

Mobility and environment: from national policies to local adaptation strategies

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Pierre LACONTE

President, Foundation for the Urban Environment,
Former Vice-Chair EEA SC



Figure 1 – National policies

View of Chicago in the 30's, showing the street full of cars while the streetcars (trams) could no longer move, as they had no right of way even though they paid entirely for their infrastructure and its maintenance. Streetcar companies went bankrupt one after the other and public transport gradually left the realm of urban business services to enter the realm of public social services.



Figure 2 – National policies

Urban sprawl is well illustrated by this air view of a suburb near Phoenix, Arizona. Homes are exclusively reached by road.

Urban sprawl in Europe

The ignored challenge

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Figure 3 – National policies

Urban sprawl was analysed, among others, by the European Environment Agency in its 2006 Report “Urban Sprawl in Europe”.

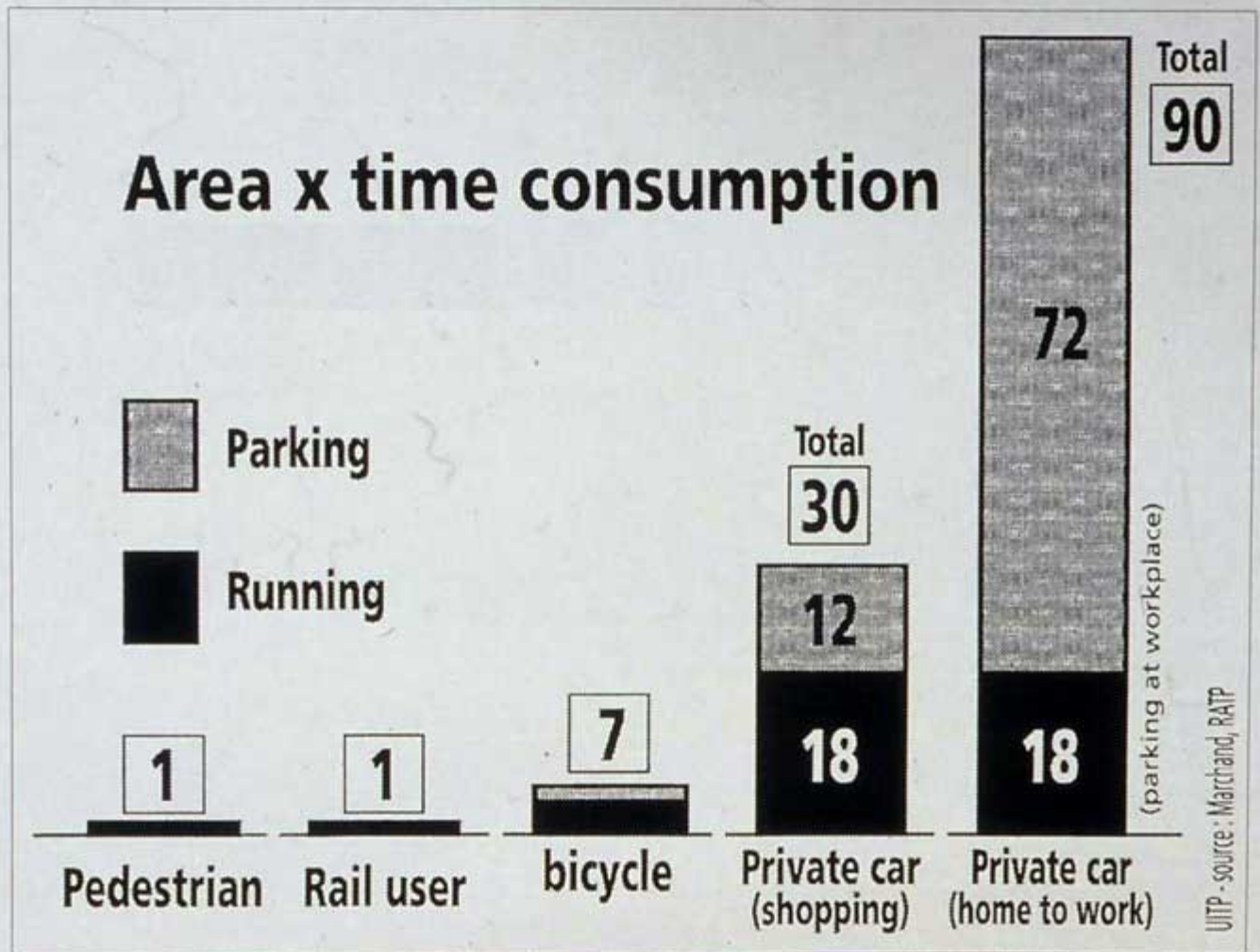
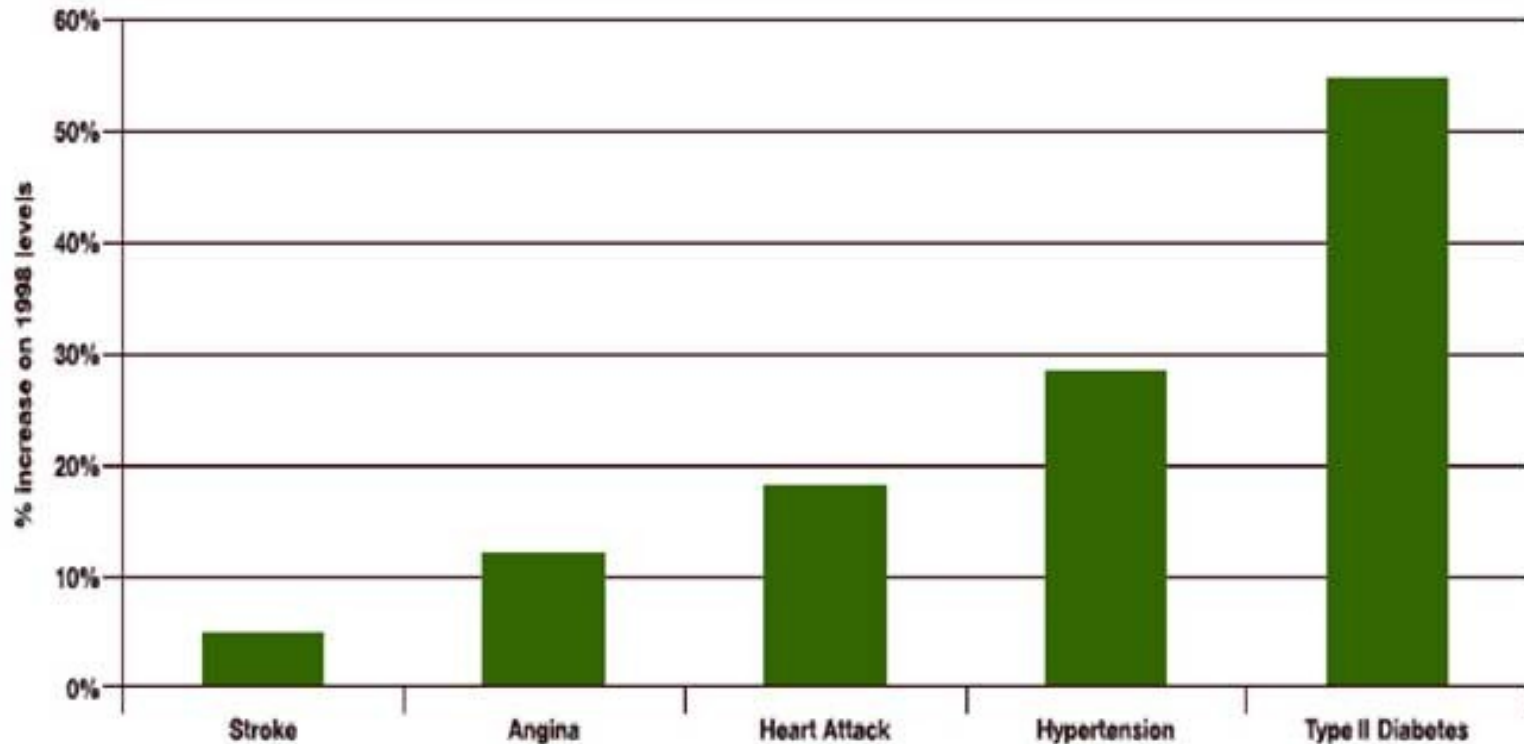


