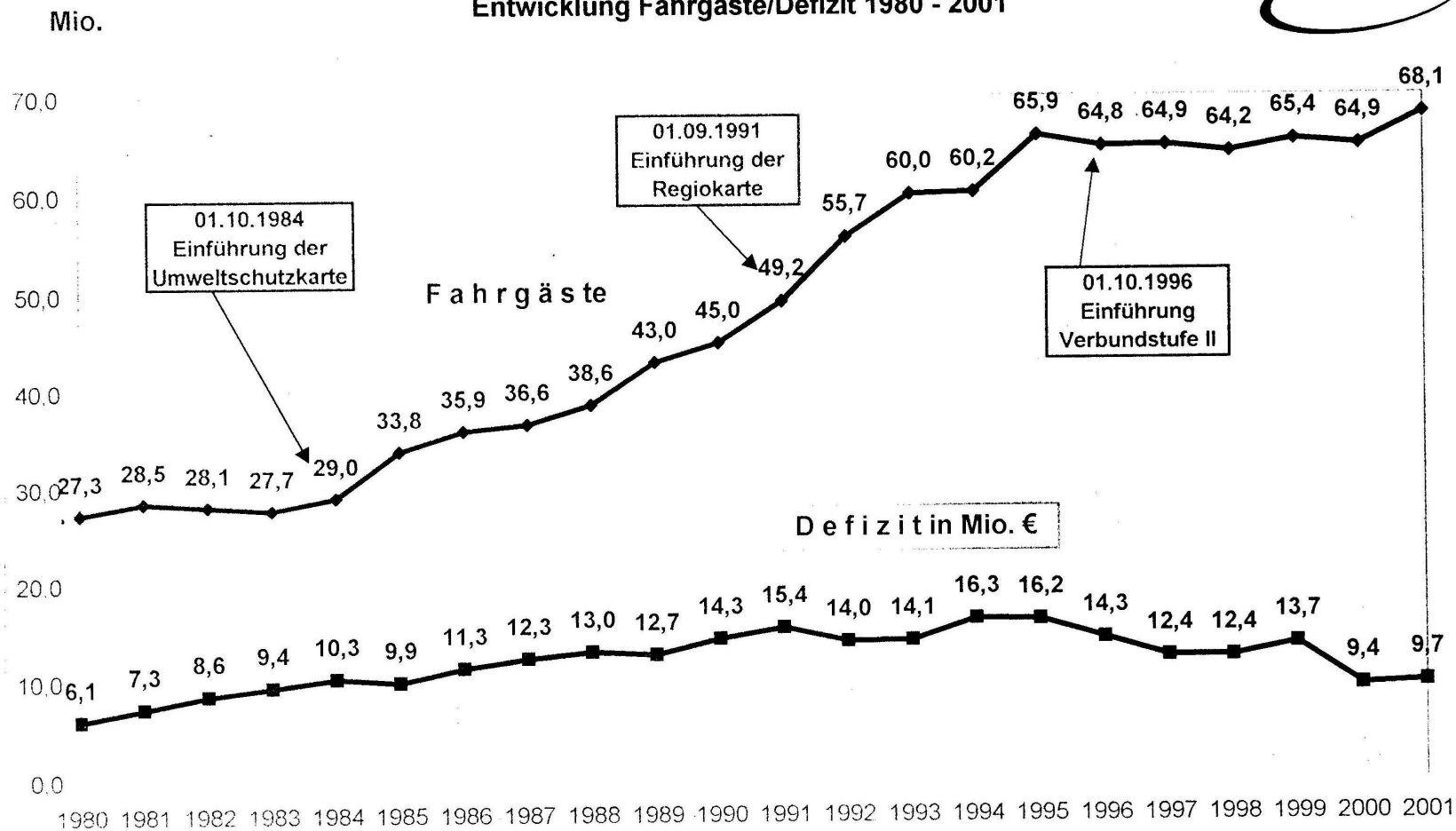
Again this structure is not really typical or comparable to many other German agglomerations, where such passenger transport authorities in quite some cases are fully public controlled and/or responsible for both organisation and fares and/or independent from the operators and in some German states also equipped with responsibility for ordering regional railway services. Baden-Württemberg shows regarding public transport organisation still some “small state attitudes”.

Despite such rather complicated structure Freiburg has managed to develop both a very successful public transport system and more generally an integrated mobility management strategy fitting to the green image of the city! Such strategy is not just based upon big infrastructure measures but also strongly on a variety of “soft measures” with supportive impact for the PT-investments.

Freiburg was the first German city in 1984 basing the fare system strongly on the so-called “Umweltkarte” (environmental ticket), a rather cheaply offered monthly ticket for the public transport network which is also transferable! All fears that such a ticket would undermine the revenues of the public transport system have not become true as the diagram on the next page illustrates: huge increases in passengers have been raised without major increases of the deficit.



