COST Action 358
Pedestrian Quality Needs

Country Report Switzerland

State-of-the-art in walking policy, communication and research





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www.walkeurope.org; http://choros.epfl.ch; www.urban-mobility.ch

Content

1. Introduction

This country report provides an overview of the state-of-the-art in Switzerland. In the past years we have seen an increasing interest in the issues of walking particularly triggered by some new research, the creation of a specialised unit for walking and cycling within the federal roads administration, new ideas created in the model-city Burgdorf and the agglomeration projects which require cities and their surrounding areas to tackle traffic problems in a joint approach. All these efforts have led to a number of publications, new administrative structures and improved provisions and exemplary projects for pedestrians.

This report describes the developments and assembles the relevant information on walking in Switzerland in the past 10 to 15 years. It contains data on walking and deals with the legal framework, policy-making and best practices and innovations, e.g. in terms of strategies, communication, pilot-schemes and evaluation. In addition, all relevant publications and research projects of the past ten years have been listed and annotated, providing for the first time an overview of the research performed in the field. This collection, together with the other parts of the country report, will allow researchers and interested persons to get a quick overview of current practices and available information. It will also serve as a monitoring instrument in the longer term allowing comparisons in the future with the state of today.

The report follows the format agreed upon within the COST action for all country reports. Each chapter contains specific data and information providing a kind of reference book supplemented by some personal assessments by the research team. The information was collected to the best of the knowledge of the research team but it is possible that some information was overlooked or can't be given in the detail desirable. Those persons who would like to get a quick general impression of the Swiss situation should consult chapter 7 on the "general atmosphere" directly.

This is the updated final version of the report being published in autumn 2010. It replaces the first draft released two years earlier.

2. Facts and figures: data on walking

2.1 Introduction

This chapter gives a brief overview of the most relevant data on walking in Switzerland, providing an impression of the situation and of the developments. Since there is a separate questionnaire and paper dealing with the availability and methodology of data collection (definitions, data quality etc), these issues are not discussed here. The questionnaire information is available as PQN report B4 and as separate annex in the CD-ROM.

In this country report only those dimensions are presented where data is available on the national level and were it has a certain reliability and validity. Only in some parts included are results of single research projects and other sources (e.g. data from specialised associations). Most data refers to the year 2005 and is taken from official statistics. Some own calculations were added, particularly in the field of transport data. The chapter is divided up into six parts:

- Land use and transport infrastructure
- Demography
- Disabilities, personal health assessment, physical activity and body weight
- Transport and travel data
- Road danger (safety) and single pedestrian accidents
- Accessibility of services (macro level)

The Swiss Federal Roads Office has defined a concept to improve the collection of data on walking and cycling (Infras 2005, see publications in chapter 3). It will be implemented step by step allowing more comprehensive and qualitative better data on walking.

2.2 Land-use and transport infrastructure

Land-use

Mountains, lakes and forests take up a substantial part of the Swiss territory. A little more than a third is cultivated land (farming including mountain farming) and about 7% of the territory is used for settlements. These settlements and urban areas have expanded by roughly 13% since the early 1980s, mainly at the expense of agricultural land. This means that, every second, just under one square metre of farming land was developed. Built-up land accounts for half the settled area, and transport infrastructure for one third (the rest consists of industrial sites, parks and recreational areas, landfills, etc.). Woods/forests have also expanded, mainly in fringe areas (brushwood encroaching on isolated alpine pastures). (Source: SFSO, Swiss Federal Statistical Office: Statistical Data on Switzerland 2007, summary booklet)

Figure 1: Land use in Switzerland (based on land use statistics 1992-1997)

	km2	%
Forest, woods	12,716	30.8
Cultivated land	9,873	23.9
Mountain farming	5,378	13.0
Settlements	2,791	6.8
Rivers/lakes	1,740	4.2
other unproductive areas	8,787	21.3
Total area	41,285	100.0

Source: Statistical Data on Switzerland 2007 (summary booklet), Swiss Federal Statistical Office (SFSO)

Transportation infrastructure: roads and footpaths

Figure 2: Transportation networks in km

Network in km	***1970***	***1980***	***1990***	***2000***	***2005***
Rail	4,991	4,982	5,030	5,062	...
Road	60,139	66,545	70,970	71,132	71,296
of which national highways	651	1,170	1,495	1,638	1,756
Footpaths	…	…	…	…	…

Source: Statistical Data on Switzerland 2007 (summary booklet), Swiss Federal Statistical Office (SFSO)

The different lengths of the transport networks can be seen in the table above. There are no figures available on the length of footpaths. This is due to the fact that walking provisions have not been given much attention so far, but also due to the federalist system in which information on footpaths is only available on the local level. And last but not least it is difficult to determine how the length of footpaths should be measured. Is it all surfaces which can be used by pedestrians? This would mean all single footpaths and most roads (except for highways). If so, do sidewalks count double if there are on both sides of a street? How do we count hiking trails and non-official paths and trails (short cuts) in urban and rural areas? And what about the fact that the number of destinations and origins for pedestrians is theoretically infinite, meaning the footpath network would be infinite too? What about the fact that walking often is not linear but happens over a whole area (e.g. in pedestrian zones, parks etc.)? Would it be smarter to use km^2 instead of just km? And what about the quality of the network? All these issues will have to be addressed during the discussions on harmonising measurements of walking.

There is also no data available on the number and length of streets in speed 30 kph zones, in so called encounter zones (20 kph, pedestrian priority => home zones) or in pedestrianised areas (see also chapter 6).

2.3 Demography

Switzerland has a population of about 7.5 million. 80% of them are Swiss citizens, the rest have passports from other countries[1]. In the last 30 years the population grew by more than one million people or 18%.

Figure 3: Population of Switzerland: developments since 1970 according to sex and citizenship

In Thousands	Men	Women	Swiss citizens	Citizens of other countries	Total
1970	3 025.3	3 167.7	5 191.2	1 001.9	6 193.1
1975	3 079.8	3 241.2	5 288.4	1 032.6	6 321.0
1980	3 082.0	3 253.3	5 421.7	913.5	6 335.2
1985	3 160.4	3 324.5	5 524.2	960.7	6 484.8
1990	3 298.3	3 452.4	5 623.6	1 127.1	6 750.7
1995	3 448.8	3 613.5	5 698.8	1 363.6	7 062.4
2000	3 523.2	3 682.9	5 783.8	1 422.3	7 206.1
2005	3 652.5	3 806.6	5 917.2	1 541.9	7 459.1
In Percent	Men	Women	Swiss citizens	Citizens of other countries	Total
1970	48.9%	51.1%	83.8%	16.2%	100%
1975	48.7%	51.3%	83.7%	16.3%	100%
1980	48.6%	51.4%	85.6%	14.4%	100%
1985	48.7%	51.3%	85.2%	14.8%	100%
1990	48.9%	51.1%	83.3%	16.7%	100%
1995	48.8%	51.2%	80.7%	19.3%	100%
2000	48.9%	51.1%	80.3%	19.7%	100%
2005	49.0%	51.0%	79.3%	20.7%	100%

Source: Statistik des jährlichen Bevölkerungsstandes, BFS 2006a

The age structure is developing as in most other European countries: There are now many more elderly people than 50 years ago. The number of over 64-year-olds has more than doubled since 1950, while the number of 80+ year-olds has even quadrupled. In contrast, the number of under twenties has increased much less and has actually declined since the early Seventies. This aging process is the result of longer life expectancy and fewer births. According to recent population scenarios, this trend will continue over the next few decades. By 2030 it is expected that about one quarter of the population will be over 65 years old (in 2005 this share was at 16%). (Source: SFSO 2007)

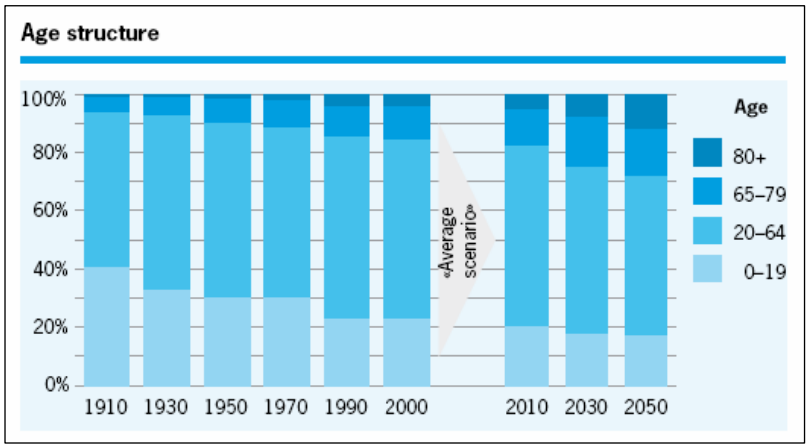


Figure 4: Age structure of Swiss population since 1910 and scenarios until 2050

Source: Statistical Data on Switzerland 2007 (summary booklet), SFSO

[1] This proportion is partly due to the restrictive naturalization policies. It is more difficult than in some other European countries to obtain Swiss citizenship.

2.4 Disabilities, personal health, physical activity and body weight

Disabilities

In 2007 about 100'000 people, 1.2% of the population of 15 years and older, were severely visually impaired, 1.3% had a hearing disability and 1.6% had difficulty to speak. Almost 3% of the population had severe difficulties to walk. In terms of doing their daily activities, 3.4% were not able to independently complete Activities of Daily Living (ADL) such as getting up, getting washed and dressed and 14.1% had impediments with Instrumental Activities of Daily Living (IADL) such as cooking or phoning[2]. However, not all people that mentioned a disability also perceived it as such: 12.2% of the population felt themselves to be disabled in their daily lives. Among elderly people the share of disabilities is, obviously, higher. In total 250'000 persons (3.2% of the population) received a disability pension in 2009. Of them, almost three quarters have a disability of 70 to 100%.

Figure 5: % of persons with difficulties in their daily lives: Swiss population 15 years and older, 2007

ADL: Activities of Daily Living (getting up, washing, going to toilette)	IADL: Instrumental Activities of Daily Living (cooking, phoning etc.)	Felt / perceived disability
3.4%	14.1%	12.2%

Source: BFS 2009 based on Schweiz. Gesundheitsbefragung 2007

A different national survey shows for the year 2005 that a similar proportion, about 2% of the population of 6 years and older is severely restricted in their daily mobility on foot due to physical disabilities. Again, the proportion is higher among elderly people with 7%. It needs to be taken into account that the number may be underestimated since persons in homes and hospitals were not included in this survey[3].

Figure 6: Proportion of population being severely restricted in their daily mobility on foot due to physical disabilities

	200 metres or more	Can walk but no more than 200 metres	Can not walk at all	Gesamt	N
6-20 years old	99.8%	0.1%	0.1%	100%	5,575
21-64 years old	98.9%	0.9%	0.2%	100%	20,990
65 years and older	93.0%	6.3%	0.7%	100%	6,815
Total	98.1%	1.7%	0.2%	100%	33,380

Source: own calculation based on Mikrozensus Verkehrsverhalten 2005, BFS/ARE 2007

All these figures focus on persons with severe disabilities. Not mentioned here are people with temporary illnesses and disabilities (e.g. persons with a broken leg walking on crutches) and people with temporary and limited restrictions of their mobility (e.g. persons pushing a stroller, heavy suitcase etc.). It can be assumed that hundreds of thousands of people are affected in this way in addition to the persons with more permanent and severe disabilities.

Personal assessment of health

"In 2002, 88% of men and 84% of women described their health as good or very good and only 3% of men and 4% of women qualified it as bad or very bad. However, temporary physical and mental problems often seem to have a negative effect on work and everyday life". (Source: Statistical Data on Switzerland 2007, SFSO, p.26). This rate did not change 5 years later when 86.8% of the population over 15 years said they felt good or very good (health survey 2007).

2 ADL and IADL comprise different types of disabilities that include physical, mental and psychological impairments. Only people living in private households were included but not those living in homes for the aged, nursing homes or in hospitals.

3 It is estimated that around 30,000 persons live in institutions. Most of these persons have severe disabilities (16,500 physically disabled, 11,500 with a mental and 2,200 with a sensoric disability. (Zwicky 2003, p. 169).

Physical Activity

A newly developed indicator allows for refined assessments about the population's physical activity. It indicates for the year 2007 that nearly 32% of the population is very active and trained. At the other end of the scale, almost one sixth of the population (15.9%) is not active at all. Anyone being at least regularly active fulfils the HEPA recommendations for healthy activity levels.

It appears that the trend towards increased inactivity has been stopped or even reversed in recent years. In 2007, less people are completely inactive and more people are trained compared to 2002. During the 1990's the share of very active persons remained stable, but the proportion of non active people rose. These proportions were calculated, however, based on an earlier definition of physical activity measured as the number of times people sweated during leisure time activities.

Figure 7: Detailed indicator of physical activity for 2002 (N=18,719) and 2007 (N=17'907)

Activity level	*2002*	*2007*	*detailed description*
Inactive	19.4%	15.9%	no activities at all
Partially active	19.1%	18.7%	at least 30 minutes moderate intensity per week or 1 day with sweating episode
Non-regularly active	25.6%	24.3%	at least 150 mins. moderate intensity per week or 2 days with sweating episodes
Regularly active	8.9%	9.3%	at least 5 days with each day at least 30 minutes of moderate intensity activity
Trained	27.0%	31.8%	at least 3 days per week with a sweating episode

Sources: Schweizerische Gesundheitsbefragungen, BFS: Lamprecht/Stamm 2005, p. 10; Observatorium Sport und Bewegung Schweiz, Indikator 1.1.

About a third of the population (34%) walks for a total of more than 30 minutes a day, thus covering the recommended time of physical activity by walking (although they may be additionally active). However, many of these stages or trips may be very short with little health effect. Commonly it is recommended that a walking stage should take at least 10 minutes to have some health effect. If only those people are counted whose walking stages each time consist of at least 10 minutes (in total also walking more than 30 minutes per day), then 30% of the population spend at least the recommended time of physical activity by walking[4].

Children, young people and seniors walk more often 30 minutes and longer per day than the rest of the population. It has to be said, however, that many children are far more active running around and playing outside than during goal-oriented mobility (e.g. going to school, shopping etc.). And for children the recommended minimal time for physical activity is substantially longer – in Switzerland it is 1 hour.

Figure 8: Proportion of population walking more than 30 minutes per day, 2005

	30 and more minutes walking per day	30 and more minutes walking per day with stages of at least 10 minutes	N
6-20 years	38.8%	33.8%	5,575
21-64 years	31.5%	27.1%	20,997
65 years & more	41.1%	38.2%	6,818
Total	34.4%	30.2%	33,390

Source: own calculation based on Mikrozensus Verkehrsverhalten 2005, BFS/ARE 2007

Recent research results in Switzerland suggest that people who are physically very active are not necessarily those who also walk often. The two groups can be distinguished in a statistically significant manner. Those who do sports and/or are active at work or in their garden are only partially also walking more than 30 minutes a day (see Schad et al., 2008).

[4] These figures can not be compared with the ones above since these here are based on the travel behaviour survey which only covers one day per person. The person who walked more than 30 minutes today may not do that the next day as well. The results allow only a general statement about the whole population and not about behaviour patterns of individuals.

Body Mass Index

The latest figures on the Body Mass Index indicate that the share of overweight people in Switzerland is stabilising. In 2007, 37.3% of the population over 15 years old were overweight (8.1% of them obese). This is about the same share as 5 years earlier, but substantially higher than 15 years ago. In 1992, only 30.3% of the population where overweight (5.4% of them obese).

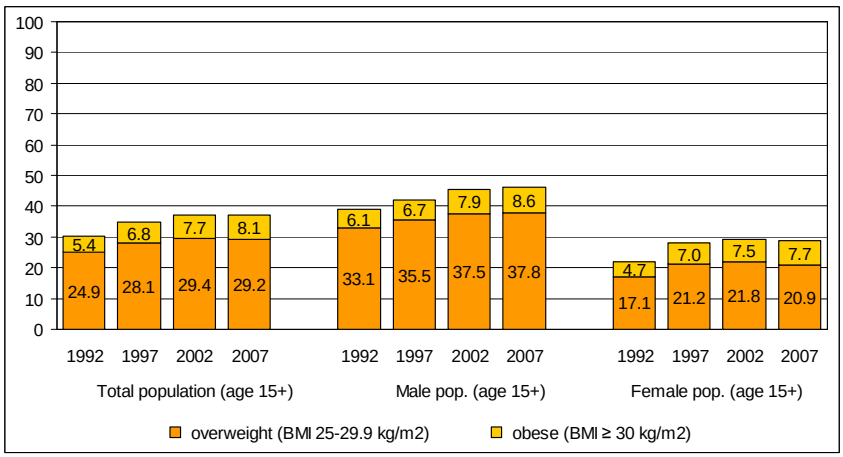


Figure 9: Body mass index (BMI) in % of Swiss population over 15 years 1992-2007 according to gender

Source: Schneider, Venetz & Gallani Berardo, HealthEcon 2009a and 2009b based on Schweiz. Gesundheitsbefragung 2007

There are substantial differences according to age and gender. But not only obesity is a problem: almost one third of all young women (age 19-34) are underweight.

Figure 10: Body mass index (BMI) in % of Swiss population 2002 according to age and gender

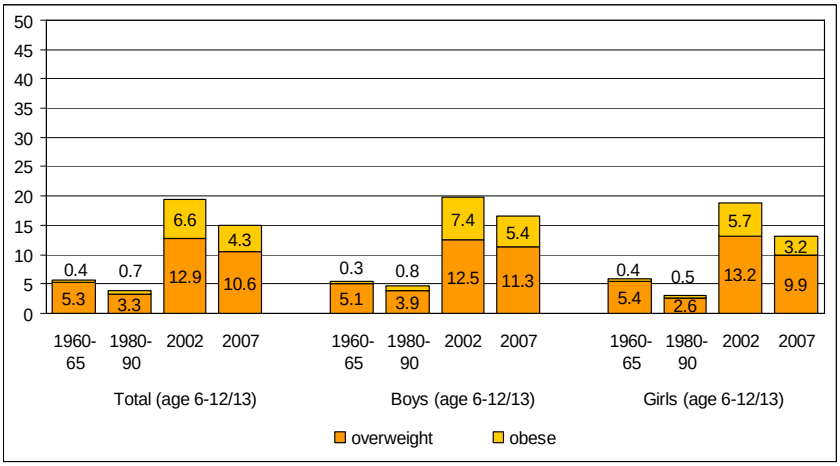
Gender	Age	underweight BMI < 20	normal weight BMI 20-24.9	overweight BMI 25 - 29.9	obese BMI > 30
Men	19-34	6.5%	61.5%	28.1%	3.9%
	35-64	2.5%	44.1%	43.4%	9.9%
	65+	2.8%	39.2%	47.0%	11.0%
Women	19-34	31.1%	52.1%	12.6%	4.3%
	35-64	16.4%	52.1%	23.1%	8.4%
	65+	10.2%	44.2%	34.7%	10.9%

Source: Gesundheitsstatistik BFS 2007 (information booklet 2007)

For children the assessment of overweight is more difficult and can't just be based on the BMI because there is a constant change of the relation between height and weight. Internationally reference criteria have been developed that allow for the assessment of obesity in children which were also used in Switzerland. According to Swiss studies about 15% of the children between 6 and 12/13 years were overweight (4.3% of them obese). This is down from 2002 when 19.5% were measured as overweight (6.6% of them obese). The rate, however, is still higher than in the mid 1960's with around 5.7% overweight children (0.4% of them obese). The figures have to be considered approximations since the methodological uncertainties are considerable.