Figure 4 – Transport modes and land consumption

If one takes the land consumption by a pedestrian as the benchmark, the car takes up about 18 times more space than a pedestrian, as it moves, but it requires parking for the time it does not move, i.e. for some 90 % of its life cycle. Land consumption therefore has an area x time dimension (Source: Louis Marchand, RATP, for UITP).

A dramatic rise in diseases linked to obesity is expected by 2023



Source: taken from Department of Health, 2004a

Figure 5 – National policies and health effects

According to the UK Department of Health, the rampant increase in obesity will result in a strong increase in related diseases (Source: 2008 Conference held by the UK-Man and Biosphere Urban Forum at UCL London. Proceedings were published under the title “Statins and Greenspaces” (Gerald Dawe and Alison Millward, Eds.). See list of references.

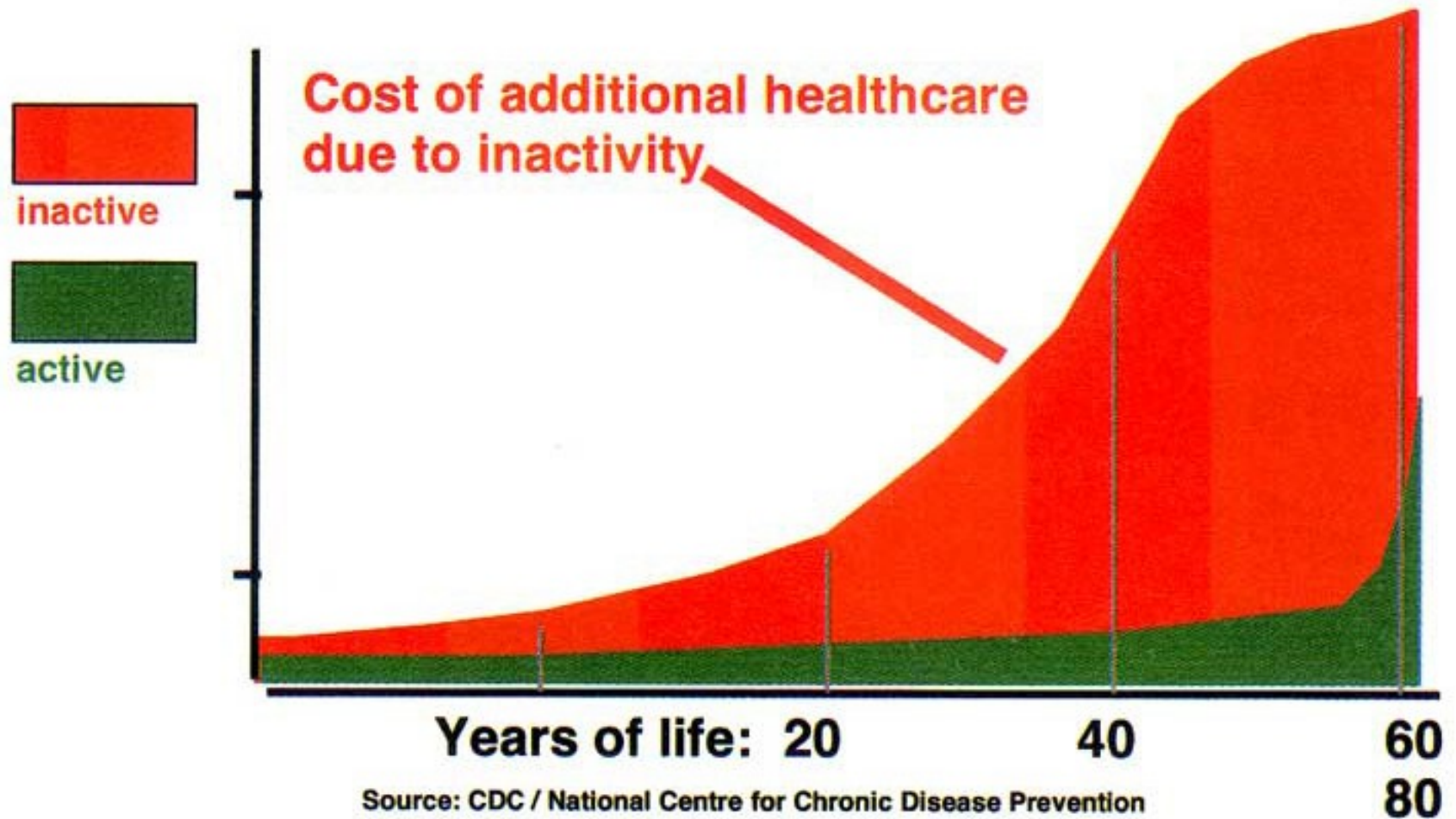


Figure 6 – National policies and health effects

This graph shows the cost of additional health care entailed by inactivity as estimated by the UK National Centre for Chronic Disease Prevention (Dawe, G., 2007). See list of references.

Figure 7 – Local adaptation - Nantes

Nantes has been a pioneer of the tramways revival since 1982, complemented today by a bicycle rental scheme. Tramways are not only a tool for sustainable mobility. They are an opportunity for enhancing the street network and creating pedestrian-friendly environments. As initiated in Karlsruhe, Germany in 1992, some tram networks are using existing railway tracks, and complementing them with new tramway routes, thus allowing seamless travel (Source: City of Nantes).





Figure 8 – Local adaptation - Bordeaux

Bordeaux opted for a light rail network instead of a metro line and connecting buses. A notable feature is the absence of catenaries (overhead and supporting poles) in the historic part of the city, for aesthetic reasons (Source: City of Bordeaux).



Figure 9 – Local adaptation - Bogota

The Bogota TransMilenio is derived from the pioneering Curitiba Bus Rapid Transit (BRT) network that started in 1976 which has proven its mass transit capacity while providing for enhanced safety and security through its staffed stations. BRT achieves very high commercial speeds, as it is given a total right-of-way and all ticketing takes place at stations. Note the possibility of express buses to pass all-stops buses. In narrower roads and urban streets, space can be saved by using guided buses (e.g. through an optical guidance system).

Photo: Transmilenio.