**Freiburger Verkehrs AG**  
**Entwicklung Fahrgäste/Defizit 1980 - 2001**



E-bef-d.xls / Diagramm2

27.02.02 / 3VVS

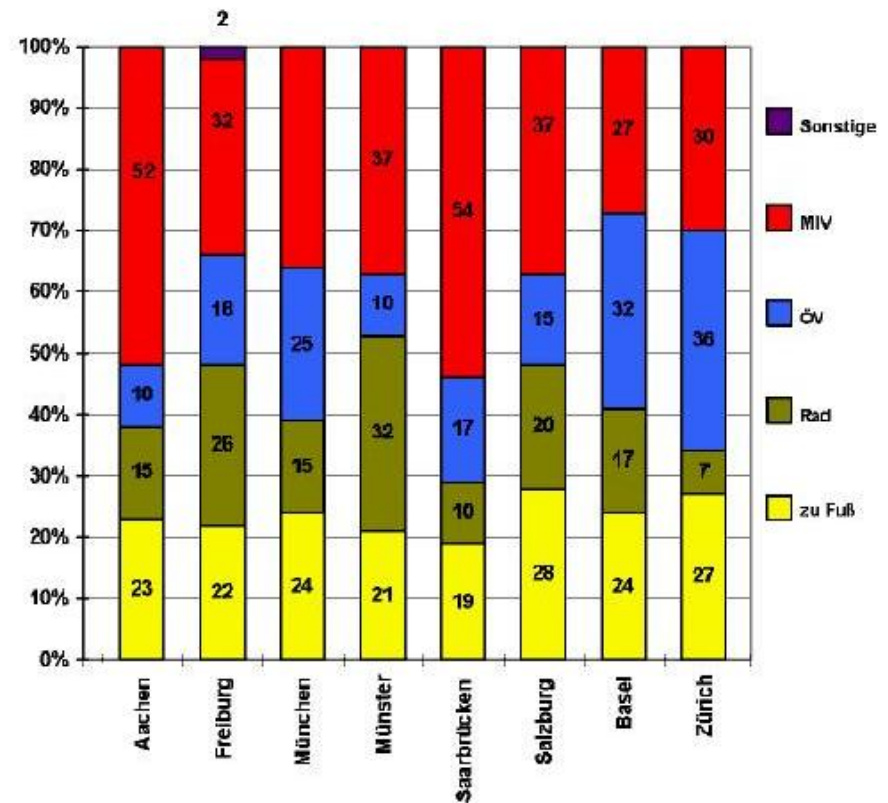
(source: VAG)



## Information Leaflet: Mulhouse-Freiburg

The comparison of the modal split situation with some German, Austrian and Swiss cities shows nicely that the big success of keeping the car share in modal split down to 30% on city level is not just a result of extremely high public transport shares but also of high walking and cycling shares!

### Modal Split im Vergleich

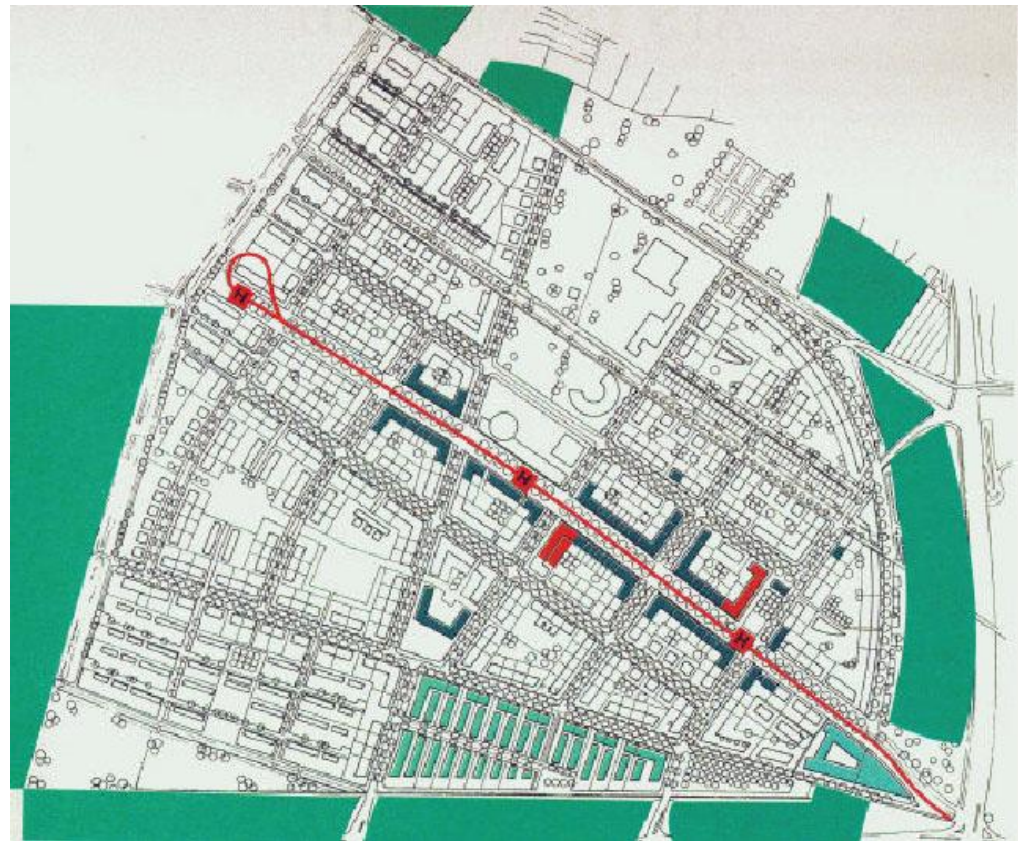


(source: Internet/adapted)