Figure 11: Prevalence of overweight and obese children aged 6 to 12/13 years according to gender 1960/65 and 2007

Source: Schneider, Venetz & Gallani Berardo, HealthEcon 2009a and 2009b based on Zimmermann 2004 and Aeberli 2008



2.5 Transport and travel data

Methodology

The Swiss Travel Survey (microcensus) is carried out every 5 years. In 1994 the so-called stage concept was adopted which means that every single mode of transport on a trip is recorded. This produces substantially more adequate information on walking than the previous type of surveys (trip based). The following definitions are used:

> Every stage is determined by the use of one particular mode of transport. Thus, when the mode changes, a new stage starts (but not a new trip). A stage is only recorded if it is longer than 25 metres; changes of location within private or business spaces are not recorded.
>
> A trip consists of one or several stages and is defined by the purpose, i.e. the activity at the destination. The trip ends when the destination is reached. If the purpose changes on the way, then a new trip starts.

Data is collected of all persons from the age of 6 years for one given day. The person is contacted by phone and is interviewed about the mobility on the previous day. The survey takes place during a full year taking into account all weekdays and seasons.

Characteristics of daily mobility on foot

On average 90% of the people living in Switzerland are mobile on any given day. This share is lower with older people and on weekends. The average number of trips is 3.3 per day; again the elderly population makes fewer trips (2.4). 62% of the population made at least one stage per day on foot. This share is larger with children.

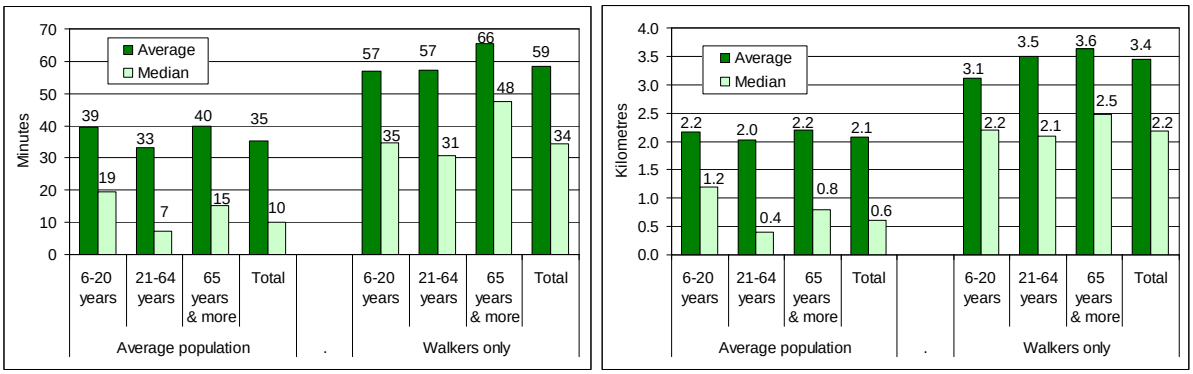
Figure 12: Some characteristics of daily mobility of the Swiss population, 2005

	Number of persons surveyed	Persons mobile on survey day	Number of trips per day	Share of persons with at least one stage on foot on day surveyed
6-20 years	5,575	90.3%	3.4	69.8%
21-64 years	20,997	91.2%	3.5	59.7%
65 and older	6,818	79.6%	2.4	62.1%
Total	33,390	89.1%	3.3	61.9%

Source: Mikrozensus Verkehrsverhalten 2005, BFS/ARE 2007

On average, people living in Switzerland walk for 35 minutes a day and cover a distance of 2.1 kilometres. Active pedestrians – i.e. those people who walked on the particular day surveyed – did that for almost an hour, covering a distance of 3.5 kilometres.

Figure 13: Average and median time (left) and distance (right) walked per day 2005 according to age group



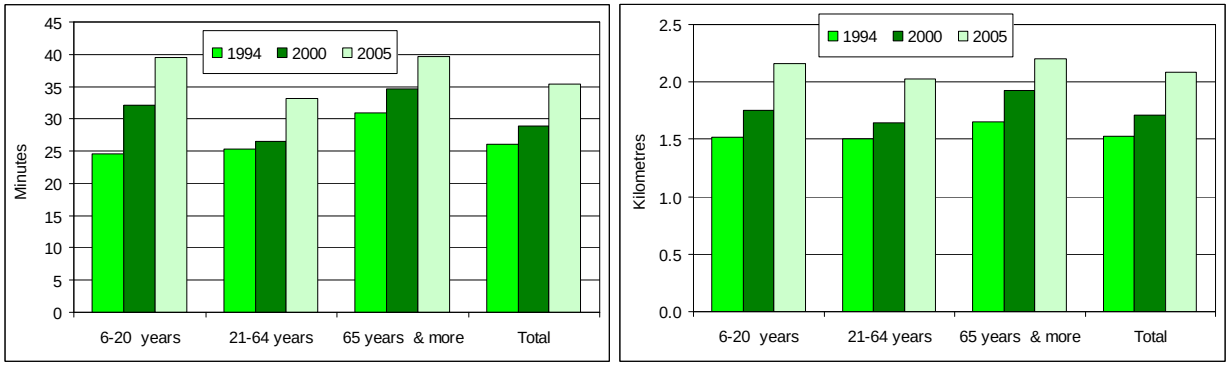
Source: Mikrozensus Verkehrsverhalten 2005, BFS/ARE 2007 (own calculation)

The average time and distance is, however, somewhat misleading because a small proportion of the population walks quite far and for a long time while the majority does not do that. This fact is expressed with the calculation of the 'median'. It marks the value which splits the population in half: 50% are above the given value and 50% below. For example: while the average population walks for 35 minutes a day, the median is at 10 minutes meaning that half of the population walks more than 10 minutes and the other half walks less than 10 minutes. The gap is particularly large among the 21 to 64 year-olds. Similarly with the distance walked by active pedestrians: half of them walk for more than 2.2 km a day and the other half less (median) while the average distance is 3.4 km.

Elderly persons have fewer trips in total but they walk for longer and walk further than the average population. Children make more trips than the elderly but they walk about the same distance and for the same time as they do.

Since 1994, the average time and distances people walk has increased by about a third; children have an even higher increase. It is not clear, however, how much is due to improved methodology. Detailed analyses showed that until the year 2000 the short walking stages connecting to other modes of transport (car, bus, train etc.) were not adequately recorded. The figures below just give the average but the picture is similar when looking at the median.

Figure 14: Average time (left) and distance (right) walked per day 1994, 2000 and 2005 according to age group (N= 18,020, 29,407 and 33,390 persons)



Source: Mikrozensus Verkehrsverhalten 1994, 2000, 2005, BFS/ARE 1996, 2001 & 2007 (own calculation)

'Full' and combined walking trips

28% of all trips are done by walking alone. Additionally 24% are combined trips. This means walking is part of a trip together with another mode of transport. The share of 'full' walking trips is highest among the elderly population.

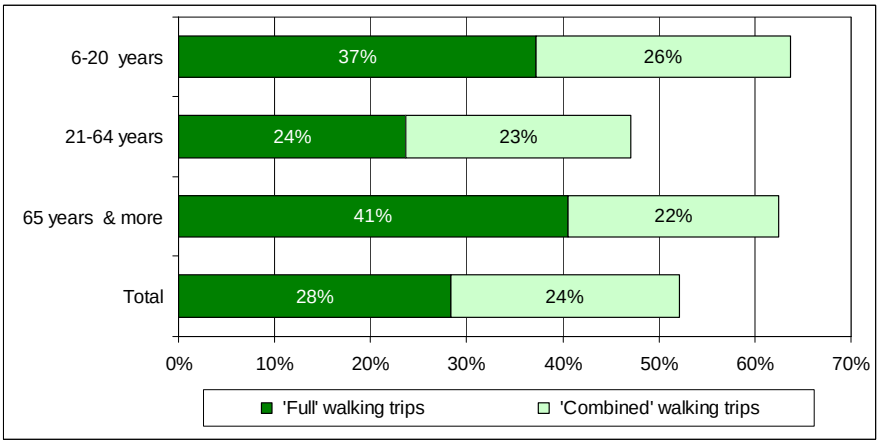


Figure 15: 'Full' and combined walking trips according to age group 2005 (N=108,880 trips)

Source: Mikrozensus Verkehrsverhalten 2005, BFS/ARE 2007 (own calculation)

Trip purpose and walking

39% of all work-related stages and about half of all shopping stages are made on foot. In comparison, almost 60% of all stages to and from school are walking stages.

Figure 16: Proportion of walking stages measured against all stages according to purpose 2005 (N=163,870 stages)

	Proportion of walking stages of all stages
Work	38.6%
Education (to and from school)	58.9%
Shopping	48.4%
Leisure	47.0%
Accompaniment & Service	26.5%
Total	44.9%

Source: Mikrozensus Verkehrsverhalten 2005, BFS/ARE 2007 (p. 41 and own calculation)

Share of transport modes according to number of stages, time and distance

The share of transport modes can be calculated in different ways. Usually this is done on the basis of the daily distance travelled. Because walking trips are usually short, this means that the share of walking is very small based on this calculation. More adequate is the distribution according to time spent or number of stages.

The data for Switzerland 2005 shows that 45% of all stages are done by walking. And 40% of the time spent in traffic is done so as pedestrian while the distance walked makes up only 6% of all distances travelled. For all modes see table below.

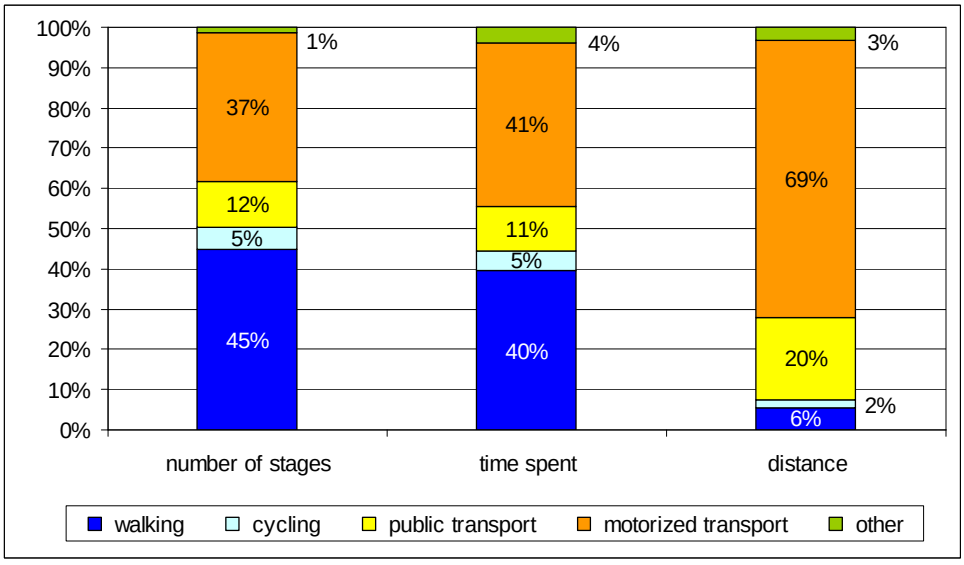


Figure 17: Share of transport modes according to number of stages, time spent and daily distance travelled 2005 (N=33,390 persons)

Source: Mikrozensus Verkehrsverhalten 2005, BFS/ARE 2007

Figure 18: Share of transport modes in detail according to number of stages, time spent and daily distance travelled 2005 (N = 33,390 persons)

	number of stages	time spent	distance
Walking	44.9%	39.7%	5.5%
Cycling	5.3%	4.7%	2.1%
Total walking & cycling	***50.2%***	***44.4%***	***7.6%***
Moped	0.3%	0.2%	0.2%
Motorcycle	1.2%	1.3%	1.6%
Car driver	27.3%	28.6%	48.1%
Car passenger	8.3%	10.5%	18.8%
Total motorized transport	***37.1%***	***40.7%***	***68.8%***
Railway	3.9%	5.9%	16.1%
Postbus	0.4%	0.4%	0.4%
Tram/bus	7.2%	4.9%	4.0%
Total public transport	***11.5%***	***11.1%***	***20.4%***
Other	1.2%	3.8%	3.2%
Total all	***100.0%***	***100.0%***	***100.0%***

Source: Mikrozensus Verkehrsverhalten 2005, BFS/ARE 2007

Share of transport modes according to trips

The disadvantage of the presentation according to stages or time spent is that it does not reflect the share of transport modes on a full trip since a trip can comprise different modes. One solution is to present the trips divided up into those parts with 'just' one mode of transport and those with combination of modes. For the Swiss data it can be shown that relatively few combination types cover most of the daily mobility of people. It is, thus, the following modes/combinations which are used in the presentations below:

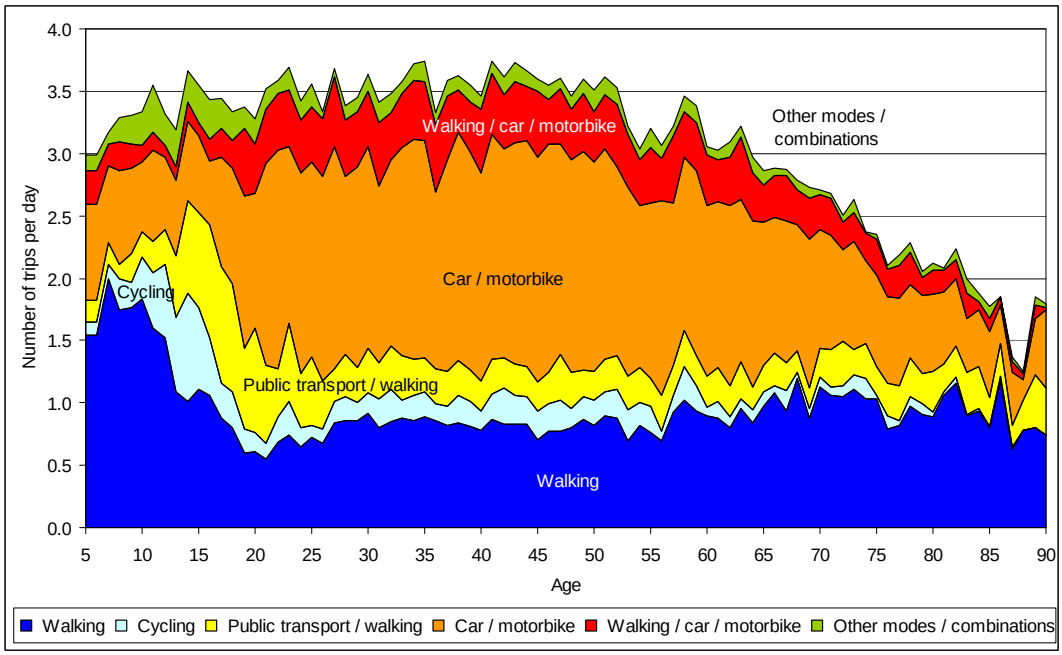
Walking:	the whole trip is walked (from door to door): 'full' walking trip
Cycling:	the whole trip is cycled (from door to door): 'full' cycling trip
Public transport and walking:	the trip is a combination of both modes (public transport may include bus, tram, train etc. but not taxi)
Walking, cycling and public transport:	the trip is either a combination of all three modes or of cycling and public transport or cycling and walking
Car / motorcycle:	the whole trip is made with a motorised vehicle – either as driver or as passenger; 'full' motorised trip
Walking, car or motorcycle:	the trip is a combination of a motorised mode with walking, most often a walking trip to and from the parking lot and a drive
Other modes/combinations	all trips made with other modes (e.g. boat, taxi etc.) or combinations of all kind of modes which are not mentioned above

Choice of transport mode according to age (over a lifetime)

A detailed analysis according to age (measured in single years) shows that the number of trips per day starts to diminish continuously after the age of 50. Children make by far most of their trips on foot. Later on in life motorized trips increase substantially, again until about the age of 50 when they slowly start to diminish. Although the data is recorded for only one day per person and only for the year 2005, the figure can serve as an indication of mobility patterns over a life time.

It has to be taken into account, however, that this picture is static and not reflecting changes over time, e.g. that people in general are getting older or that more women now drive compared to 20 years ago (so called 'cohort effect').