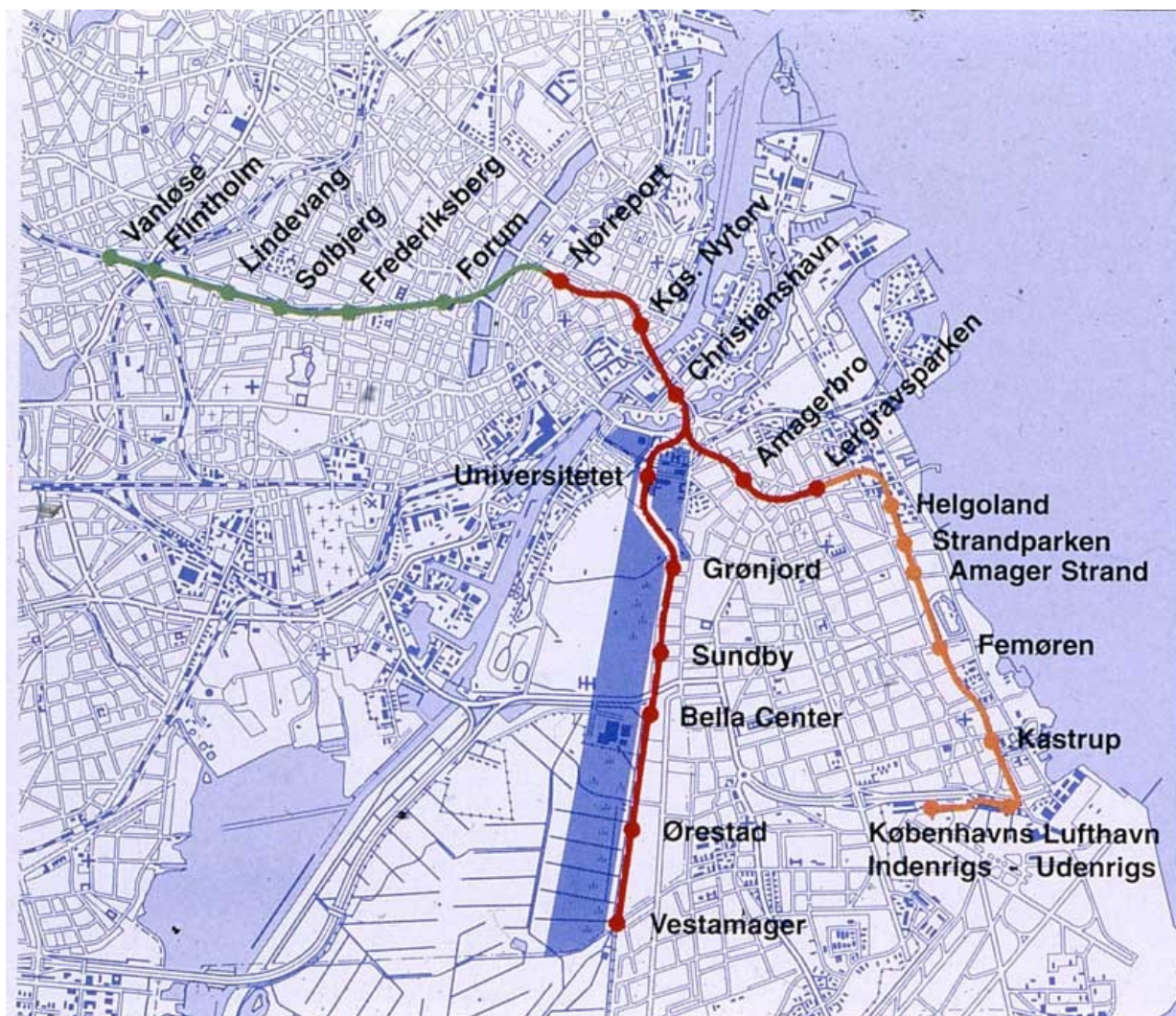


Figure 10 – Local adaptation - Copenhagen

Copenhagen’s high-density low-rise urban planning, its pedestrian streets (introduced from 1962), its bicycle network (36% of commuters use bicycles, notwithstanding the Scandinavian climate), and its expanding driverless urban metro network have enhanced liveability. The Copenhagen metro lines also reinforce the “finger-plan”, which concentrates development along public transport radial corridors. (Source: City of Copenhagen).

Figure 11 – Local adaptation - Copenhagen

In addition to the intra urban metro, the commuter line linking Copenhagen, Kastrup airport and Malmo has created an integrated, trans-border urban agglomeration (Source: City of Copenhagen).

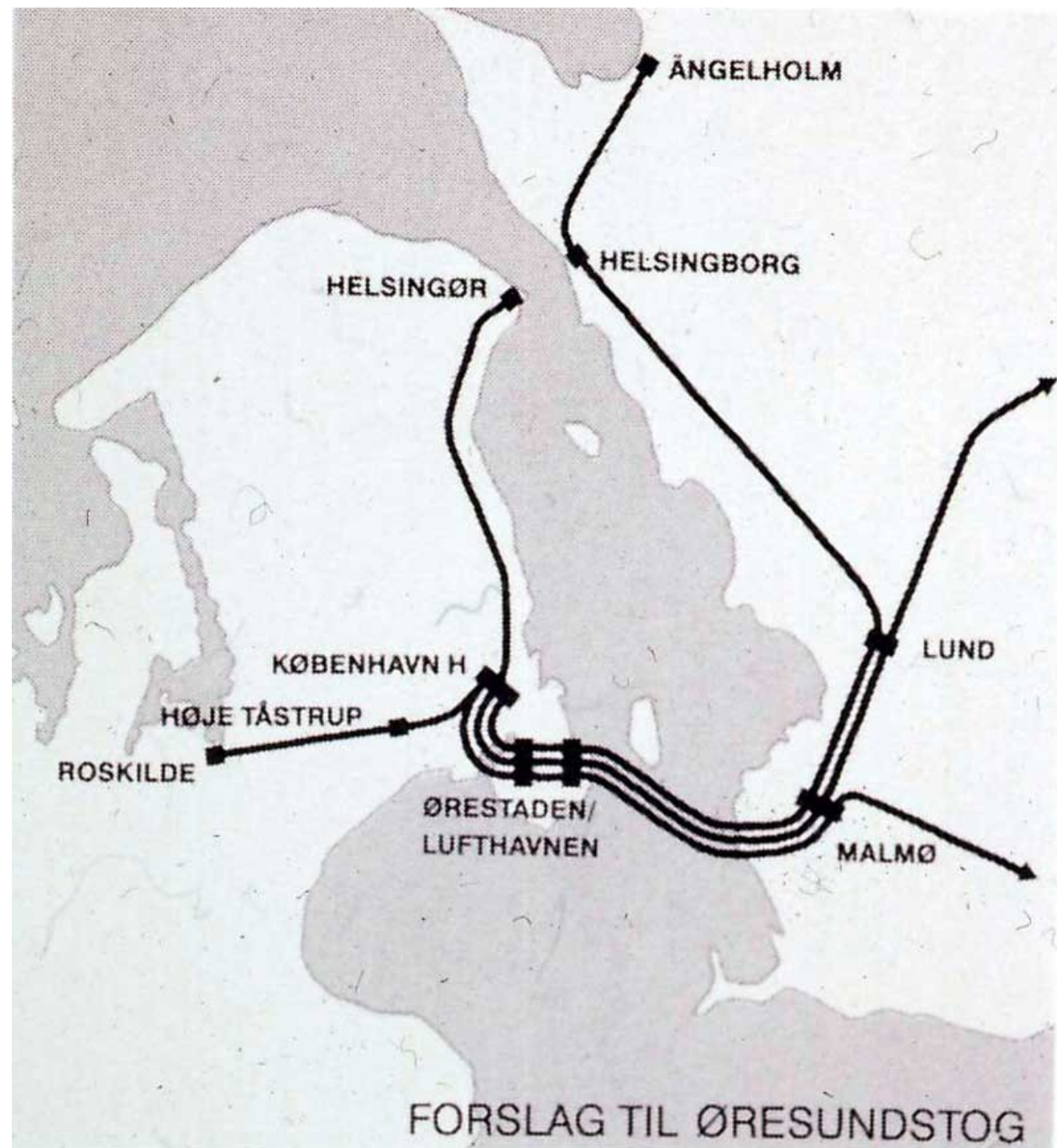




Figure 12 – Local adaptation - Singapore

Singapore Area Licensing Scheme 1975-2000.