## Information Leaflet: Mulhouse-Freiburg

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When the planning process for the new Rieselfeld housing area was started in the early nineties a rather unique approach has been brought forward: the layout was based on a central tramway axe with higher densities allocated near to the PT-corridor and the tramway was established before the actual construction started to give anyone thinking about settling there 100% safety regarding the availability of a high quality PT-system available to the future residents.



(source: Internet)

## Information Leaflet: Mulhouse-Freiburg

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Rieselfeld (left) / Vauban (right)

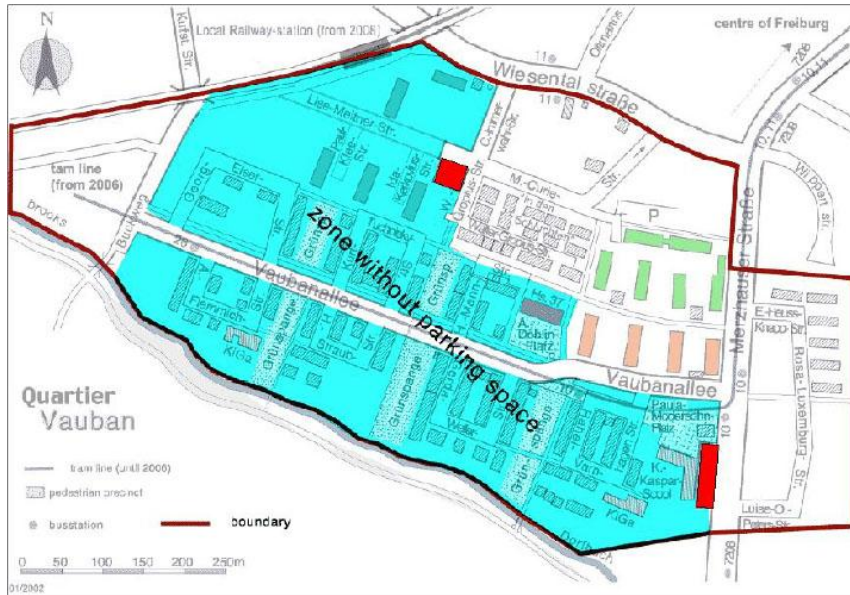
The Rieselfeld quarter is conceived for 10-12000 Einwohner in 4500 flats on 70ha, thus with about 64 flats /ha or in average 170 residents/ha! To reach those targets 3-5 storey buildings have been built. Currently live about 8000 residents in Rieselfeld.

Rieselfeld was planned with a maximum distance of 400m towards the tramway stops or max. 5-7min walking distance and thus not requiring any feeder services! 3 tramway stops on the centrally located tramway axe cover a length of 1.2km and reach about 12000 residents!

When establishing the new housing area Vauban on the site of a former French military base, planners went even further!



## Information Leaflet: Mulhouse-Freiburg



Area of Freiburg		Cars per 1.000 inhabitants
Freiburg	→	427
District Rieselfeld	→	270
All households Vauban	→	150
Vauban with car	→	240

(Source: Claudia Nobis/DLR/ECOMM 2003)

The Vauban area of 38ha, 2000 flats and about 5000 residents is considerably smaller than Rieselfeld, but shows however some special features which are linked to the Freiburg philosophy regarding mobility management. Again it is served with a new central tramway line but large parts of the area are offered as car-free areas without accessibility of the houses/flats with cars. Parking is enabled in two central parking garages. The planning approach is clearly recognisable when comparing car ownership rates in Freiburg as a whole, Rieselfeld and Vauban!

On the regional level of the ZRF Freiburg has developed kind of a low-cost S-Bahn system with DMU vehicles, the so-called Breisgau S-Bahn, which is linked to the urban PT-system but also to long-distance trains at Freiburg main station which has been developed as a very attractive interchange node.

## Information Leaflet: Mulhouse-Freiburg



### Links

[www.freiburg.de/](http://www.freiburg.de/)

[www.freiburg.de/servlet/PB/menu/1182949\\_I2/index.html](http://www.freiburg.de/servlet/PB/menu/1182949_I2/index.html) (Green City)

[www.regio-verbund.de/](http://www.regio-verbund.de/)

[www.rvf.de/](http://www.rvf.de/)

[www.vag-freiburg.de/](http://www.vag-freiburg.de/)

[www.breisgau-s-bahn.de/](http://www.breisgau-s-bahn.de/)

[www.region-suedlicher-oberrhein.de/](http://www.region-suedlicher-oberrhein.de/)