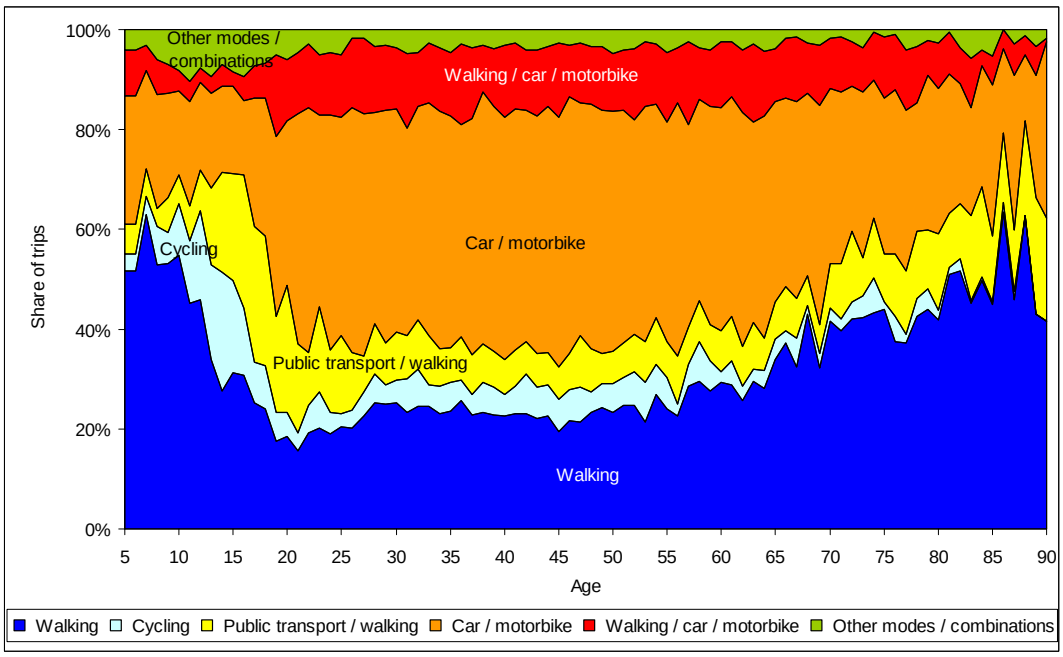
Figure 19: Number of trips according to choice of transport mode and age (N=33,390 persons)



Source: Mikrozensus Verkehrsverhalten 2005, BFS/ARE 2007 (own calculation)

Seen in percentages the proportion of walking is not only high during childhood but also in the older age. From the age of 50 years upward, walking trips increase – as 'full' walking trips but also together with public transport. At the same time the proportion of trips with motor vehicles diminishes.

Figure 20: Choice of transport mode according to age (N=33,390 persons) *



Source: Mikrozensus Verkehrsverhalten 2005, BFS/ARE 2007 (own calculation)

* The 'jagged' line within the same age bracket is due to the sampling method and not statistically significant. This is particularly true for the ages beyond 80 years where not so many persons are included in the sample.

Choice of transport mode on trips to and from school

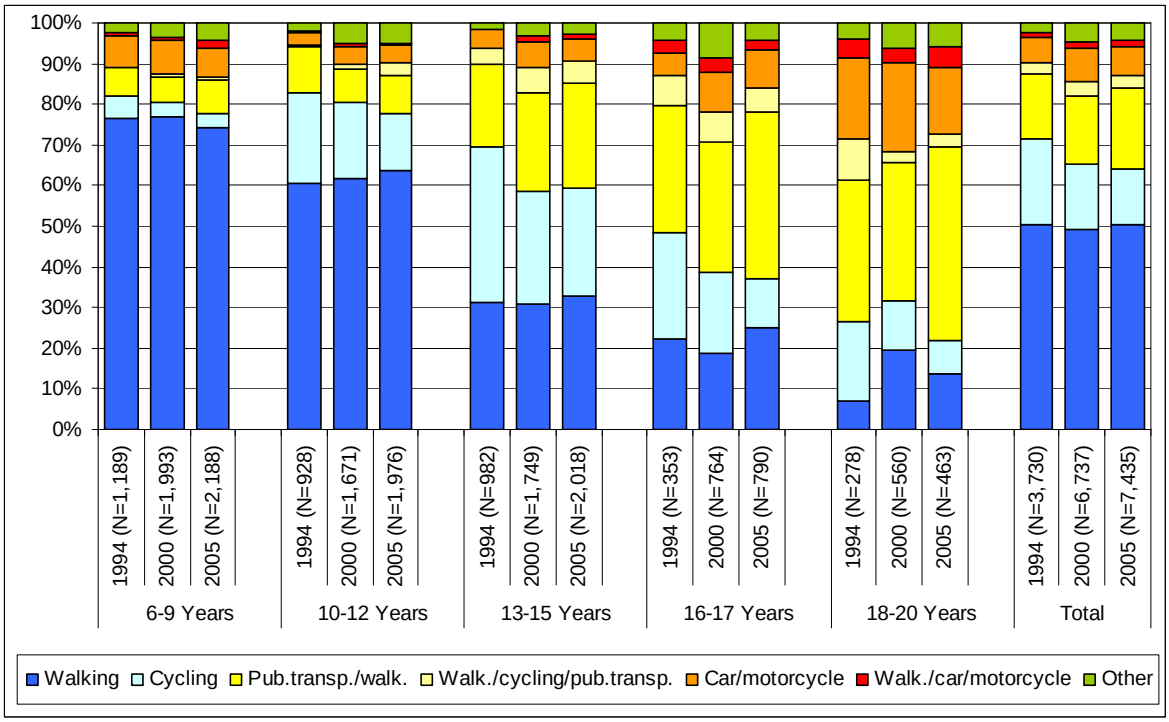
Due to the specific characteristics of the Swiss school system, most children go home at lunch time and return to school in the afternoon. This means that during the compulsory schooling years most children have 2 to 4 school trips per day (some afternoons are free depending on the age).

The share of 'full' walking trips to school continues to be high in Switzerland. In primary school, on average 70% of all school trips are done by walking only, between the ages of 13 and 15 years, cycling becomes almost as important and then public transport (combined with walking). Driving children to school by car is still not very common. The largest share is measured in affluent suburban communities and among parents with two and more cars in the household. Driving children to school is also higher in the French speaking part of Switzerland compared to the German speaking areas.

The share of walking has remained fairly stable between 1994 and 2005 while the proportion of cycling has diminished dramatically, by about 40%. School trips by public transport have increased, particularly among young people (16 years and older).

A detailed analysis of school and leisure trips by children and young people in the Swiss context has been undertaken by Sauter 2005 and 2008 (see literature, summaries in English available).

Figure 21: Children and adolescent's choice of transport mode to/ from school 1994, 2000, 2005 by age



Source: Sauter 2008 (based on Mikrozensus Verkehrsverhalten 1994, 2000, 2005: BFS/ARE 1996, 2001 and 2007)

Choice of transport mode according to number of cars in a household

The number of cars in a household has a substantial effect on the modes used. For example on trips to and from leisure activities: Persons living in car free households are by far more often actively mobile (walking and cycling) and use more often public transport than persons living in households with one or several cars. This is true for all age groups.

While 47% of people in car free households walk and 8% of them cycle on their leisure trips, it is only about half of that share for those people who live in a household with three or more cars. They instead have the highest proportion of car-trips. Two thirds of all their trips are made with a motor vehicle. In car free households this share is only 16%. This is true (with only minor differences) irrespective if people live

in the city or out in the country. Such results call for political action when considering that the number of households with several cars is constantly increasing and that children are as affected by this behaviour as all other age groups. Action is needed particularly in the light of the increasing health problems due to lack of physical activity and the increasing ecological problems in connection with climate change.

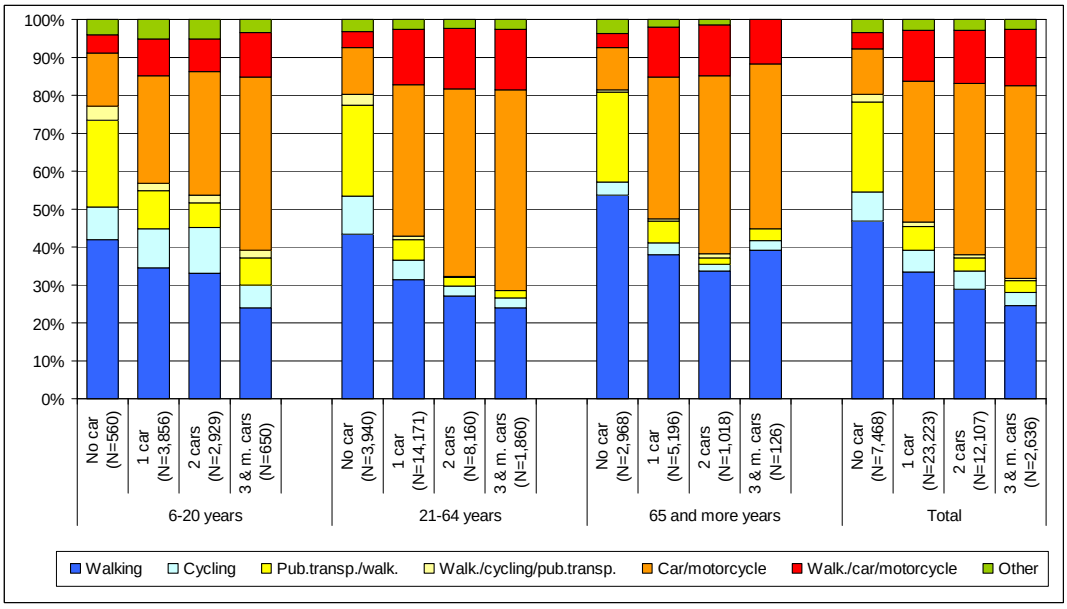


Figure 22: Choice of transport mode on leisure trips according to number of cars in a household and age group 2005

Source: Sauter 2008 (based on Mikrozensus Verkehrsverhalten 1994, 2000, 2005: BFS/ARE 1996, 2001 and 2007)

2.6 Road danger (safety) and single pedestrian accidents

General developments: casualties and the problem to measure exposure

Over the five past years about 2,400 pedestrians per year have suffered from injuries of traffic accidents; 700-800 of them were severe injuries and between 60 and 80 pedestrians died. The number of seriously injured and killed pedestrians has decreased over the past 15 years, particularly between 1995 and 2005, not so much since then. The decrease is probably due to a number of reasons. Many cities have introduced 30 kph zones in their neighbourhoods and some major roads have been improved for pedestrians. Further, the legal limit for driving with alcohol has been lowered and traffic fines have been increased. Nevertheless, the number of casualties for an everyday activity like walking is far too high. While the severe accidents in absolute numbers and per 100,000 inhabitants have been reduced there is no clear indication that the risk in terms of exposure has been reduced as well. Although general statistical figures are lacking, it is, for example, not known how much the fact that parents accompany their children more often has led to a lower risk exposure for children while the danger remained the same (see also below).

Measuring exposure in walking is difficult for a number of reasons: It is often not known how much of the walking is done exactly (difficulty to assess exact time spent in traffic walking). And it is in particular often not known how much of the walking is done on roads which are exposed to traffic and how much is done on footpaths, pedestrian zones et cetera away from roads. Furthermore, the risk for pedestrians is highest when crossing a road. There is, however, no data in Switzerland on how many crossings a person performs per day on which type of road and under which conditions.

If measured at all then often risk and exposure are assessed by the distance travelled. This figure is, however, not useful for pedestrians. More adequate is the time spent in traffic (with the difficulties mentioned above). Although the Swiss data collection of walking time has been improved in 2005 (as mentioned earlier), it is not clear if this is sufficiently reliable and valid for risk calculations. Due to the changes in methodology certainly no comparisons over time are possible.

Figure 23: Pedestrians injured or killed in road accidents between 1995 and 2009 in absolute numbers and per 100,000 inhabitants

	absolute numbers			per 100'000 inhabitants		
	Slightly injured	Seriously injured	Killed	Slightly injured	Seriously injured	Killed
1995	1,788	1,153	126	25.3	16.3	1.8
2000	1,882	901	130	26.1	12.5	1.8
2005	1,647	707	69	22.1	9.5	0.9
2006	1,721	733	76	22.9	9.8	1.0
2007	1,690	793	79	22.3	10.4	1.0
2008	1,717	638	59	22.3	8.3	0.8
2009	1,756	704	60	22.6	9.0	0.8

Source: Strassenverkehrsunfälle in der Schweiz, BFS 2006b; Unfallgeschehen in der Schweiz, BFU 2006; STATUS 2010, BFU 2010.

Road danger according to age: the elderly and children

Going back to 'traditional' danger assessments of measuring casualties in proportion to the population we can see that children and elderly pedestrians have a much higher rate of being seriously injured or killed than other age groups. Pedestrians older than 75 years of age are three times more in danger than the average pedestrian and 6 times more compared to the age group of 25 to 44 year-olds. The particular vulnerability of young children and the elderly is also shown in the case fatality rate which measures the number of killed pedestrians per 10,000 victims.

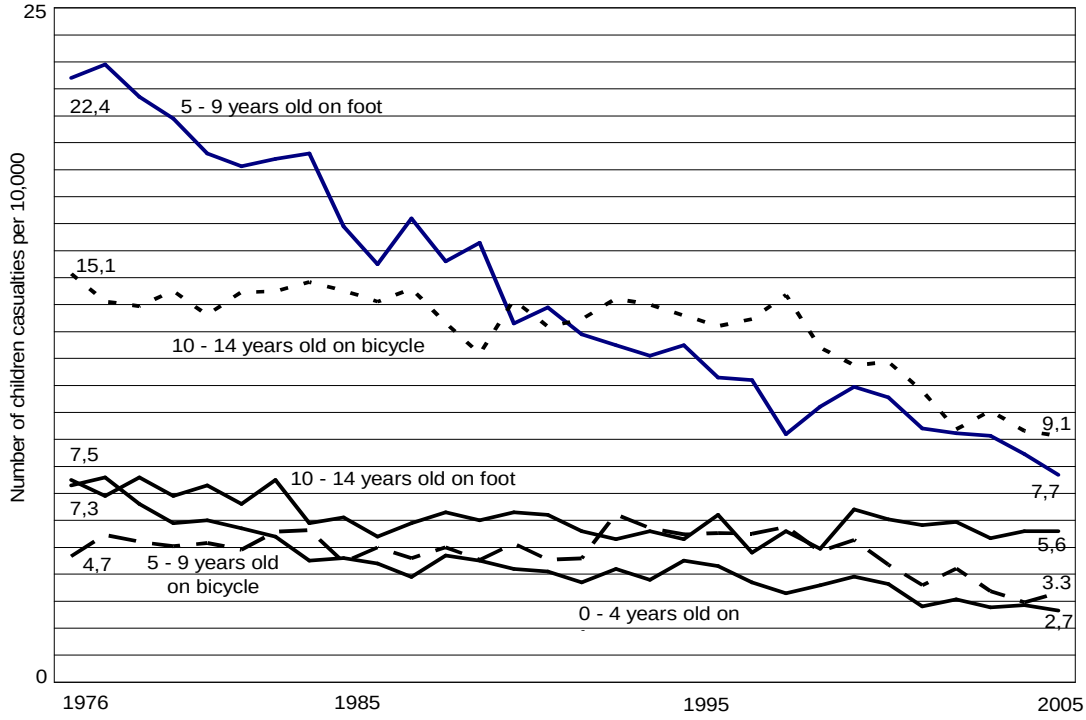
Figure 24: Number of seriously injured and killed pedestrians per 100,000 inhabitants and case fatality rate according to age group 2005 (Case fatality = number of killed pedestrians per 10,000 victims)

	0 - 6 years	7 - 14 years	15 - 17 years	18 - 24 years	25 - 44 years	45 - 64 years	65 - 74 years	75+ years	Total
Seriously injured and killed per 100,'000 inhabitants (2005)	9.8	14.8	14.1	7.8	5.4	7.8	15.5	30.8	10.4
Case fatality average 2001-2005	329	91	204	250	249	746	1,171	2,191	691

Source: Unfallgeschehen in der Schweiz, bfu-Statistik 2006, p. 14 (based on Strassenverkehrsunfälle in der Schweiz, BFS)

How difficult it is to estimate the influences of exposure on accident rates can be seen by looking at childrens' accident rates since 1976. This analysis shows that mainly the rate of children between 5 and 9 years has substantially decreased. Relatively seen (in percent) the rate of children on foot up to 5 years has had a similar decrease. Accidents of all other children (children using a bicycle, travelling as car passengers or older children walking) have decreased much less. Although there are no figures available for Switzerland, those from other countries and general observations show that children, as pedestrians, are being increasingly accompanied and that their outside play is more and more often restricted. These two trends could explain the substantial decrease in accidents rates of children on foot up to 9 years. Other arguments support that thesis: it can be assumed that all the safety measures taken in the last 30 years, such as education, technical measures on roads and vehicles would have had a similar effect on all modes and on all ages, which is obviously not the case. It is only young children on foot who can be accompanied and whose mobility and play can be relatively easy restricted. Children above the age of nine would not allow that and those on a bike are difficult to accompany.

Figure 25: Casualties of children between 1976 and 2005 according to proportion of population and mode used



Source: Hüttenmoser/Sauter 2000 (updated calculation; based on Strassenverkehrsunfälle in der Schweiz (BFS)

Zebra crossings

About 38% of pedestrian accidents occur at a zebra crossing, 17% on pavements or on the side of the road and about 40% while crossing a street outside a regulated crossing. 5% occur at other places. The number of accidents at zebra crossings depends, of course, on the number of such provisions and the number of people using them. No data is available to establish the relevant rate. Elderly pedestrians have a higher probability of getting seriously injured or killed on zebra crossings than the average pedestrian. This could be due to the fact that they use these provisions more often compared to the rest of the population trusting that they would allow safe(r) crossings.

A study which was done in 1998 (only for that year) found that half of the pedestrian fatalities at zebra crossings happened on the second part of the crossing and had therefore nothing to do with a sudden step onto the road as is often implied. These accidents also involved mostly elderly people. According to police statistics, about 80% of the accident causes at zebra crossings lie with the driver only, about 5% are due to a fault by a pedestrian only and 13% by a fault by both of them. 2% have external causes[5].

City and country

A comparison between city and countryside shows that more accidents happen in the city but the accidents and the injuries are more serious in smaller villages out in the country. The smaller the community, the larger the proportion of serious injuries and fatalities. This is mostly due to main highways cutting across smaller communities with higher speeds being driven. Along the main streets also lie most of the places pedestrians need to go.

5 In general (not only on zebra crossings) 28% of accidents involving a pedestrian are caused by the pedestrians alone, 54% by other road users and 18% by both parties (bfu 2007, p. 137)

Pedestrian casualties compared to other road users

Compared to other road users, pedestrians are more likely to get severely injured due to the lack of protection and the age of the accident victims. In 2005 about 17% of all killed persons in traffic had been walking. The proportions are similarly high for seriously injured pedestrians (14%), but lower for slight injuries (8%). This illustrates that pedestrians are particularly vulnerable and are proportionately more often seriously injured or killed.