Through its pioneering restraint of car ownership (a monthly auction of new licensing plates, with a maximum yearly increase in car ownership of 2.5 %), its congestion pricing, its network of driverless subway trains linked with pedestrian malls and its highly convenient intermodal multi-use Easylink card, Singapore is considered a best practice in sustainable transport. Its “area licensing scheme” was launched in 1975, requiring drivers entering the city to pay a fee or accept three passengers. It confirms that oblique approaches are politically the most successful, especially in a difficult context (nobody could protest against such a scheme). Photo: P. Laconte.

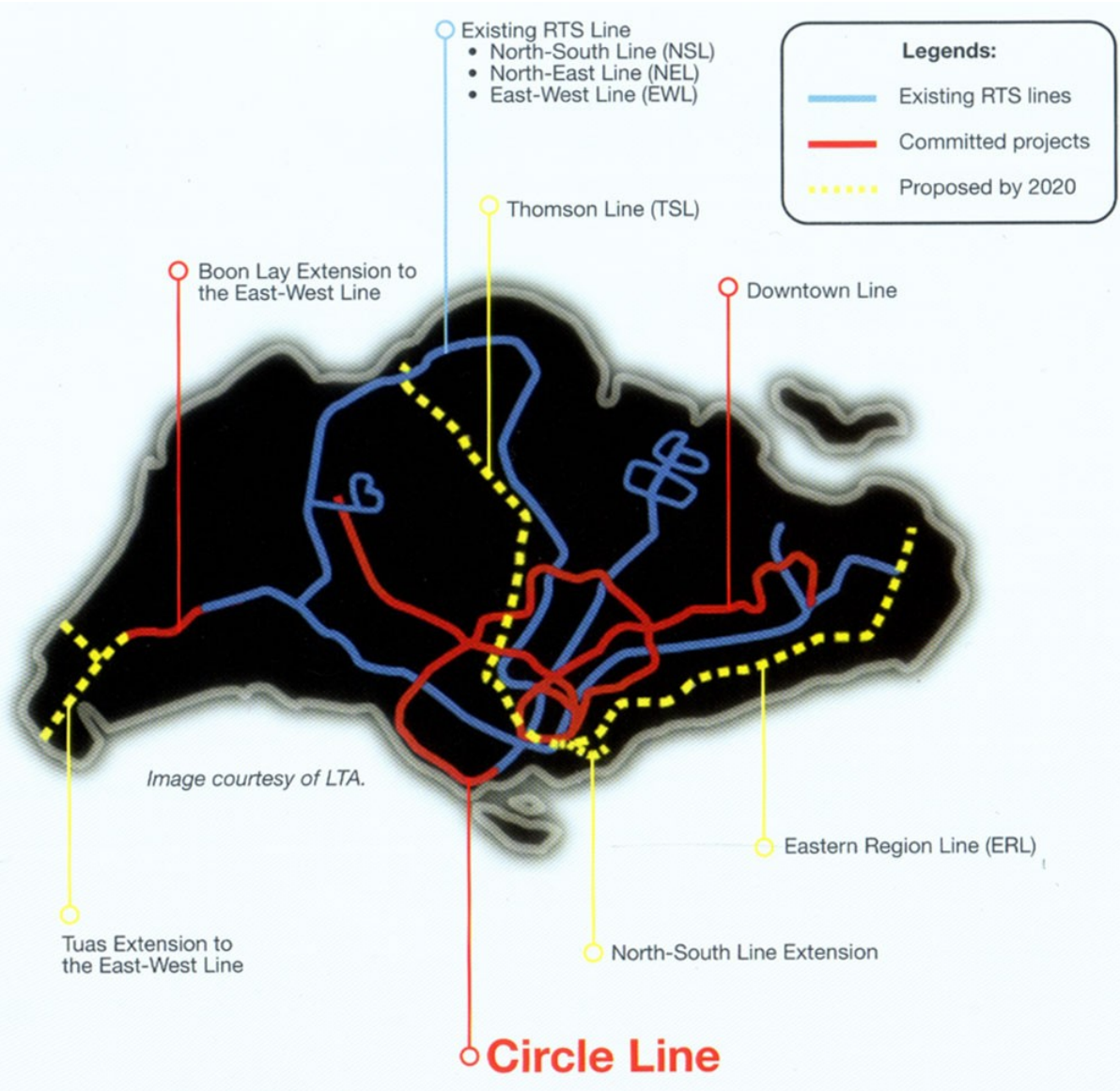


Figure 13 – Local adaptation - Singapore

In 2000 in Singapore the fee to enter the city was replaced by Electronic Road Pricing. The new system was applied to all drivers but the fee level varied according to the type of traffic congestion (the fee increases at peak times as a way to reduce congestion). This was also a signal to the user that the fee was in effect a congestion charge, not an additional tax on automobile use. Photo: P. Laconte.

Figure 14 – Local adaptation – Singapore

Singapore has been the pioneer of driverless high-capacity metro networks (starting with the North-East Line in 2003). Absence of drivers means shorter intervals between trains, higher capacity and higher safety levels. Most of the staff interface with passengers, rather than just sitting in a tunnel. This network has set the standard for future metros around the world. Nuremberg, Brussels and other cities are retrofitting existing lines to make them driverless and increase their capacity (Source: Land Transport Authority, Singapore).



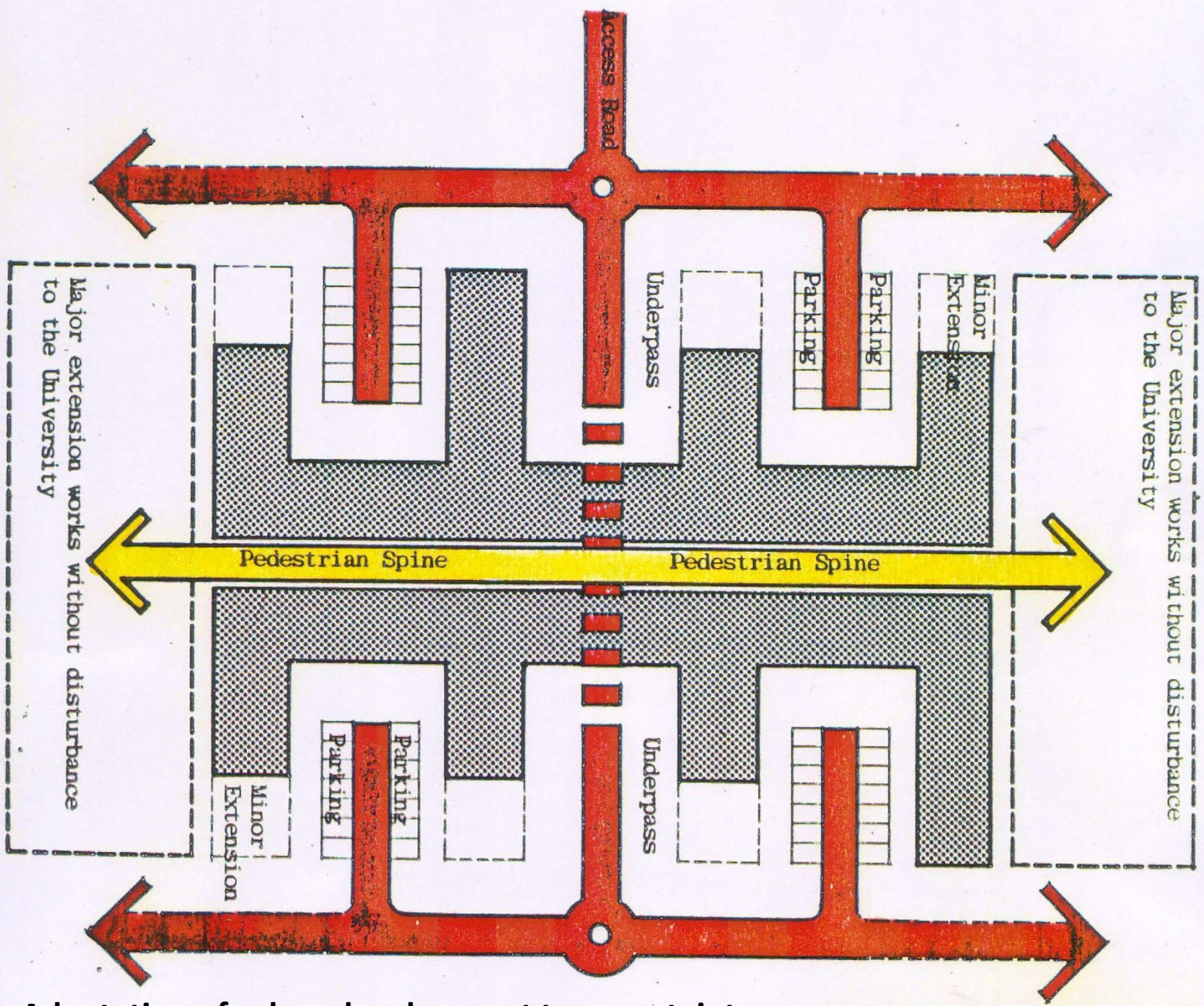


Figure 15 – Adaptation of urban development to uncertainty
 The case of Louvain-la-Neuve new university town near Brussels, Belgium.