Figure 26: Number of road users injured and killed 1995, 2000 und 2005

		Pede-strians	Bicycles	Other non-motorised vehicles	Mopeds	Motor-cycles	Passen-ger cars	Vehic. for transport of persons (buses)	Vehic. for transport of goods (trucks)	Other or unknown	Total	Pede-strians in % of total
Killed	1995	126	53	6	29	106	335	2	21	14	692	**18.2%**
	2000	130	48	5	19	92	273	2	15	8	592	**22.0%**
	2005	69	37	3	6	86	178	13	10	7	409	**16.9%**
Seriously injured	1995	1,153	1,006	26	504	1,234	2,807	47	117	39	6,933	**16.6%**
	2000	901	959	27	305	1,364	2,431	45	122	37	6,191	**14.6%**
	2005	707	815	44	190	1,451	1,721	33	75	23	5,059	**14.0%**
Slightly injured	1995	1,788	2,346	76	1,234	2,537	13,100	185	514	46	21,826	**8.2%**
	2000	1,882	2,284	55	935	3,136	14,714	172	606	83	23,867	**7.9%**
	2005	1,647	2,322	106	614	3,519	12,736	176	504	71	21,695	**7.6%**

Source: Strassenverkehrsunfälle in der Schweiz, BFS 1996b

Underreporting

The Swiss council for Accident prevention (Beratungsstelle für Unfallverhütung, bfu) has recently estimated that about 2/3 of injured pedestrians are not registered by the police when involved in an accident. Until now there is no regular data collection on the underreporting of traffic victims.

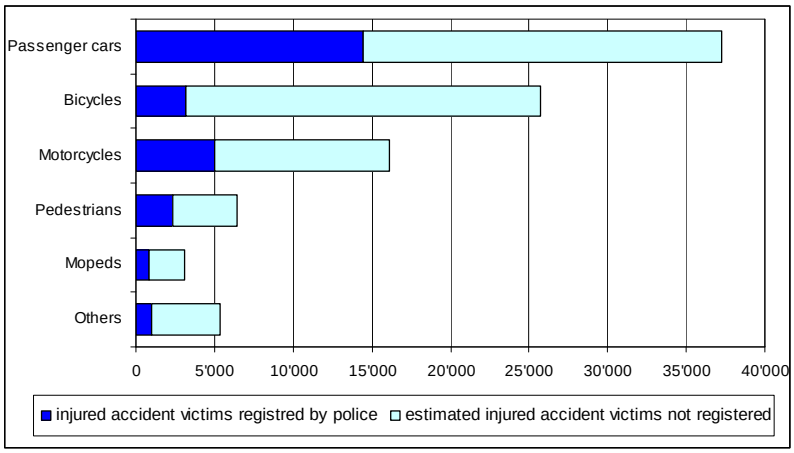


Figure 27: Estimated injured road users not being registered by police compared to registered accident victims 2005

Source: Unfallgeschehen in der Schweiz, bfu-Statistik 2006, Beratungsstelle für Unfallverhütung

Single pedestrian accidents

Statistics on single pedestrian accidents are not collected in Switzerland. Some single estimates of hospital data have been made but they are not comprehensive and are, thus, questionable. Because of the international definition of accidents which requires a vehicle to be involved to count as a traffic accident, single pedestrian accidents are not included in the official Swiss statistics either.

A study of elderly people (65 years and older) in 1995 showed that for every accident involving a vehicle, fifteen single pedestrian accidents happen. Reasons for the single accidents are mostly slipping and falling because of snow, ice and uneven surfaces. If all pedestrian casualties including the ones from single pedestrian accidents were counted, pedestrians were to make up three quarters of all casualties, while car drivers and passengers amounted only to about 5% (Hubacher/Ewert 1997).

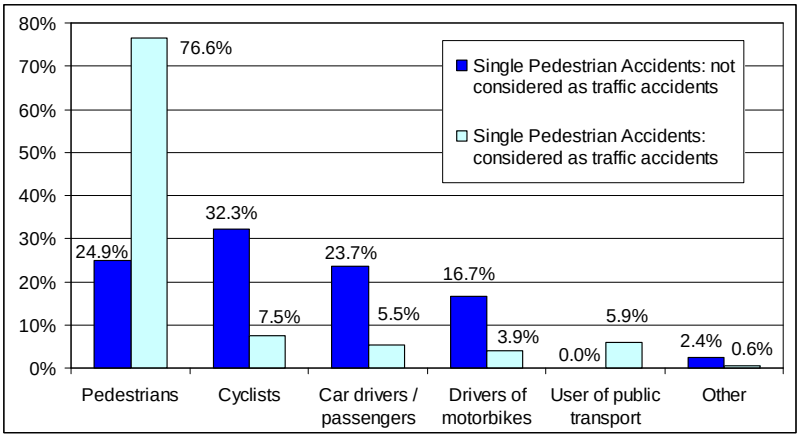


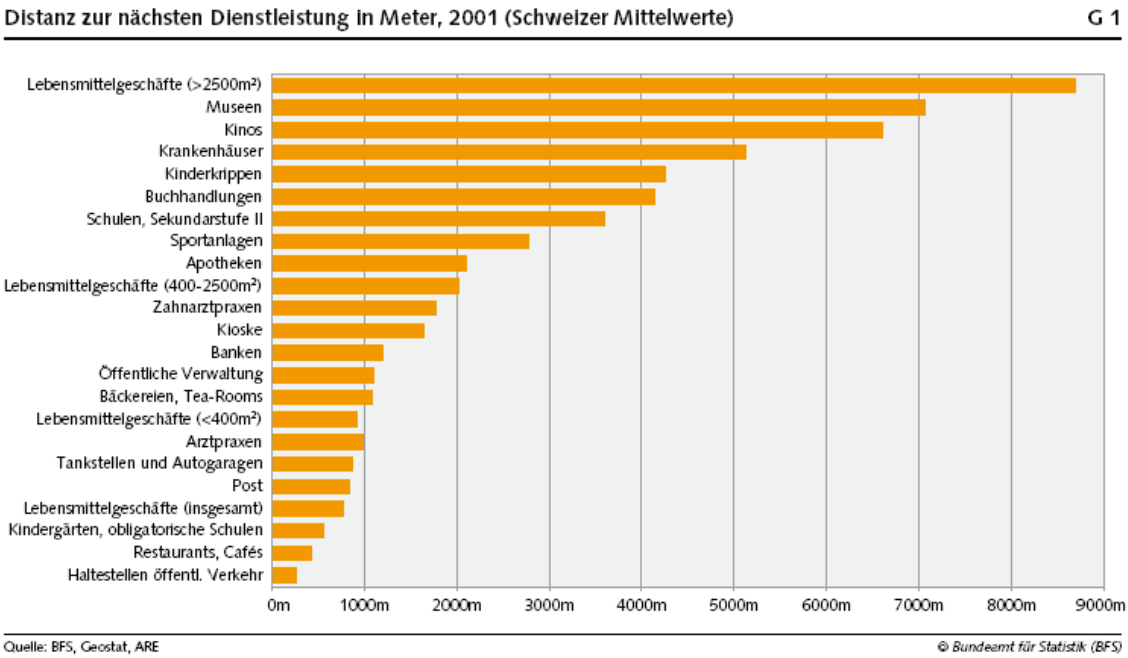
Figure 28: Distribution of casualties of seniors according to definition of accidents and mode of transport 1995

Source: own calculations based on Hubacher/Ewert 1997)

2.7 Accessibility of services (macro level)

Accessibility to services can be measured in different ways. One is the average distance a person has to walk (or travel by other means) to reach certain services[6]. The following figure shows that public transport stops, restaurants and schools are very close for most people – only a few hundred metres away. Doctors' offices, small food stores, bakeries and banks are all on average about one kilometre away. Hospitals (5.2 km), movie theatres (6.5 km) and supermarkets (8.8 km) are on the contrary much further away and generally not in walkable distance anymore.

Figure 29: Average distances to the nearest shops, services and public transport stops, 2001



Source: Dienstleistungen für die Bevölkerung: Erreichbarkeit 1998-2001, BFS 2006c

Legend (from top):

food stores: large supermarkets (>2500m^2)
museums
movies
hospitals
day care facilities
book stores
schools (secondary level II)
sports facilities

continued… (1)

pharmacies
food stores: small supermarkets (400-2500m^2)
dentists' offices
kiosks
banks
public administrations
bakeries, tea-rooms
small food stores (<400m^2)

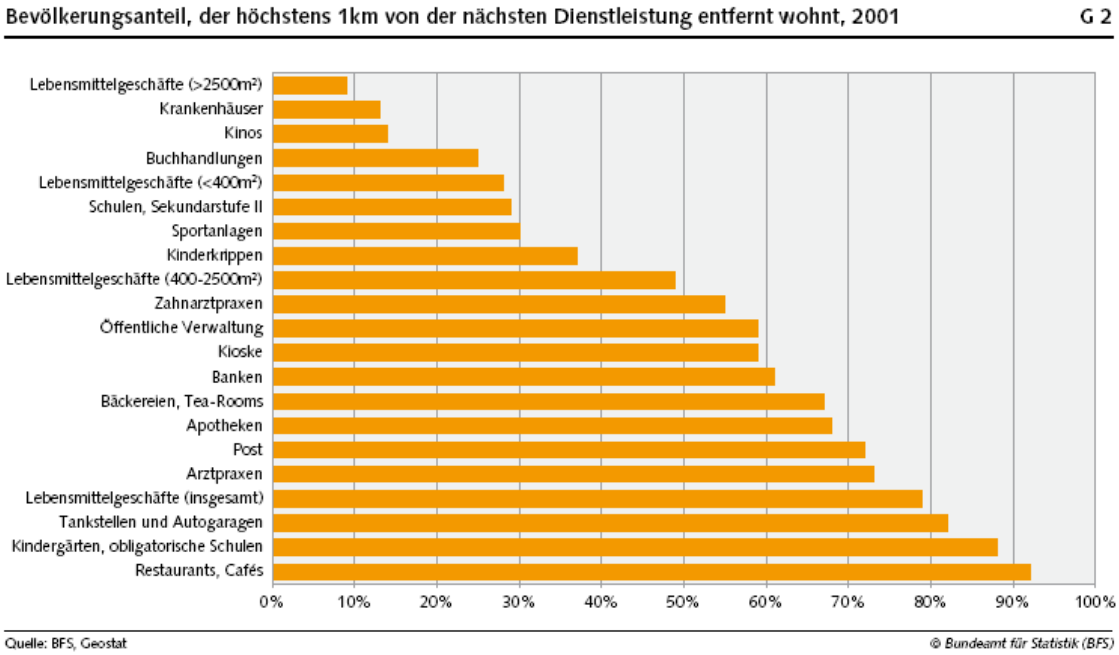
continued… (2)

doctors' offices
petrol and service stations
post offices
food stores (total)
kindergarten, public and high schools
restaurants, cafés
stops of public transport

6 In this study the distance was calculated as the road distance between the centre of an inhabited hectare and 40 different services based on geo-coded information.

Another way to measure accessibility is to calculate the proportion of the population living 1 kilometre or less from the nearest service facility. The following figure shows that around 90% of the population live within 1 kilometre of a restaurant or public school. Still around 60% live near a bank or their public administration. But only 20 to 30% have a book store or sports facility nearby.

Figure 30: Proportion of population living at 1 km or less from the nearest service facility, 2001



Source: Dienstleistungen für die Bevölkerung: Erreichbarkeit 1998-2001, BFS 2006c

Legend (from top):

food stores: large supermarkets (>2500m^2)
hospitals
movies
book stores
small food stores (<400m^2)
schools (secondary level II)
sports facilities

continued… (1)

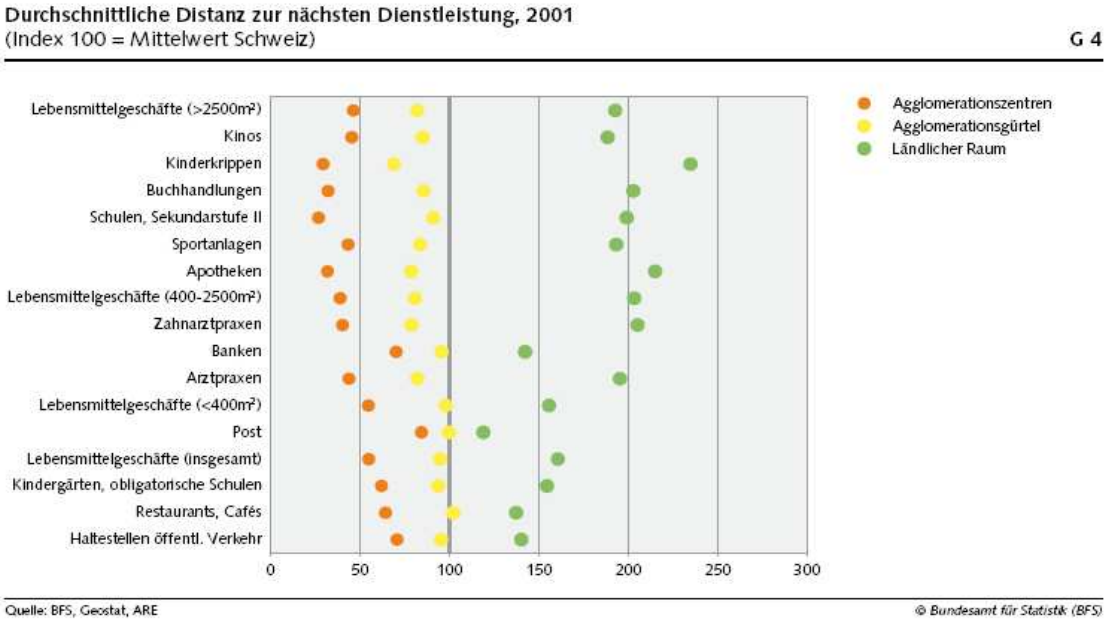
day care facilities
food stores: small supermarkets (400-2500m^2)
dentists' offices
public administrations
kiosks
banks
bakeries, tea-rooms

continued… (2)

pharmacies
post offices
doctors' offices
food stores (total)
petrol and service stations
kindergarten, public and high schools
restaurants, cafés

Accessibility and distances highly depend on the area a person lives in, particularly the differences between urban, suburban and rural environments. The following figure shows the indexed average distances to the closest service facility according to central (orange), suburban (yellow) and rural areas (green) with the Swiss average being 100.

Figure 31: Average distance to the nearest service facility according to area, 2001 (index 100 = Swiss average)

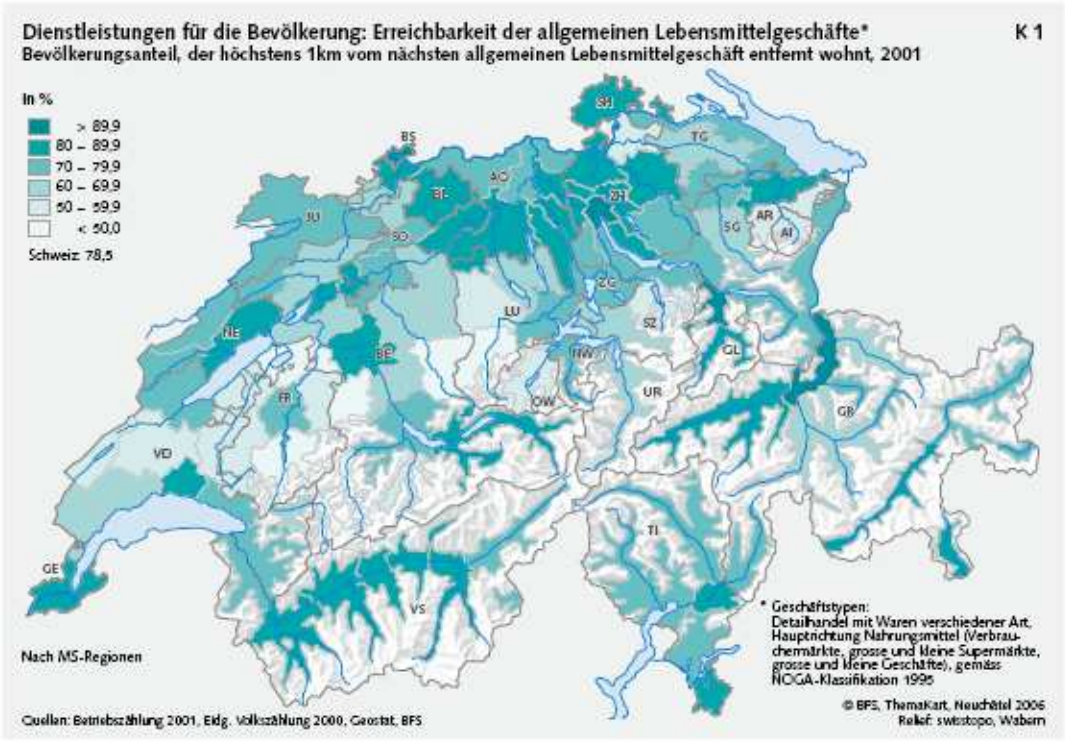


Source: Dienstleistungen für die Bevölkerung: Erreichbarkeit 1998-2001, BFS 2006c

While basic services such as food stores, schools, post offices, restaurants are within an index reach of 50 to 150 between the different spatial settings, other services are further apart, e.g. book stores, sports or day care facilities. The latter have in the centre an index of 30 and in rural areas one of around 240, which means these services are on average 8 times further away.

To conclude, the same information as above is presented here as geographical map showing that general food stores are quite well accessible throughout the country – certainly in the main living areas but also in most mountain valleys. Accessibility is lower in some rural areas. The darker the area the higher the proportion of the population who can reach the closest food store within 1 kilometre.

Figure 32: Average proportion of population who can reach the nearest food store within 1 kilometre, 2001



Source: Dienstleistungen für die Bevölkerung: Erreichbarkeit 1998-2001, BFS 2006c

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3. Publications and research

3.1 Introduction

For a long time walking-related research in Switzerland was rare and isolated, mostly done by specialized associations and researchers. It focused mainly on vulnerable users (elderly people, children), on pedestrian-friendly redesign of roads and on issues of implementation and the legal framework (speed limits, traffic calming, federal law on footpaths and hiking trails, etc.), aiming to inform the experts in the field and to promote best practices.

This situation started to change around the year 2000. More research was commissioned and the increasing number of publications started to reflect the growing interest in walking and pedestrians also within official circles (federal offices, research funds). The issues treated widened with recent publications focusing e.g. on strategies to promote walking, on best practices and walking-related health issues, as well as measuring walking.

Despite these positive developments research on walking remains very limited in scope and in terms of funding, particularly compared to research on transport issues in general.