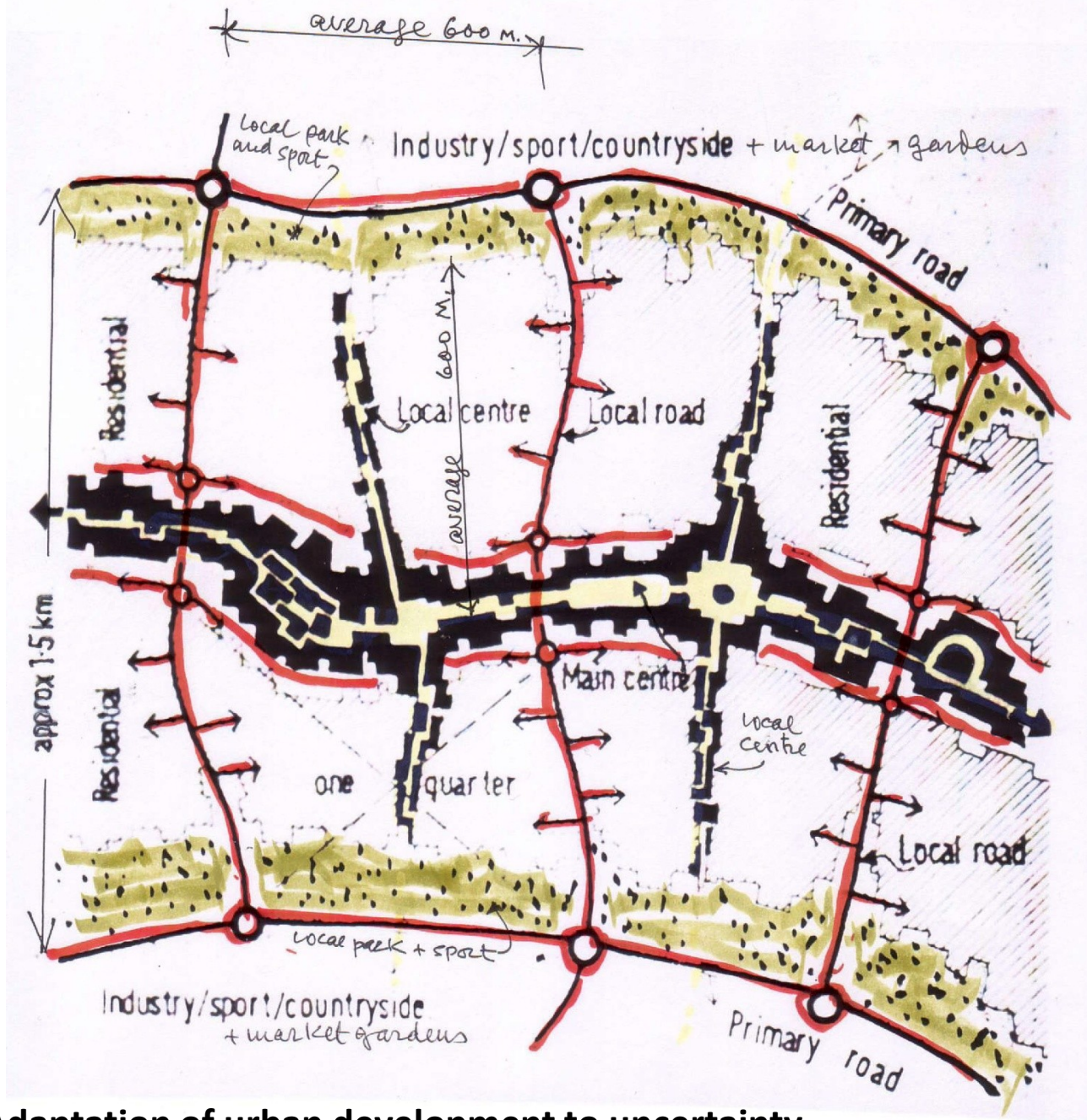


Figure 16 – Adaptation of urban development to uncertainty
 The case of Louvain-la-Neuve new university town near Brussels, Belgium.



Figure 17 – Local adaptation – Louvain-la-Neuve

View of the entrance to the railway station which is below the pedestrian street network combining university buildings, shopping and residences. Photo: P. Laconte.



Figure 18 – Local adaptation – Louvain-la-Neuve

View of one the numerous small piazzas on the pedestrian streets network. Cars are parked underneath. Photo: P. Laconte.



Figure 19 – Local adaptation – Louvain-la-Neuve

The university town of Louvain-la-Neuve (New Louvain) is centered on a new railway station and is entirely pedestrian, parking space being provided outside the town or underground. It has many ecological features and has a present day population of 40.000. All storm water is led to a reservoir landscaped as an artificial lake, with a stable water level.

Figure 20 – Local adaptation combining land-use and transport - Zurich

Excellence in public transport – the City of Zurich, Switzerland
In Zurich, trams and buses enjoy absolute priority on street.
When approaching a traffic light the sensor shown on the lower left ensures they have a green light at any time of the day. The City's modal split is around 80% in favour of public transport.
Photo: City of Zurich Police Department.



Figure 21 – Local adaptation - Zurich
 Zurich's - automobile traffic calming through traffic light cycle control: Traffic-calming is ensured by adapting the traffic lights system (a much shorter cycle favouring pedestrians, cyclists and public transport). Source: City of Zurich Police Department.