The following list of publications reflects the changes mentioned above. It is structured in chronological order, i.e. according to the year of publication in three main sections:

- Published reports on pedestrian issues

  This sub-chapter is divided into part A with reports directly linked to walking and part B on publications “indirectly” linked to walking, e.g. dealing with public space, road safety, urbanism, traffic calming, health issues. While part A tries to be comprehensive, part B is a selection of reports made according to a (subjective) estimate of relevance

- Current research projects

  A list of research projects currently being under way (reference year 2010)

- Websites and magazines

  These two sub-chapters contain a list of relevant websites and regular publications on walking reflecting two other important ways of sources for information in the field. Only websites and magazines with walking as a main issue were selected. There are, of course, many more websites and magazines in which pedestrians are just one of the aspects treated (see also chapter 4.9 for the relevant actors).

In the Annex at the end of the report, the publications of part A as well as the current research projects are described and summarized in detail.

3.2 Publications

List of published Swiss reports on pedestrian issues

A Reports directly linked to walking	Year of publication
Building costs for the most common pedestrian and bicycle infrastructure Baukosten der häufigsten Langsamverkehrsinfrastrukturen Hofstetter Markus, Farner Christian (KONTEXTPLAN AG), 2010: Bundesamt für Strassen ASTRA (Hrsg.)	2010
Traffic regulation systems – Handicapped and older people at signalized intersections Verkehrsregelungssysteme – Behinderte und ältere Menschen an Lichtsignalanlagen, Forschungsauftrag VSS 2007/304 Ferella Falda Mauro, Brugnoli Gianni, Grahl Stefan, 2010: Bundesamt für Strassen ASTRA (Hrsg.)	2010
Slow moving traffic, Part 1: Pre-modern traffic conditions Der Langsamverkehr, Teil 1: Die vormodernen Bedingungen des Verkehrs Schiedt Hans-Ulrich (ViaStoria - Zentrum für Verkehrsgeschichte Universität Bern), 2009: Bundesamt für Strassen ASTRA und Via Storia (Hrsg.)	2009
Behaviour at Pedestrian Crossings Verhalten an Zebrastreifen Thomas Christian M., 2009: Fussverkehr Schweiz (Swiss Pedestrian Association)	2009
Pedestrian and bicycle traffic in town and in the countryside Zur Zeit: Eile mit Weile - Fuss- und Veloverkehr in der Stadt und auf dem Land Villiger Simon, 2009: Statistik Stadt Zürich	2009
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The ABC's of creating safe ways to school Das ABC der Schulwegsicherung Regli Pascal, Zürcher Tonja, Gladow Beatrice, 2009: Fussverkehr Schweiz	2009
Creating shopping areas, easily accessible by walking and cycling Erschliessung von Einkaufsgeschäften für den Fuss- und Veloverkehr Bernhardsgrütter Andreas, Schweizer Thomas, Fussverkehr Schweiz Merkli Christoph, 2009: Pro Velo Schweiz	2009
Flâneur d'Or 2008 – The award of pedestrian infrastructure Jurybericht Flâneur d'Or 2008 – Fussverkehrspreis Infrastruktur Schweizer Thomas, 2008: Fussverkehr Schweiz	2009
Mobility of children and adolescents. Facts and trends based on the evaluation of the microscensuses on travel behaviour 1994, 2000 and 2005 Mobilität von Kindern und Jugendlichen. Fakten und Trends aus den Mikrozensen zum Verkehrsverhalten 1994, 2000 und 2005 SAUTER Daniel (Urban Mobility Research), 2008: Zürich	2008
Crossings for the pedestrian and cycle traffic Grob Daniel (GrobPlanung GmbH), Pestalozzi Christian (Pestalozzi & Stäheli), Forschungsauftrag VSS 1999/271, Bundesamt für Strassen (Hrsg.), 2008: Bern	2008
Muscle-powered mobility, Base document for Switzerland Mit Muskelkraft unterwegs, Grundlagendokument Martin-Diener Eva, 2008: Federal Office of Sport FOSPO, Federal Office of Public Health FOPH, Network HEPA Switzerland	2008

Marked "pedestrian safety islands" – Evaluation of the changing of the behaviour of pedestrians and drivers Markierte Fussgängerschutzinseln – Evaluation der Veränderungen im Verhalten von Zufussgehenden und Fahrzeuglenkenden Schweizer Thomas, Zürcher Tonja, Altherr Viktor, Steiner Rolf, Zoth Johannes, 2008: Fussverkehr Schweiz, Kt. Aargau BVU	2008
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Baden: Impact analysis about the footbridge over the Limmat river and the elevator on its end Baden: Wirkungsanalyse Limmatsteg und Promenadenlift Meyer Katharina, Regli Pascal, 2008: Fussverkehr Schweiz	2008
Accidents in "encounter zones" *(encounter zones: areas where the speed limit is 20 km/h and pedestrians have precedence)* Unfallgeschehen in Begegnungszonen Schweizer Thomas, Fasciati Janet, 2008: Fussverkehr Schweiz	2008
Pedestrian navigation in public spaces: needs assessment and sketch of solutions La navigation pédestre dans l'espace public: évaluation des besoins et esquisses de solutions GILLIERON Pierre-Yves, CHAZAL Véronique, DELAVY Thomas (TOPO-EPFL), FLAMM Michael (LASUR-EPFL), VON DER MUEHLL Dominique, RUZICKA-ROSSIER Monique (Chôros-EPFL)	2008

Enhancement of GIS through a process of formalizing the concept of pedestrian accessibility Valorisation des SIG dans une démarche de formalisation du concept d'accessibilité piétonne Lenoir Vincent, Master degree study, 2007: EPFL	2007
Conflict analysis in mixed traffic Konfliktanalyse beim Mischverkehr Dörnenburg Klaus (Sigmaplan), Forschungsauftrag 2001/542 SVI, 2007: Bundesamt für Strassen (Hrsg.), Bern	2007
Pedestrian and bicycle traffic on shared spaces Fuss- und Veloverkehr auf gemeinsamen Flächen Butz Marlène, Merkli Christoph, Schweizer Thomas, Thomas Christian, 2007: Fussverkehr Schweiz und Pro Velo Schweiz	2007
Burgdorf: Model city for walking and cycling. Final report 1996-2006 FuVeMo Fussgänger- und Velomodellstadt Burgdorf. Abschlussbericht 1996-2006 Renard Aline, Eggenschwiler Heidi, 2007: Stadt Burgdorf	2007
General evaluation of the model city for walking and cycling, Burgdorf Gesamtevaluation Fussgänger- und Velomodellstadt Burgdorf Frick Roman (INFRAS), Maibach Markus (INFRAS), Trageser Judith (INFRAS), Rindsfüser Guido (Emch+Berger), 2007: Bern	2007
Reflexions on a marketing approach for pedestrian and bicycle traffic. Methods to analyse, find strategies and create packages for promotion measures Überlegungen zu einem Marketingansatz im Fuss- und Veloverkehr. Methodik zur Analyse, Strategiefindung und Paketbildung von Fördermassnahmen Blumenstein Andreas, Wälti Martin (Büro für Mobilität AG), Hasler, Paul (büro für utopien), KISSLING, P. (LP Ingenieure AG), MASCIADRI P. (Masciadri communication & design AG), 2007: Bern	2007
Pedestrian traffic, accident patterns, risk factors and prevention. Safety documentation Fussverkehr, Unfallgeschehen, Risikofaktoren und Prävention. Sicherheitsdossier. Walter Esther, Cavegn Mario, Scaramuzza Gianantonio et al. 2007: Beratungsstelle für Unfallverhütung	2007

Walking and cycling on common ground (shared space). Recommendations to judge suitability, introduction, organisation and design of shared spaces in the built-up area. Fuss- und Veloverkehr auf gemeinsamen Flächen. Empfehlungen für die Eignungsbeurteilung, Einführung, Organisation und Gestaltung von gemeinsamen Flächen in innerörtlichen Situationen Butz Marlène, Merkli Christoph, Schweizer Thomas, Thomas Christian, 2007: Fussverkehr Schweiz und Pro Velo Schweiz (Hrsg.)	2007
Human-powered mobility in the agglomeration programmes Der Langsamverkehr in den Agglomerationsprogrammen. Arbeitshilfe Rupp Marco Gaspoz-Fleiner Daniela, Foletti Francesca, Burkhalter Markus (ecoptima ag), 2007: Bundesamt für Strassen (Hrsg.), Materialien Langsamverkehr Nr. 112	2007
Human-powered Cities: Sustainable Trends in Health, Mobility and Urbanism - ANR SEST 05 VqM Des villes qui marchent : tendances durables en santé, mobilité et urbanisme - ANR SEST 05 VqM Winkin Yves, Lavadinho Sonia (Coord.), Ecole Normale Supérieure Lettres et Sciences Humaines de Lyon (ENS-LSH).	2007
The relation between the built environment and physical activity in the form of walking. Quantitative study of walking behaviour in two city districts in the city of Zurich La relation entre l'environnement construit et l'activité physique sous forme de déplacements à pied. Etude quantitative du comportement de marche dans deux quartiers de la ville de Zurich Schmid, Jonas, Institut de géographie, Faculté des géosciences et de l'environnement Université de Lausanne, 2006 ***City on the move*** Stadt in Bewegung. Die Fortbewegung aus eigener Muskelkraft in den Zürcher Stadtquartieren Witikon und Seefeld Schmid Jonas, Stadt Zürich, Präsidialdepartement 2007 ***Urban environment and physical activity behaviour. An analysis of objectively measured physical activity in Witikon and Seefeld, two districts of the city of Zurich*** Städtische Umwelt und Bewegungsverhalten. Eine Auswertung objektiv gemessener körperlicher Aktivität in den Zürcher Stadtquartieren Witikon und Seefeld Schmid Jonas, study commissioned by the Federal Institute of Sport, Magglingen, 2007 *=> All three publications are based on the same study*	2007 (2006)

Pedestrian Level of Service, a model to evaluate pedestrian spaces, a tool for urban space planning Pedestrian Level of Service: Un modèle d'évaluation pour l'espace piéton, un outil de planification pour l'espace urbain Baldi Gabrio, 2006, Mémoire de licence Institut de géographie Université de Lausanne	2006
Constitutional basis for slow transport modes Verfassungsgrundlagen des Langsamverkehrs. Teil 1 bzw. Teil 2 Keller Helen, Hauser Matthias, 2006: Bundesamt für Strassen (Hrsg.). Materialien Langsamverkehr Nr. 111	2006
Central areas without pedestrian crossings Fussgängerstreifenlose Ortszentren, Forschungsauftrag SVI 2002/001 Ghielmetti M., von Hebenstreit B., Jöri H., 2006: Bundesamt für Strassen, Bern	2006
Elderly people and road safety. From analysis to prevention Senioren und Verkehrssicherheit, Von der Analyse zur Prävention. Rytz Michael, Verkehrsclub der Schweiz	2006
Ways out of blind alleys – Signage of blind alleys, which are continuous for pedestrian and bicycle traffic Wege aus den Sackgassen – Signalisation von Sackgassen, die für Fuss- und Veloverkehr durchgehend sind Thomas Christian, Dischl Raphael, 2006: Fussverkehr Schweiz	2006

CO2 potential of slow transport modes, shift of short car trips CO2-Potenzial des Langsamverkehrs. Verlagerung von kurzen MIV-Fahrten Frick Roman, Wüthrich Philippe, Keller Mario (INFRAS), 2005: Bundesamt für Strassen ASTRA, Bern	2005
Registry of problem situations for slow transport modes. Report based on the experiences made in Langenthal. Relevant information on construction, implementation and follow-up of a tool to improve conditions for slow transport modes Problemstellenkataster Langsamverkehr. Erfahrungsbericht am Beispiel Langenthal Grob Daniel (GrobPlanung GmbH) und Büro für Mobilität AG, 2005: Bundesamt für Strassen ASTRA und Stadt Langenthal (Hrsg.), Bern und Langenthal	2005
New means to PROMote Pedestrian Traffic in cities (Swiss report) PROMPT: Neue Massnahmen zur Förderung des Fussverkehrs in Städten. Schlussbericht Schweiz Hüsler Willi, Schmid Ingrid, 2005: IBV, Bundesamt für Strassen	2005
Mobility of children and adolescents. A comparative evaluation of the microscensuses on travel behaviour 1994 and 2000 Mobilität von Kindern und Jugendlichen. Vergleichende Auswertung der Mikrozensen zum Verkehrsverhalten 1994 und 2000 Sauter Daniel, 2005: Im Auftrag des Bundesamtes für Sport, Magglingen	2005
Survey of pedestrian and cycle traffic and use of public space at the Limmatquai (riverfront street in Zurich) Erhebung des Fuss- und Veloverkehrs und der Aufenthaltsnutzung am Limmatquai. Zwischen-Erhebung Mai 2005 mit Vergleich zur Vorher-Situation. Sauter Daniel, 2005: im Auftrag der Stadt Zürich, Zürich	2005
Concept for statistical evaluation of Slow Mobility Konzept Langsamverkehrsstatistik Wüthrich Philippe, Frick Roman, Keller Mario (INFRAS), 2005: Bundesamt für Strassen ASTRA, Bern	2005
Surveying pedestrian and cycle traffic Erhebung des Fuss- und Veloverkehrs. SVI-Forschung 2001/503 Zweibrücken, Klaus, Sauter Daniel, Schweizer Thomas, Stäheli Andreas, Beaujean Katja, 2005, Rapperswil und Bern	2005
Enchantment engineering and pedestrian empowerment: the Geneva case Lavadinho Sonia, Winkin Yves, working paper drafted for the "walking seminar", Dpt of Anthropology, University of Aberdeen, September 12-15, 2005.	2005
Evaluating walking promotion policies with regard to mobility representations, appropriations and practices in public space Lavadinho Sonia, 2005, in Brebbia C.A., Wadhwa L.C. (ed), Urban Transport and the Environment in the XXIst century, vol. 77 of the WIT Transactions on the Built Environment, WITpress, Southampton, 909 p.	2005

The empty path. On the importance of the route to school. An analysis of children drawings Der leere Weg. Die Bedeutung des Schulweges. Eine Analyse anhand von Kinderzeichnungen Hüttenmoser Marco, 2004	2004

Efficiency of public investments into slow transport modes Effizienz von öffentlichen Investitionen in den Langsamverkehr Frick Roman, Wüthrich Philipp, Keller Mario, 2003, Bern	2003
Walk to shopping, a campaign to promote shopping on foot. A pilot project to test the feasibility of campaigns. Final Report Zu Fuss Einkaufen, Eine Kampagne zugunsten des Einkaufens zu Fuss, Schlussbericht Fussverkehr Schweiz in Zusammenarbeit mit dem Detailhandelsunternehmen Volg, 2003	2003

Measures to promote the acceptance of longer trips on foot and by bicycle Massnahmen zur Erhöhung der Akzeptanz längerer Fuss- und Velostrecken. Forschungsauftrag SVI 1998/088 Häberli Verena, Blumenstein Andreas, Wälti Martin, 2002: Bundesamt für Strassen, Bern	2002
Naturally mobile. Final report 1996-2001 of the Swiss model city for walking and cycling, Burgdorf Natürlich unterwegs. Schlussbericht 1996-2001 der Fussgänger- und Velomodellstadt Burgdorf Schiesser Hans Kaspar, Blumenstein Andreas, 2002: Burgdorf	2002
Mission Statement on Human-powered Mobility – Draft Leitbild Langsamverkehr (Entwurf) Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation(UVEK): 2002 Bern	2002

Elements of a strategy to promote pedestrian traffic. Expert report for the departmental master-plan (for) slow transport Elemente einer Strategie zur Förderung des Fussverkehrs. Expertenbericht für das Leitbild Langsamverkehr des Bundes Sauter Daniel, Bernet Regine, Schweizer Thomas, 2001: im Auftrag des Bundesamtes für Strassen, ASTRA. Bern	2001
Socio-economic effects of an expansion of pedestrian precinct in the city-centre of Geneva, final report Répercussions socio-économiques d'une extension du secteur à priorité piétonne dans le centre-ville de Genève, rapport final Boillat Patrick, Widmer Gérard, 2001: Observatoire universitaire de la mobilité Université de Genève	2001

Pedestrian areas as a trend? Strategies to introduce large pedestrian areas in Switzerland and Germany in comparison of the inner cities of Zurich, Berne, Aachen and Nurnberg Fussgängerbereiche im Trend? Strategien zur Einführung grossflächiger Fussgängerbereiche in der Schweiz und in Deutschland im Vergleich in den Innenstädten von Zürich, Bern, Aachen und Nürnberg Seewer Ulrich, 2000, Bern	2000
Evaluation of a new form of shared road spaces for pedestrians and vehicles in town centres, expert report Evaluation einer neuen Form für gemeinsame Verkehrsbereiche von Fuss- und Fahrverkehr im Innerortsbereich, Expertenbericht Grob Daniel, Von der Mühll Dominique, 2000, Bern	2000

The future belongs to pedestrian and cycle traffic. State of the art – measures – potentials – steps to a new orientation in traffic policy Die Zukunft gehört dem Fussgänger- und Veloverkehr. Stand des Wissens – Massnahmen – Potentiale. Schritte zu einer verkehrspolitischen Neuausrichtung Netzwerk Langsamverkehr (Hrsg.),1999: Bericht A9 NFP41. Bern => vgl. auch Materialienband (Tagung) sowie Populärfassung dazu	1999
Institutional obstacles to pedestrian and cycle traffic. Measures for a new traffic policy Institutionelle Hindernisse im Fuss- und Veloverkehr. Massnahmen für eine neue Verkehrspolitik. Sauter Daniel, 1999, Hrsg. Fussverkehr Schweiz. Zürich: Textidentischer Auszug aus Netzwerk Langsamverkehr (Hrsg.): "Die Zukunft gehört dem Fussgänger- und Veloverkehr", NFP41, Bericht A9, S. 241 - 347. Bern	1999

Typical behaviour and attitudes of elderly people on foot (pilot study) Typische Verhaltensweisen und Einstellungen von älteren Fussgängern, Pilotstudie Biner Caroline, Ewert Uwe, 1994, Berne	1994
Walking in the Canton of Zurich Zu Fuss im Kanton Zurich Lanz Peter, Hartmann Markus, 1994: Amt für Raumplanung des Kantons Zurich	1994

Pedestrian traffic in the city centre of Bern, Final report Fussgängerverkehr Berner Innenstadt, Schlussbericht Aerni Klaus, Häfliger Edith et al., 1993: Geographisches Institut der Univ. Bern	1993
Indicators describing pedestrian traffic Indikatoren im Fussgängerverkehr. SVI Forschungsauftrag 45/90 Greuter Beat, Häberli Verena, 1993: Bundesamt für Strassenbau. Zürich	1993
Technical aspects of walking. Pedestrians in view of their technical transport technical characteristics (bibliography) Transporttechnik der Fussgänger, Transporttechnische Eigenschaften des Fussgängerverkehrs (Literaturauswertung) Weidmann Ulrich, 1993: Schriftenreihe des IVT Nr 990, Zürich	1993