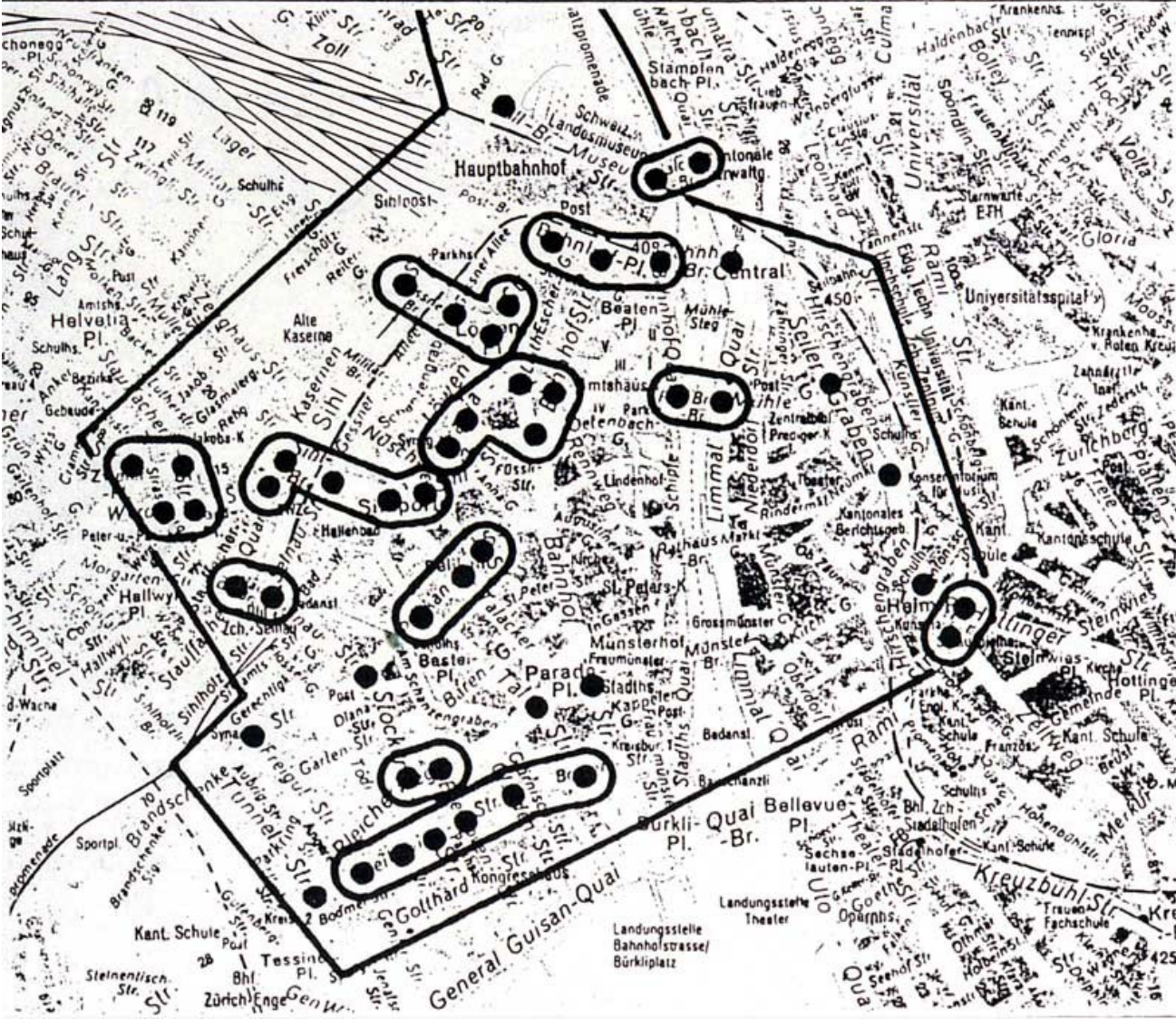


Figure 22 – Local adaptation - Zurich - Zurich parking management: Unrestricted on-street parking is exclusively reserved for Zurich-registered residents, while automobile commuters entering the city from other municipalities are subject to limits on their parking time. Conversely, rail commuters have benefited from an increased service. The parking measure has brought a return of inhabitants to the city (who are able to park), and has been politically rewarding for the city fathers, while