The slow city, relevance, attractiveness and appropriation of pedestrian amenities. A system analysis Die Langsamverkehrs-Stadt. Bedeutung, Attraktion und Akzeptanz der Fussgängeranlagen. Boesch Hans, 1992: Arbeitsgemeinschaft Recht für Fussgänger (Hrsg.). Zürich.	1992

How men was adapted to traffic. Education and disciplining of pedestrians through traffic in Switzerland between 1900 and 1960 Wie der Mensch dem Verkehr angepasst wurde. Erziehung und Disziplinierung der FussgängerInnen durch den Verkehr in der Schweiz von 1900 bis 1960 Hättenschwiler Diego, 1990: Seminararbeit an Historisches Institut der Universität Bern	1990

The pedestrian as passenger Der Fussgänger als Passagier Boesch Hans, 1989, ORL-Bericht Nr 73, Zurich	1989

The pedestrian as customer. Observations on the complex of demographic changes, distances on foot, customers density, car park offer and public transport Der Fussgänger als Kunde, Beobachtungen zum Komplex Bevölkerungsbewegung, Fussgängerdistanzen, Kundendichte, Parkplätze und öffentlicher Verkehr Boesch Hans, 1988: ORL-Bericht Nr. 58, Zürich	1988

B Reports <u>in</u>directly linked to walking (selected according to relevance)	Year of publication
Analysis - Historical development of traffic accident statistics and the present state of traffic safety in the city of Zurich Analyse – Es hat gekracht – Historische Entwicklung der Verkehrsunfallzahlen und heutiger Stand der Verkehrssicherheit in der Stadt Zürich Brucks Wernher, Baster Mauro, 2010: Stadt Zürich	2010
Leisure Traffic in Urban Areas Freizeitverkehr innerhalb von Agglomerationen / Trafic de loisirs dans les agglomérations SVI Research Report 2004/074 Hochschule Luzern – Wirtschaft, ISOE, Frankfurt am Main, Interface Politikstudien, Luzern	2008
Built environment and physical activity Gebaute Umwelt und körperliche Aktivität Schad Helmut, Ohnmacht Timo, Sonderegger Roger (Hochschule für Wirtschaft Luzern, HSW) and Sauter Daniel (Urban Mobility Research, Zürich), 2008: Luzern	2008
There and back – Traffic flow in the city of Zürich Hin und zurück - Verkehrsströme in der Stadt Zürich Misteli Hans-Peter (Tiefbauamt Stadt Zürich), Villiger Simon (Statistik Stadt Zürich), 2008: Stadt Zürich	2008
The contribution of good public spaces to social integration in urban neighbourhoods Integrationspotenziale im öffentlichen Raum urbaner Wohnquartiere. Sauter Daniel, Hüttenmoser Marco, 2007: Forschungsprojekt im Rahmen des Nationalen Forschungsprogramms „Integration und Ausschluss“ (NFP51) des Schweizerischer Nationalfonds mit Unterstützung des Bundesamtes für Sport, BASPO. Zürich	2007
Transport related health impacts – costs and benefits with a particular focus on children. Topic report physical activity. Contribution to the UNECE-WHO Pan-European Programme for Transport, Health and Environment – THE PEP Martin Brian, Martin-Diener Eva, Balandraux-Olivet M., Mäder Urs, Ulrich Ursula (eds), 2006: Swiss Federal Offices of Sports and Public Health, Magglingen and Bern	2006
Health-effective physical activity. Reference document Gesundheitswirksame Bewegung. Grundlagendokument Eva Martin-Diener, Bundesamt für Sport Magglingen, BASPO (Hrsg.), 2006, in Zusammenarbeit mit Bundesamt für Gesundheit BAG, Gesundheitsförderung Schweiz, Netzwerk Gesundheit und Bewegung Schweiz	2006
Elderly people and road safety Senioren und Verkehrssicherheit. Rytz Michael, 2006: VCS Verkehrsclub der Schweiz (Hrsg.), Bern	2006
Space-time frames of mobility Les territoires de la mobilité – L’aire du temps Luc Vodoz, Barbara Giauque Pfister, Christophe Jemelin (éd. sous la direction de), 2004: PPUR, Lausanne	2004
Traffic calming in built-up areas: new regulations, many possibilities, simple implementation Innerorts Verkehrsberuhigung: neue Regelungen, viele Möglichkeiten, einfache Umsetzung Bundesamt für Strassen (Federal Roads Office, FEDRO), 2003, Berne	2003

And yet they still move! Physical inactivity during childhood: causes and effects Und es bewegt sich noch! Bewegungsmangel in der Kindheit: Ursachen und Auswirkungen Hüttenmoser Marco, Degen-Zimmermann Dorothee, 2002: in: und Kinder Nr 70, Marie Meierhofer Institut für das Kind, Zurich	2002

Towards a Charter Vision Zero. Draft for a new basis of Swiss traffic safety policy in the 21 century Charta Vision Zero. Entwurf für eine Grundlage der Verkehrssicherheitspolitik der Schweiz im 21. Jahrhundert Fussverkehr Schweiz, 2000, Zürich	2000
Towards an urbanism of short distances, Coordinating urban development and transport Das Gute liegt so nah, Bausteine für einen gemeinsamen Weg von Siedlungs- und Verkehrsentwicklung Vers un urbanisme de la proximité, Coordonner développement urbain et transports Bonanomi Lydia, Ecole polytechnique fédérale de Lausanne, 2000	2000

Car free households. Their mobility and the effects on traffic planning and transport policies Autofreie Haushalte. Ihre Mobilität und die Folgen für Verkehrsplanung und Verkehrspolitik Müller, Hannes (Müller & Romann), Davatz Felix (Landert, Fragago, Davatz und Partner) et al., 1999: Bericht A2 des NFP 41, Bern	1999
More places for sitting instead of parking. Quantitative and qualitative aspects of women's mobility using the example of the city of Zurich Sitzplätze statt Parkplätze. Quantitative und qualitative Aspekte der Mobilität von Frauen am Beispiel der Stadt Zürich Meyer Heidi, 1999: Zürich	1999

More security in public space Mehr Sicherheit im öffentlichen Raum Glatt Anita, Oswald Bettina, (year unknown), Basel	(…)
Wonderful country life? Comparisons between urban and rural neighbourhoods and their significance for the everyday life and development of children Kein schöner Land. Ein Vergleich städtischer und ländlicher Wohnumgebungen und ihre Bedeutung für den Alltag und die Entwicklung der Kinder. Hüttenmoser Marco, 1996: in: „und Kinder" Nr. 54, S. 21-50, März 1996.	1996

Living space for children. Empirical research into the importance of the living surroundings for the everyday life and development of children Lebensräume für Kinder. Empirische Untersuchungen zur Bedeutung des Wohnumfeldes für den Alltag und die Entwicklung der Kinder Hüttenmoser Marco, Degen-Zimmermann Dorothee, 1995: Zürich	1995

Time for streets. Towards a new street space design Le temps des rues. Vers un nouvel aménagement de l'espace rue Bonanomi Lydia, 1990, IREC, GCR, Lausanne	1990

3.3 Current research projects

Pedestrian Crossing (Principles) (VSS2008/302) Fussgängerstreifen (Grundlagen) (VSS2008/302) Belopitov Ivan (SNZ, Ingenieure und Planer AG, Zürich)
Crossings in point for pedestrian and bicycle traffic: Projecting (VSS2008/203) Punktuelle Querungen für den Fussgänger- und leichten Zweiradverkehr: Projektierungsgrundlagen (VSS2008/203) Pestalozzi Christian (Pestalozzi & Stäheli, Ingenieurbüro Umwelt und Verkehr, Basel)
Accessibility of traffic area for persons with disabilities (VSS2008/201) Behindertengerechter Verkehrsraum (VSS2008/201) Pestalozzi Christian (Pestalozzi & Stäheli, Ingenieurbüro Umwelt und Verkehr, Basel)
Crossings for pedestrian traffic at road junctions (VSS1999/114) Führung des Fussgängerverkehrs im Bereich von Knoten (VSS1999/114) Schönenberger-Meier Katrin (Basler & Hofmann Ingenieure und Planer AG, Zürich)
Traffic from the children's point of view (SVI2004/006) Der Verkehr aus Sicht der Kinder (SVI2004/006) Kaufmann-Hayoz Ruth (IKAÖ, Universität Bern), Steiner Rolf (verkehrsteiner, CH-3008 Bern)
Alternatives to pedestrian crossings in limited speed zones 30 km/h (SVI2004/073) Alternativen zu Fussgängerstreifen in Tempo 30-Zonen (SVI2004/073) Ghielmetti Marco (Ingenieur- und Planungsbüro Ghielmetti, 8400 Winterthur), Pestalozzi & Stäheli (Ingenieurbüro Umwelt und Verkehr, Basel), Steiner Rolf (verkehrsteiner, CH-3008 Bern)
Zones of encounter: Recommendations for planning and realization (SVI2006/002) Begegnungszonen: Empfehlungen für die Planung und Umsetzung (SVI2006/002) Steiner Rolf (verkehrsteiner, CH-3008 Bern)
Slow moving traffic, Part 2: Slow moving traffic from the middle of the 19th century Der Langsamverkehr, Teil 2: Langsamverkehr seit der Mitte des 19. Jahrhunderts Schiedt Hans-Ulrich (Via Storia - Zentrum für Verkehrsgeschichte Universität Bern)
The future of walking: perceptions, infrastructure design and policy-making Swiss contribution to COST Action 358 "Pedestrian Quality Needs" Sauter Daniel, Von der Mühll Dominique, Lavadinho Sonia
Basics of pedestrian traffic (planning) Grundlagen für den Fussverkehr Grob Daniel (Grob Planung, Herzogenbuchsee)
The pedestrian in the "in-between town" – improving pedestrian accessibility to facilities generating large traffic volumes *(shopping centers, leisure facilities, hospitals, multimodal interfaces)* Le piéton dans l'entre-deux des villes: des IGT plus accessibles aux piétons Ruzicka-Rossier Monique, von der Mühll Dominique (Chôros-EPFL)
Education and training on slow mobility in Switzerland: analysis and recommendations *Bildungslandschaft Langsamverkehr Schweiz, Analyse und Empfehlungen für das weitere Vorgehen.* Haering Barbara, Lother Mirco, econcept, Zürich
Guidebook to pedestrian network planning *Netzplanung für den Fussverkehr – Handbuch* Regli Pascal, Schweizer Thomas, Fussverkehr Schweiz, Zürich

3.4 Websites

Some selected websites with information on walking and related issues

www.langsamverkehr.ch (German and French) Official website of the Road Federal Office : webpages dedicated to slow mobility (walking and cycling). See also a number of links there
www.fussverkehr.ch (German and French, partially in English) Website of Pedestrian Mobility, Swiss Pedestrian Association
www.rue-avenir.ch (French only) Website of the Consulting Group “Rue de l’Avenir“ (exists since 1981), promoting traffic calming, walking and cycling, public spaces more favourable for pedestrians and cyclists, livable streets for children in the French speaking part of Switzerland
www.moderazionetraffico.ch (Italian only) Website of the Consulting Group “Gruppo per la moderazione del traffico nella Svizzera italiana GMT-SI” (exists since 1981), promoting traffic calming, walking and cycling, public spaces more favourable for pedestrians and cyclists, livable streets for children in the Italian speaking part of Switzerland
www.ville-ge.ch/geneve/plan-pietons/index.html (French) Official website of the city of Geneva : webpages dedicated to the Pedestrian Master Plan (“Plan piétons”).
www.mobilitaetskultur.ch (German) Official website of the city of Zurich: webpages dedicated to transport policy, promoting a new mobility culture (walking: see ”Zu Fuss“)
www.modelcity.ch (German, part. French) Website dedicated to Burgdorf as „Modelcity for pedestrians and cyclists“ (many actions and innovations since 1996).
www.kindundumwelt.ch (German) Website of the ‘Forschungs- und Dokumentationsstelle Kind und Umwelt’ *(Research and Documentation Center Child and Environment),* a private center dedicated to different aspects concerning children (development, security, child and traffic)
www.pedibus.ch (French) Website dedicated to “walking bus” actions (in the French part of Switzerland)
www.begegnungszonen.ch (German) *www.zonederencontre.ch* (French) Begegnungszonen/Zones de rencontre are “home zones” (20 km/h, priority for pedestrians) that can be established on streets in districts or in city-centers (shops, activities). Website created by Pedestrian Mobility-Swiss Pedestrian Association and Rue de l’Avenir at Road Federal Office’s request. Many examples in Switzerland.
www.verkehrsclub.ch > Verkehrssicherheit or > Fussverkehr Website in German and French of the Swiss Transport Club (alternative car club)

3.5 Magazines and journals

These magazines focus mainly on walking and related issues. Other regular publications such as journals for planners and engineers only deal marginally with pedestrians and are, therefore, not listed here.

Fussverkehr (german)

Quarterly review of the Swiss Pedestrian Association

Different topics in each issue. They can be downloaded from the organisation's website

www.fussverkehr.ch

Rue de l'Avenir (french)

Review of the Groupe conseil romand pour la modération de la circulation (GCR) / Rue de l'Avenir since 1999 *(Consulting Group in Traffic Calming)*

4 in a year since 1984, 8 pages

Contents: articles on traffic calming, examples of street renovations, measures in favour of pedestrians and cyclists, vulnerable users in traffic

Print run: 2000 (subscription)

Recent themes/articles on pedestrians and walking *(translated titles)*:

3/2009 How to improve accessibility to shopping centers for cyclists and pedestrians

1/2009 Safe public space for elder people and handicapped people

4/2008 Chambéry, the town of pedestrian

2/2008 Built environment and health, move forward together

1/2008 Walk21 in Toronto: Putting pedestrian first

3/2007 How to share space between pedestrians and cyclists

1/2007 Promoting walking, Presentation of project PROMPT, synthesis of results

4/2006 Towards removal of pedestrian crossings?

3/2006 Pedestrian and agglomeration projects

2/2006 Security of children in traffic: whose responsibility?

1/2006 Sidewalks shared with cyclists: problems and solutions

4/2005 „Zones de rencontre" *(approx. Home zones: see websites)*: results after three years

3/2005 Pedestrian crossings: „Achilles' heel" in pedestrian networks

1/2005 Pedestrians and cyclists: what's new in Europe?

www.rue-avenir.ch

La Contrada (italian)

Review of the Gruppo per la moderazione del traffico della Svizzera italiana (GMT-SI) *(Equivalent of Rue de l'Avenir for the italian part of Switzerland)*

Contents: traffic calming, examples of street renovations, measures in favour of pedestrians and cyclists, vulnerable users in traffic

Some issues can be downloaded: *www.moderazionetraffico.ch*; *gmt@swissonline.ch*

VCS-Magazin (german and french)

Review of the Association transport et environnement (ATE) *(Association Transport and Environment)* NGO aging for more durability in transport

Former named Journal AST (first in October 1979), then Journal ATE, between 2001 and 2008: 'Leonardo'.

5 (soon 6) in a year, 32 pages.

Print run: 92'000 (17'000 in French, 75'000 in German)

www.vcs.ch (german) *www.ate.ch* (french)

4. Legal framework for walking

4.1 Intoduction

Laws not only regulate individual behaviour of citizens in their different roles, for instance as road users, but also determine the distribution of power between state levels and institutions. The scope of their possible interventions to promote walking is highly dependent on this; and so is the allocation of financial support.

This chapter gives a glimpse on some laws ruling the powers to provide for (better) walking conditions in Switzerland. It is an overview summarising the most crucial elements without going into details[7].

While the legal framework is quite complex and can not always be directly linked to certain outcomes, this chapter tries, nevertheless, to look at the basic legal background as well as the implementation and outcome. This implies some personal assessments which are not all based on research – due to lack of such studies. For legal specialists there is, however, a detailed account available about the constitutional basis of walking and cycling in Switzerland, established by the lawyers Helen Keller and Matthias Hauser in 2006 (see literature list).

4.2 The legal system in the federalist Swiss setting

The legal framework and its effects can not be properly assessed without looking at the distribution of powers and responsibilities. In the Swiss federalist system, the distribution of tasks and authorities between the three main levels of government, federal, cantonal and municipal, differs according to field concerned. Constitutionally there is no direct link between the federal and the municipal level; all responsibilities and tasks are intermediated by the cantons. As in all federalist systems each level has a strong sense of autonomy and self reliance, regardless of the fact that this freedom is often fictional. Generally three types of legally distributing tasks can be distinguished:

1. There is no law or responsibility on the federal level. Responsibilities lie with cantons and local governments exclusively. Examples: public school, road building (except national motorways).
2. The federal level establishes a framework law. The cantons then have to create their own laws within the federal framework (so called application laws). The cantons themselves can delegate the tasks and responsibilities fully or partially on to the local authorities. Examples: land-use planning, footpaths and hiking trails.
3. The federal government enacts the complete law and the rules of application – the cantons and municipalities then have to apply it as it stands. Examples: traffic regulations, environment protection.

The subchapters below will show how this task distribution affects the legal implementation of provisions for walking.

As a so called ‘direct democracy’, Switzerland gives its citizens a number of participative rights beyond elections. The instruments used and the political process which creates the laws has effects on the type of the legal framework, its perception and implementation. The main participative instruments are the people’s initiative and the referendum[8]. They are available to citizens on all levels: municipal, cantonal and federal but the procedures can differ. On the federal level, for example, 100,000 citizens can demand

7 This chapter is a revised, updated and enlarged version of a similar chapter written for the COST Action C6 by Lydia Bonanomi and Daniel Sauter 2001.

8 The following information is based on the yearly published brief guide to the Swiss Confederation by the Federal Chancellery (2010).

a constitutional change with their signature on a people's initiative[9]. The initiative will then be debated in parliament which can either recommend to support or to reject it or it can submit a counter-proposal. After the parliament it is up to the citizens to vote on it[10]. Experience shows that most initiatives in the last 150 years have been rejected in the popular vote[11]. However, initiatives usually do have the effect that an issue is brought into the public and political arena which otherwise would not be the case. Often some sort of compromise is sought in parliament between the demands of the initiative and the current situation[12]. Public debate, campaign efforts and accompanying media attention can change the view of the public on an issue[13]. And even if an initiative is turned down but has achieved a substantial minority of votes (between 40-49% positive votes) it will remain in the public realm and the group who launched it will be strengthened. On the other hand, if the result is bad, an initiative can also backfire and 'kill' an issue.

In a number of circumstances parliamentary decisions need to be submitted to a popular vote. Such a referendum is compulsory for all amendments to the Constitution and for membership to some international organisations and institutions (e.g. joining the European Union).

Some amended or new laws, after having been approved by parliament, are only to be put to the vote if an optional referendum is sought. In this case, a popular ballot is held if 50 000 citizens so request. The signatures must be collected within 100 days of a decree's publication.

While a people's initiative usually plays a more progressive role and is regarded as a driving force behind direct democracy, the optional referendum plays a more conservative role since it aims to preserve the existing situation. The optional referendum is therefore often described as a "brake" put on to block or delay amendments.

Examples of issues submitted to a popular vote (federal level) and decisions in the field of transport

Popular initiatives	**Date**	**Result**
For twelve Sundays without cars or planes	28.5.1978	Rejected
For a network of footpaths and hiking trails	18.2.1979	Counter-proposal accepted
For the protection of the Alps against lorry transit	20.2.1994	Accepted
Reducing motorised traffic by 50 per cent	12.3.2000	Rejected
"Streets for Everyone" – generally 30 km/h in built-up areas	4.3.2001	Rejected
For one Sunday per season without cars – a four year test	18.5.2003	Rejected
Laws* and parlimentary decisions		
Law on land-use planning	13.6.1976	Rejected
Decision to levy a fee on lorry traffic	24.6.1983	Accepted
Decision to charge the use of motorways	24.6.1983	Accepted
Decision to build a new railway tunnel through the Alps	27.9.1992	Accepted
Law on the charging of lorry traffic (according to kilometers and weight)	27.9.1998	Accepted

* Concerning the laws, the vote was due to an optional referendum

9 A federal initiative cannot propose a new law, only the introduction of a new article into the constitution. The signatures have to be collected within 18 months.

10 Since 1987, the possibility of a double "yes" vote has existed in ballots on people's initiatives: voters may approve both the initiative and the counter-proposal. A deciding question determines which of the two texts will enter into force if both secure a popular majority and a majority of the cantons.

11 On the federal level only 17 initiatives have been accepted since 1891 although hundreds have been launched during this time.

12 As mentioned above, in some instances a counter-proposal is submitted. But more often parliament tries to change existing laws in the direction of the initiative's demands to 'absorb' some of its impact. This is called an 'indirect counter-proposal' which is usually easier to achieve since it will not have to be subjected to a popular vote.

13 Of course the available budget will influence to a large degree the campaign. If financially powerful lobbies are behind a campaign (for or against an initiative), it is very difficult for other viewpoints to make themselves heard.

4.3 Footpaths and hiking trails

The federal law on footpaths and hiking trails (FWG) is the only legal basis directly related to walking in Switzerland, and therefore instrumental. It came about as the result of a counter-proposal to a people's initiative for a constitutional amendment which was accepted in 1979 with 78% popular support[14]. The initiative was started because the networks of walking and hiking paths outside and inside built-up areas were increasingly being cut apart by newly built motorways and roads and made unsafe and unattractive by increasing motor traffic.

Based on article 88 of the Constitution[15], a law was introduced in 1987 which requires the cantons to plan, build and maintain a network of footpaths which interlink residential areas, work places, kindergartens and schools, shops, public transport stops, public institutions and recreation areas (see Table 2).

The FWG is a typical framework law meaning it only states the basic tasks the cantons have to fulfil and leaves it up to them how they want to do that and apply the law[16]. Most cantons have delegated the tasks further to the local authorities. Furthermore the law makes no clear quality prescriptions. This leaves many interpretations open, e.g. when it comes to wordings like: "appropriately linked footpaths" (art. 2) or "as safely as possible" (art. 6). The openness of a framework law has the advantage that measures can be adapted to the local needs. But if the motivation or political pressure is missing, the openness of the law permits doing almost nothing.

A study completed in 1996 (see Sauter/Bernet 1996) shows that the cantons have chosen many different ways to legally implement the framework law. The results, however, don't depend on the type of legal implementation but are rather based on the determination by individuals and pressure groups.

While the law has been adopted and translated into most cantonal and municipal legal frameworks, only larger cities also have developed adequate walking plans and strategies. Until now, the law has had only a limited effect on the ground, i.e. on the actual physical environment. The situation is quite good in cities, in densely populated and built-up areas but not so much in sub- and periurban municipalities. The law can serve as a support for committed administrations but a lot is left to political will. Institutional obstacles combined with a lack of political will rather than legal or technical problems are the reasons why the law has not reached its full potential.

4.4 Traffic regulations and road norms

Traffic regulations are set on the federal level and based on the Vienna Convention on Road Traffic and Road Signs and Signals from 1968. The only main difference between the national regulation and the Convention lays in the yellow colour for zebra-crossings (instead of the standard white). Traffic regulations have a long history and reflect the distribution of power and space over longer periods of time. A historical analysis of how pedestrians were treated in the Swiss legal system is given in the following publications: Nussbaum 1989, Sauter 1999 and Merki 2002. The following paragraphs show the current status.

Regulating behaviour of pedestrians and other road users

There are a number of paragraphs regulating the behaviour of pedestrians and other road users in the traffic code. One of the most relevant regulations concerns crossings. Pedestrians have to cross the carriageway on the shortest distance and use a pedestrian (zebra) crossing if there is one within 50 meters.

14 The people's initiative was retreated after parliament submitted a counter-proposal to avoid splitting the yes-votes (at that time a double 'yes' was not possible).

15 Article 88 of Constitution: Footpaths and Hiking Trails: 1 The Confederation shall establish principles on networks of footpaths and hiking trails. 2 It may support measures of the Cantons to establish and keep such networks, and to coordinate them. 3 In fulfilling its tasks, it shall take into account networks of footpaths and hiking trails, and shall replace paths and trails that it must close.

16 A detailed account of the implications of this fact is given by Keller and Hauser 2006

Federal Law on Footpaths and Hiking Trails (Fuss- und Wanderweggesetz, FWG)

Art 1 Purpose

This law is aimed at the planning, building and maintenance of a continuous network of footpaths and hiking trails.

Art 2 Network of Footpaths

1. Footpath networks are traffic connections for pedestrians, usually in settlement areas.
2. They comprise appropriately interlinked footpaths, pedestrian areas, residential roads (=Wohnstrassen/woonerfs) and similar facilities. Sidewalks and zebra crossings may serve as links.
3. Footpath networks make accessible and in particular interconnect residential areas, work places, kindergartens and schools, stops of public transport, public institutions, recreation areas and shops.

Art 3 Network of Hiking Trails

(...)

Art 4 Planning

1. The Cantons provide that
   a. existing and planned footpaths and hiking trails are indicated in plans;
   b. the plans are checked regularly and updated if necessary.
2. (...)
3. The parties concerned, as well as the interested organisations and federal offices, are to participate in the planning.

Art 6 Building and Maintenance

1. The Cantons ensure that
   a. footpaths and hiking trails be built, maintained, and marked by signs;
   b. these paths may be used freely and as safely as possible;
   c. public access be guaranteed by law.
2. The footpaths and hiking trails must be taken into consideration when other tasks are being fulfilled.

Art 7 Replacement

1. If networks of footpaths and hiking trails, or parts of them, have to be closed, they must be suitably replaced by existing or new paths, in consideration of the local conditions.
2. Footpaths and hiking trails are to be replaced, particularly if
   a. they are not freely passable any more;
   b. they are dug away, covered or otherwise obstructed;
   c. considerable sections of them are frequently used by motor traffic or opened to the public motor traffic;
   d. considerable sections of them are fitted with surfaces unsuitable for pedestrians.
3. The Cantons regulate the procedures for the closing of paths and decide who is obliged to provide replacement.

While pedestrians do not have any right of way outside marked or light-signalled crossings they do have priority on a pedestrian crossing (while already on the crossing or are about to use it). However they may not step into the carriageway suddenly[17]. The regulations do not apply at crossings regulated by traffic light signals or by an authorized official. Car drivers on the other side have to allow pedestrians to cross the carriageway in an appropriate manner. At pedestrian crossings they have to drive carefully and have to stop and let them pass if they are already on the crossing or about to use it. Particular care is demanded in the presence of children and elderly persons.

Other articles in the traffic code prescribe pedestrians to use the sidewalk. Where such a provision is missing they have to walk on the left road curb in single file. The traffic code is mainly written from a point of view of motorized traffic. Symptomatically pedestrians are mentioned under “rules for other traffic” together with horse riders and cow drovers.

[17] These refined regulations, introduced in 1994, improved the position of pedestrians slightly but remain a constant subject of public debate ever since. As long as the speed limits on major roads stay at 50 km/h, zebra crossings remain a dangerous place for pedestrians.

Regulating street environment (speed limits, traffic calming etc.)

The federal traffic code also contains regulations regarding the general speed limits (e.g. in built up areas: 50 kph) as well as the requirements for introducing traffic calming: implementation of zones with speeds of 30 kph or so called encounter-zones (speed limit of 20 kph and priority for pedestrians). The design of the streets, however, is regulated in the road norms (see below).

Encounter zones can be introduced in residential neighbourhoods as well as in central business districts outside major streets. Since the introduction of this new regulation in 2002, many such central zones have been established – mainly in cities and small towns (e.g. in front of train stations or in old shopping districts). Some streets with an encounter-zone regulation in inner city streets carry more than 10'000 vehicles a day and are also used by buses (see also chapter 6 for more details and examples).

Besides speed regulations the traffic code also regulates the type and use of road signs and markings[18], the technical requirements of vehicles (cars, bicycles, trucks etc.) and insurance requirements.[19]

Road norms

The road norms are established by the Swiss Association of Road and Transportation Experts (VSS, Vereinigung Schweizerischer Strassenfachleute), which is a private professional association of traffic engineers and other experts. The norms play an important part in the planning and design of roads. They don't have the status of laws, but cantonal laws and municipal rules point out that planners have to base themselves and/or take their inspiration from these norms. They cover all aspects from planning to traffic management, engineering tasks to materials used in road building.

In the past seven years a number of norms have been developed dealing for the first time with walking (and cycling). Among these are norms for the installation of different types of pedestrian crossings (over an extended space, at specific points etc.), for traffic calming, the design of streets according to their functions et cetera. The past years have seen a number of improvements in the norm system to better provide for walking. However, the main focus is still on motorized transport and those needs often overrule the ones of walking. This is particularly true for the norm on zebra crossings where the interests of motorists are by far higher valued than those of pedestrians.

4.5 Equality of persons with disabilities

For a long time the needs of people with disabilities have been neglected. In 2004, for the first time, a law was introduced to remove discriminations again persons with disabilities[20]. Its main focus is to improve accessibility to public transport (vehicles, stops etc.) as well as public and private buildings (residential, workplaces). In the latter case, the scope is limited to new private buildings with more than eight apartments and more than 50 workplaces. The measure also has to be economically feasible and in proportion to the value of the building. As a result of these restrictions, the effects have been minimal.

The picture is improving for public transport. Although public transport companies have been given 20 years time to comply with the new regulations (ticketing and communication systems have to be adapted within 10 years) many of them have started to introduce accessible vehicles and design-for-all provisions.

In 2003 guidelines on how to create a network of footpaths accessible to persons with disabilities have been published (Schmidt, Manser 2003). They give a detailed account of measures necessary to allow persons with disabilities a more independent mobility. A number of cities have started to lower curbs and take other measures against the physical exclusion of persons with disabilities, but a lot remains to be done.

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18 The Swiss Pedestrian Association recently proposed a new sign for blind alleys to indicate to pedestrians if there is a walking path which continues at a dead-end street (see Thomas/Dischl 2006; details in chapter 6 and the list of publications)

19 For an overview of the powers on the national level in these areas see Keller/Hauser 2006

20 Bundesgesetz über die Beseitigung von Benachteiligungen von Menschen mit Behinderung (Behindertengleichstellungsgesetz BehiG)

4.6 Spatial and urban planning

Land-use planning is at the core of any action aiming to promote walking since planning influences the sites for dwellings, shops, offices etc. and, therefore, establishes distances between places. Taking measures on roads in favour of pedestrians is not sufficient when commuting distances become too long. Thinking in terms of accessibility rather than mobility (kilometres travelled), it becomes evident that the pedestrian is the measure of urban development. An optimum accessibility is achieved for everyone if we all can get to places on foot. This model does not exclude any means of transport – contrary to the model which puts the car in the centre, thus, excluding people not owning a car. As a result, a pedestrian-oriented model leads to the introduction of dense urban structures in favour of public transport (see Bonanomi 2001, p. 133)

Unfortunately this suggested model and thinking is not (yet) part of the legal framework in terms of spatial and urban planning. The role of the federal government is very limited in this field. The basis is (again) a framework law leaving it to the cantons and municipalities to actually provide for adequate land-use planning. The autonomy of the cantons and municipalities is quite extensive. It is, for example, in their hands to define the size of the building zones, thus, to define the extent of density or sprawl. The federal law on spatial planning which was introduced in 1979 only defines the main objectives and principles as well as the type of plans that have to be established[21]. But it does, at least in principle, oblige private developers and administrations on all levels to provide equally for walking (as for other means of transport). The federal government also could demand more in terms of basic requirements for accessibility than currently done (see Keller/Hauser 2006, p. 38) but politically this has not been successful yet.

While the objectives and the long list of principles which should be adhered to are very useful and relevant, their cantonal and local implementation is another story which often does not deliver the declared results (see also next chapter 5).

4.7 Environmental protection (climate, air, noise, water, soil)

The federal law on environmental protection from 1983 is, at least in theory, still exemplary. It aims at "protecting humans, animals and plants and their habitats from harmful and annoying impacts, and in particular conserving the biological diversity and fertility of soils." The constitutional bases of the law comprise the articles 73 and 74 which state the need to strive for a sustainable development[22].

The protection of the environment is officially based on the “polluter pays” and the “remedy at the source” principles[23]. However, the reality often looks quite different. Limits for air pollution, for example, are often exceeded without any interventions by the authorities; noise protection is not dealt with at the source but at the place of impact, for example, by installing new windows. The time required for implementing measures has been stretched far into the future. Walking and sojourn on main roads stays unattractive not only for reasons of road danger but also for the noise impact and pollution.

While the legal clout on the federal level could go be even firmer (based on the wording in the constitution), there are some cantons that base their strategies to promote walking at least to some degree on the law on environmental protection (see Keller/Hauser 2006, p.49).

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21 The law requires that measures be taken during the planning process which "protect the natural basis of life, such as soil, air, water, forest and landscape, to create a harmonious built-up environment, favourable to living and economical activities, to foster social, economical and cultural life and to promote a judicious decentralisation of the urbanisation and the economy, to guarantee sufficient sources of supply in the country and the general defence of the country."

22 Art. 73 Sustainable Development: The Confederation and the Cantons shall strive to establish a durable equilibrium between nature, in particular its capacity to renew itself, and its use by man.

23 Art. 74 Protection of the Environment: 1 The Confederation shall legislate on the protection of man and the natural environment against harm and nuisance. 2 It shall ensure that such influences are avoided. The polluters shall pay for the costs of avoidance and removal. 3 The federal regulations shall be implemented by the Cantons, insofar as the statute does not reserve this for the Confederation.

A databank with about 70 indicators has been established to monitor progress and changes with regards to sustainable development in Switzerland (www.monet.admin.ch). However, walking is only considered in terms of its modal share (and this only in combination with cycling). Other indicators may relate to walking indirectly.

4.8 Health and sports

While the federal government has the obligation to take measures necessary to protect people's health there is no comprehensive legal basis for the prevention of illnesses. A proposal leading in this direction has been turned down in parliament a few years ago. Some funds for the promotion of healthier lifestyles are, however, collected as a levy on the health insurance fees of every citizen based on the Federal Health Insurance Act. This money is used by Health Promotion Switzerland for different activities to promote health, in particular for the promotion of active lifestyles, a healthy body weight and stress reduction (see chapters 5.8 and 5.9). There are, furthermore, some federal competences to create better provisions for sports. But in effect this is only relevant for making sport events and infrastructure accessible on foot and by bicycle.

On the cantonal and municipal level there are until now only isolated efforts to provide for better walking conditions. They are limited to promotion and not to change streets for healthy walking activities (see also chapter 5).

4.9 Financing and taxing

Funding for walking up till now has been limited to the municipal and to some degree to the cantonal level. This is about to change slightly. A new legal basis has recently been created to tackle the many traffic problems in the urban, suburban and periurban areas which are often not congruent anymore with the boundaries of cities and municipalities. A legal basis and special fund has been set up to pay for related infrastructure projects in the so called agglomerations (conurbations). It requires them to plan their infrastructure together, for the whole area and for all means of transport, which – as a result of a lot of lobbying – also includes walking and cycling (see for a detailed account of this new measure chapter 5 on policies).

Apart from this new funding source, walking provisions will still have to be mainly paid out of general municipal taxes. The federal government collects fuel taxes, the cantons motor vehicle taxes and the municipalities parking fees. Most of this money has to be, by law, reinvested into motorized transport. The funding mechanisms keep the vicious circle going: more money invested into car infrastructure means more car traffic which brings in more revenue which then can/must be… Against many declared policies and common sense, the state has to promote car use in order to get more funds to pay for new roads and maintaining existing ones (see for details on this Sauter 1999, 2001).

The declarations about sustainable development find their limits on these system mechanisms. If the "polluter pays" principle was actually implemented it would mean to allocate revenue collected from motorized traffic to improve walking conditions. But this does not happen (yet). Even provisions for walking which are only necessary to protect pedestrians from the negative effects of car traffic (e.g. crossing provisions, sidewalks, refuge in the middle of the road etc.) are paid out of general tax money and not by the car drivers[24].

The privileges for motorized traffic are also reflected on the individual level. As in most countries, Swiss employees can deduct from their taxes the costs for public transport or the kilometre costs for a car. It is not the people who walk to work, and thus put little strain on the publicly financed infrastructure or on the environment, who get rewarded, but rather those who put the biggest strain on facilities and nature.

[24] The exceptions here are negative effects of motorways on walking and hiking trails: The constitution allows financing over- and underpasses which become necessary due to construction of new motorways out of fuel taxes.