suburban rail travel has been made easier. Source: City of Zurich Police Department.

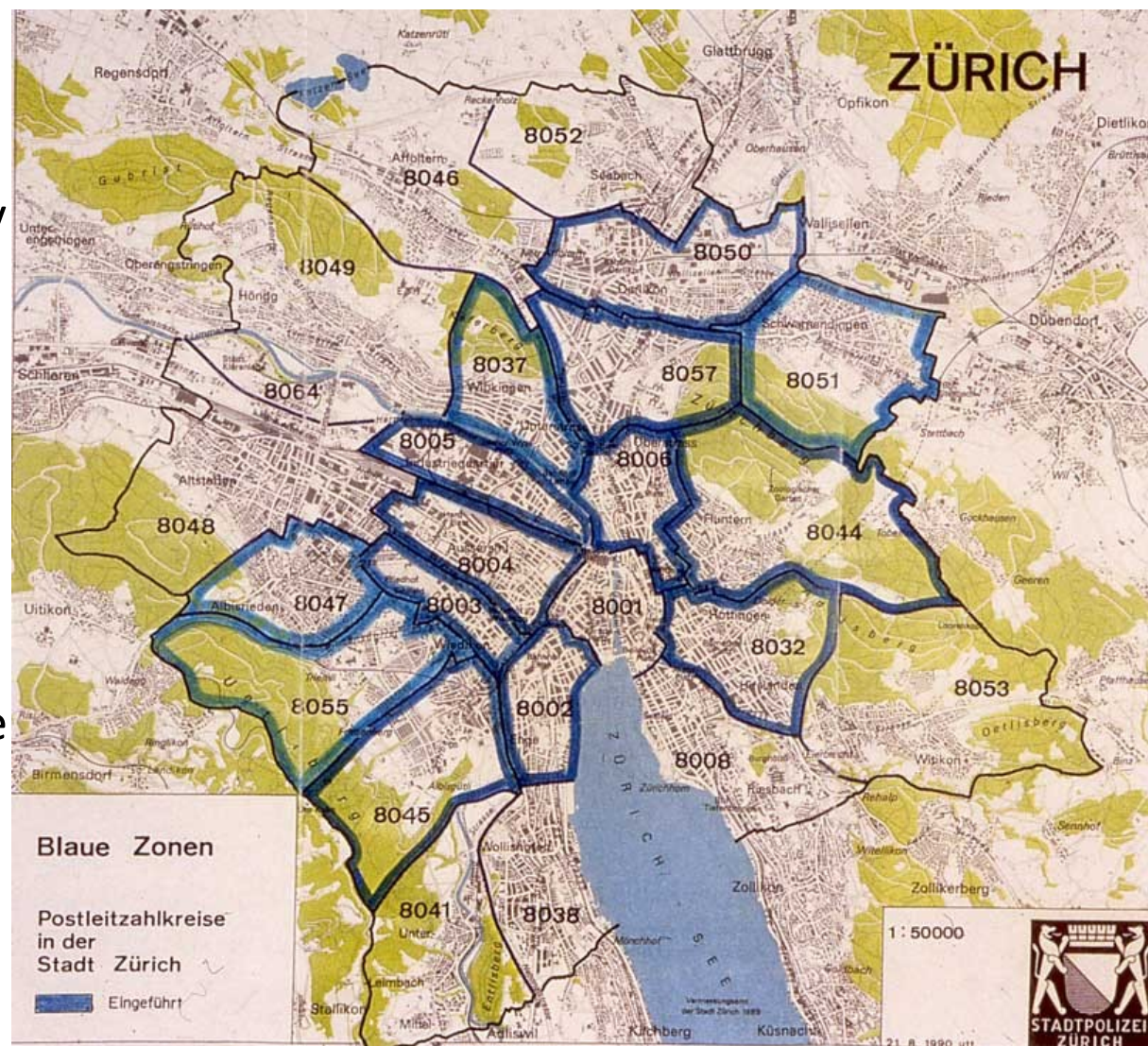


Figure 23 - Mobility and Liveable Cities
The transport network irrigating the city. Poster by Friedensreich Hundertwasser (1928-2000) for UITP (1991).



Figure 24 - Mobility and Liveable Cities

The compact city – poster by Friedensreich Hundertwasser for UITP (1993).



Figure 25 - Mobility and Liveable Cities

Enjoyment as a key to liveability – poster by Friedensreich Hundertwasser for UITP

(1995).