4.10 Overview of legal enactments relevant for walking

The table below gives an overview of the most relevant laws and regulations related to walking. The texts of these regulations are available in German, French and Italian only. With the exception of the Federal Constitution they are not translated into English. This is why only the German titles of the laws are given. All laws are systematically categorised (see SR numbers on the side) and can be accessed through the internet by using the following link www.admin.ch (=> Systematische Sammlung des Bundesrechts).

Overview of legal enactments relevant for walking (September 2010)

	SR = Systematische Sammlung des Bundesrechts (systematic collection of federal law)	**SR**
Bundes-Verfassung / Federal Constitution		
	Bundesverfassung der Schweizerischen Eidgenossenschaft Federal Constitution of the Swiss Confederation	101
Verkehrsrecht / Traffic laws and regulations		
SVG	Bundesgesetz über den Strassenverkehr	741.01
VRV	Verkehrsregelnverordnung	741.11
SSV	Signalisationsverordnung	741.21
	Verordnung des UVEK über die auf die Signalisation von Strassen, Fuss- und Wanderwegen anwendbaren Normen	741.211.5
	Verordnung über die Tempo-30-Zonen und die Begegnungszonen	741.213.3
VVV	Verkehrsversicherungsverordnung	741.31
	Unfallverhütungsbeitragsgesetz (inkl. Verordnung)	741.81
VTS	Verordnung über die technischen Anforderungen an Strassenfahrzeuge	741.41
VZV	Verordnung über die Zulassung von Personen und Fahrzeugen zum Strassenverkehr	741.51
OBG	Bundesgesetz über Ordnungsbussen im Strassenverkehr	741.03
OBV	Verordnung über Ordnungsbussen im Strassenverkehr	741.031
	Durchgangsstrassenverordnung	741.272
EBG	Eisenbahngesetz	742.101
EBV	Verordnung über Bau und Betrieb der Eisenbahnen (Eisenbahnverordnung)	742.141.1
Übrige Rechtserlasse / Other laws and regulations		
Menschen mit Behinderung / People with disabilities		
BehiG	Behindertengleichstellungsgesetz: Bundesgesetz über die Beseitigung von Benachteiligung von Menschen mit Behinderungen	151.3
Umweltschutz / Environment Protection		
USG	Umweltschutzgesetz	814.01
NHG	Natur- und Heimatschutzgesetz (inkl. Verordnung)	451
LSV	Lärmschutzverordnung	814.41
LRV	Luftreinhalteverordnung	814.318.142.1
Raumplanung / Spatial Planning		
RPG	Raumplanungsgesetz (inkl. diverse Verordnungen)	700
FWG	Fuss- und Wanderweggesetz (inkl. Verordnung)	704
Finanzierung / Financing		
IFG	Infrastrukturfondsgesetz: Bundesgesetz über den Infrastrukturfonds für den Agglomerationsverkehr, das Nationalstrassennetz sowie Hauptstrassen in Berggebieten und Randregionen	725.13
MinVG	Bundesgesetz über die Verwendung der zweckgebundenen Mineralölsteuer	725.116.2
	Verordnung über die Verteil. nicht werkgebundener Mineralölsteueranteile	725.116.25
	Verordnung über Beiträge an strassenverkehrsbedingte Massnahmen g. LRV	725.116.244
Gesundheit / Health		832.10
KVG	Bundesgesetz über die Krankenversicherung	
Forschung / Research		
	Verordnung über die Förderung der Forschung im Strassenwesen	427.72
Normen / Norms		
VSS	Normenwerk der Vereinigung Schweiz. Strassenfachleute (nur z.T. verbindlich)	

Kantonale Bau-, Strassen- und Raumplanungserlasse / Cantonal laws and regulations on building, roads and spatial planning Je 26 verschiedene Gesetze inkl. der Verordnungen	
Internationales Recht / International law	
Vereinte Nationen: Übereinkommen über den Strassenverkehr und die Strassenverkehrszeichen (Wiener Konvention) / Convention on Road Traffic and on Road Signs and Signals, done at Vienna on 8 November 1968, including amendments, United Nations	741.10
Vereinte Nationen: Europäisches Zusatzübereinkommen über den Strassenverkehr und die Strassenverkehrszeichen	741.20

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5. Policy-making

5.1 Walking and „Human-powered mobility“ become a topic

In recent years, in Switzerland as much as throughout Europe, there has been a renewed interest regarding walking and cycling not just as leisure traffic modes but increasingly as everyday traffic modes.

Although for a very long time pedestrians and cyclists were missing almost completely from transport policies, since 2000 “human-powered mobility”[25] has emerged as a full-fledged topic, specifically addressed both through broad-framed political objectives and more specific transport and urban planning strategies. Today pedestrian issues are generally considered within this relatively positive framework.

In Switzerland, this evolution was due to the conjunction of several factors:

- objectives regarding sustainable development introduced by the Federal Council
- conclusions of various studies and recent research programs (in particular PNR41, Microcensus on transport 2000 and 2005)[26]
- interest awakened by both innovative projects and more assertive policies implemented by a certain number of cities during the 90s’ (Burgdorf, Geneva, Zurich)
- public debates in relation to voting on transport and traffic issues
- active lobbying by several associations.

This evolution has resulted in the stating of objectives at the various levels of the Swiss federal system – Confederation, cantons and municipalities – which have (or should have) a direct or indirect impact regarding pedestrian policies (*see chapter 5.2 below*).

5.2 About the Swiss federal system

Switzerland has basically three levels of government: federal, cantonal and municipal. The approximately seven million people in Switzerland live in 26 cantons and in about 2'900 municipalities (ranging from as low as 20 inhabitants to as high as 350’000). Many urban planning projects regarding pedestrians are conceived at the region or agglomeration scale. Today, agglomerations are becoming the reference scale for most urban planning and transportation-related projects (see below). However, neither the agglomerations nor the regions are – at this moment – usually congruent with the administrative and political boundaries.

In the Swiss federal system, tasks and responsibilities are distributed among the three basic levels in terms of functionality and issues concerned. The Swiss Constitution provides no direct link between the federal and the municipal level; all tasks and responsibilities are intermediated by the cantons. As in all federal systems each level has a strong sense of autonomy and self-reliance, regardless of the fact that this freedom is often fictional. In terms of walking, municipal and cantonal authorities are ultimately responsible for the safety and comfort of pedestrians and for urban quality. But both levels are highly dependent on the laws, guidelines, policies and financial frameworks set by federal authorities. The municipalities themselves are additionally bound by cantonal rules and structures.

[25] This term covers all transport modes that use “muscular power”: walking, cycling and other non-motorized modes such as child's scooter, rollers, skate, etc. Other terms sometimes used: soft locomotion, slow traffic, soft mobility.

[26] The Microcensus 2000 in particular showed the need for focusing the future transport policy on three main axes: transport within agglomerations, leisure mobility and encouragement of non-motorized traffic. The PNR 41/national research program arrived overall at the same conclusions. The Microcensus 2005 has added a specific chapter gathering data on physical activity and active transportation modes such as walking and cycling.

5.3 Urban planning and transport policies: at the core of the action to promote walking

Taking measures on roads in favour of pedestrians is not sufficient when travel distances become too long. Urban planning is thus at the core of any walking promotion action since it establishes distances between places. The municipal and cantonal choices regarding individual motorized traffic (e.g. infrastructures provided, parking management policies) and the quality of public transport also play an important part in facilitating or hindering travel conditions for pedestrians. Yet many obstacles are in the way of reorienting urban development towards a compact and multimodal town model. Such reorienting asks for the introduction of a global strategy equipped with a whole range of tools and measures both in transportation and urban planning.

In Switzerland, various government levels participate in defining and managing the country's territorial development. This implies both vertical (Confederation-cantons-municipalities) and horizontal (across fields of action) interactions.

As far as policies go (for a more detailed account of the legal framework see previous chapter 4): the Confederation sets sector strategies and plans[27] which define the broad objectives and principles which will direct policies on a national scale. The cantons then develop their own specific policies and plans, mainly in the fields of transport and urban and regional planning, within the broad framework set by the Confederation. In a majority of cantons, municipalities remain quite autonomous (e.g. they retain quite a large margin of manoeuvring space regarding how to define and locate construction zones within their territory). Nevertheless, the financing system and conditions to obtain subsidies (from the Confederation towards the cantons and from the cantons towards municipalities) play an important role in directing the urban planning choices.

The framework of this country report does not allow going into the details of all the policies at all levels. However, several main tendencies may be highlighted:

Urban planning

Current objectives retained on practically all levels are:

- an urban development based on public transport services,
- urbanizing "the interior" (e.g. refitting industrial wastelands and districts close to railway stations),
- safeguarding yet unscathed landscapes.

In spite of implementing these proactive policies in the past few years, at least in parts, the main tendency of the Swiss territorial development remains directed towards a dispersed urbanization which is markedly unfavourable to walking. It can be expected that this tendency will continue for a while as a consequence of past decisions which still have impact on development. The recent "Report on Territorial Development" (2005) repeats, essentially word by word, two previous reports – the CK-73 Guidelines (1973) and the Broad Outlines for Territorial Planning (1996): highly dispersed building processes and subsequent haphazard cuts into the territory continue to maim the land into discontinuous and ill-connected tissues; motorized mobility is still on the rise; municipalities still own largely oversized zones to build on, many of which are not equipped for and do not benefit from good public transport services.

The Federal Office for Spatial Development (ARE) currently seeks to develop new tools to promote collaboration between municipalities in order to support a more sustainable territorial development. This is the case in particular with the "Agglomeration projects", which bring together within an integrated framework both, in terms of transportation and of urban planning policies. These projects must specifically include a chapter on human-powered mobility (*see below*). The ARE also encourages the setting up of "model projects for a sustainable territorial development".

[27] Sustainability Strategy, Transport Sector Planning, Leisure Traffic Strategy etc.

Individual Motorized Transport

Vehicle ownership continues to increase, as does the number of travelled kilometres per person, even though lately there has been a certain tendency towards stabilization. This phenomenon could be, however, only a temporary reprieve. A significant share motorized trips are short-distance and could be replaced by trips on foot or by bicycle[28].

In spite of stated objectives at all levels vying for a more sustainable mobility, transport policies remain strongly impregnated of the "road logic" and planning is still primarily conceived according to demand. Walking and cycling promotion measures are rarely found on top of the list, and it happens every so often that a new road infrastructure is presented as a necessary precondition before improving the situation for pedestrians and cyclists – provided the budget still holds at that point. Even within the framework of the "Agglomeration projects" many new road infrastructures are still considered essential.

It remains difficult to act in order to limit individual motorized traffic, in particular to limit the availability of parking. Most large cities in Switzerland do apply rather restrictive policies, rendered necessary by strong pressures of commuters and by the severe limitations in available parking space. Many of these cities have implemented Park and Ride facilities for intermodal exchange in their peripheries. Certain cantons, such as Bern, support the implementation of these Park and Ride facilities close to regional railway stations in order to reduce the car's modal share as far afield as possible.

Public Transport

Switzerland benefits from a good public transport system which is crucial for walking. Good services with many lines and stops, dense schedules, etc. provide accessibility for pedestrians and can reduce car dependency. Though there have been some losses in the regional train networks, Switzerland remains very well connected by public transport, be it through intercity trains, regional trains, postal buses or urban public transport networks[29]. Most recent improvements regarding rail connections (Rail 2000) focused on long distance connections, but at the same time RER networks are developed further, albeit gradually, and frequencies tend to increase to 2 or 4 times per hour. Cadenced scheduling was introduced throughout most of the rail network, including a certain number of correspondences with regional trains and postal buses. As a general rule of thumb correspondences were improved and transfer delays shortened.

As in other European cities, there has been a recent revival of the tram and metro in cities such as Geneva and Lausanne in particular. The other main cities, Basel, Bern and Zurich benefited from the chance of not having dismantled their tram network in the 60s', and built on their existing networks to reinforce their tram offer, which is now quite extensive.

5.4 Human-powered mobility in current policies at the federal, cantonal and municipal level

At the federal level: objectives are set

The majority of the recent strategic documents prepared by the Federal Department of the Environment, Transport, Energy and Communications (DETEC) in the fields of transportation, territorial development, environment and road safety comprise objectives regarding human-powered mobility, including walking and cycling.

The Federal Roads Office, FEDRO (the section in DETEC responsible for transportation) created an administrative structure specifically devoted to human-powered mobility. Though it remains rather small, it is

[28] According to the Microcensus on transport 2000: about a third (34%) of all car trips are not more than 3km (quite feasible for cycling), and one in every eight car trips is not more than 1km (a distance easily travelled on foot).

[29] Nevertheless some regions remain badly connected, not so much because of a lack of services but because the existing ones are not good enough to compete with the car, sparse frequencies being usually the worst resented issue.

significant that the issue was judged important to create an own unit at the federal level with dedicated human resources. The introduction to the "human-powered mobility" internet website of the office reads:

> The Swiss transport policy aims to meet the present and future mobility needs as efficiently and environmentally sound as possible. The increase of non-motorized transport can make an important contribution towards this goal.
>
> Human-powered mobility (i.e. pedestrians, cyclists, hikers, etc) represents a significant, yet untapped potential to improve the transport system, to reduce the environment impact (air, noise, CO2) while at the same time promoting public health. In addition, it strengthens eco-tourism and leads to savings in public and private spending on transportation. This is why the Swiss transport policy has been aiming for some years to increase the share of human-powered mobility both in everyday life and during leisure. (...)[30]

The framework documents and policies on the federal level which currently have the most direct potential to improve the situation for pedestrians are:

- the "**Mission Statement on Human-Powered Mobility – Draft"**, which represents the basis and one of the cornerstones of current activities in this field;
- the **"Agglomeration Projects"** and the **"Infrastructure Fund"** which allow the federal level to co-finance infrastructure provisions for human-powered mobility based on specific requirements;
- the will of the Federal Council to facilitate the introduction of **traffic-calmed zones** (30 kph and 20 kph zones);
- the **health impulse programs** encouraging active living and the promotion of walking and cycling as active mobility lifestyles *(see chapter 5.8.)*;
- **other strategic documents,** in particular the "Strategy for Sustainability" and the "Sector Plan on Transportation".

Mission Statement on Human-Powered Mobility - Draft: a document that had a significant impact – even as draft

Human-powered mobility (HPM) includes pedestrian traffic, hiking, cycling and other forms of non-motorized mobility such as inline-skating or kickboard scooters. This document, issued by the Swiss Federal Department of the Environment, Transport, Energy and Communications in 2002 provides the national mission statement for the promotion of HPM, which stems from the recognition of its potential to reduce traffic in urban areas at only modest infrastructural costs. It is also recognized that HPM has positive effects on the quality of life, on political targets related to energy and the environment, on the costs of health care for a large segment of population, and on economic impulses for the leisure and tourism sector. As the only explicit federal responsibility in the field of HPM in Switzerland is the promotion of hiking and pedestrian traffic through the "Federal Law on Footpaths and Hiking Trails" (see chapter 4.3), the mission statement aims at extending this law to include the whole range of HPM.

The document states a vision and formulates a strategy, to be implemented in 13 groups of measures. One of the targets is to increase the share of HPM from 47% (basis of year 2000) to 54% of all travel stages within 10 years.

In order to improve the transport system, to reduce stresses on the environment, to promote health and to promote "soft tourism" and reduce mobility costs, the proportion of physically active transport ("slow transport") shall be increased in comparison with individual motorized transport and with public transport. For this purpose, the Federal Roads Authority tries to improve the conditions for promoting physically active transportation, for example by providing the cantons with financial contributions to respective infrastructures in the context of the programmes in urban and suburban areas (Agglomerationsprogramme / Projets d'agglomération – see below), guidance and materials, basic research and support for pilot projects, adaptations in transport law, evaluation and monitoring.

30 See: http://www.astra.admin.ch/themen/langsamverkehr/index.html

The Mission Statement only exists as a draft and has never been finalized. However, it has been very important in guiding the development. Its content will be taken up in the Action Plan on Human-Powered Mobility (Massnahmenplan Langsamverkehr) to be finalized in 2011 as a measure within the Sustainable Development Strategy (see below)[31]. This means that it will become part of an integrated strategy on sustainability which hopefully will help to strengthen its impact further.

Within the framework of the consultation procedure, the principle of making human-powered mobility the "3rd pillar of a sustainable transport policy" and of placing it "on an equal footing with public transport and motorized individual circulation" collected a broad support. (Mission Statement on Human Powered Mobility – Draft 2002, put through the consultation procedure in 2003)

TIM: individual motorized transport (cars, trucks, motorcycles, electric bicycles)

LD: human-powered mobility (walking, cycling, skating,…)

TP: public transport (train, tram, bus, boat, plane)

The "Agglomeration projects": an opportunity contributing to the awareness of human-powered mobility issues

In Switzerland, the term "agglomeration" corresponds to a territorial delimitation established according to several statistical criteria[32]: it gathers a body of municipalities (comprising one or more city centres) that are linked through strong functional bonds, which are expressed in particular through the intensity of movements within its perimeter for work, education and leisure motives. These territorial entities do not have the same structural existence as cantons or municipalities, but they increasingly have to face a series of issues which cantons and municipalities cannot manage correctly at their own scales.

According to the figures of the population census 2000, 75% of the Swiss population live in agglomerations – composed of dense urban environments, but also of more heterogeneous suburban and periurban territories which may have been rural until a recent past. These urban tissues are more or less conducive to travelling on foot, and more or less covered by public transport services. Since 2000 the Confederation seeks to promote collaborations between the diverse transport actors in order to produce concerted transport planning schemes on the agglomeration scale. Specifically, the efforts are aiming at "encouraging agglomerations to conceive integrated planning schemes involving simultaneously transportation and urban planning in order to satisfy the requirements for possible federal subsidies within the framework of agglomeration traffic management" [33].

The Confederation's financial contribution follows six basic requirements (EB). Two of these also relate to human-powered mobility and require: "The analysis of the current and future state taking into account the developments in the fields of urbanization, individual motorized traffic, public transport and human-powered mobility" (EB3) and "Research in all the fields pertaining to the measures being taken" (EB4).

31 Documentation at: http://www.astra.admin.ch/themen/langsamverkehr/index.html (in German, French and Italian).

32 Criteria consist of: number of inhabitants, evolution of the population, continuity of the built-up area, relationship between working and resident populations, economic structure and commuters between the municipality and the central zone of the agglomeration. The definition of the Swiss agglomerations was carried out on the basis of the results of the 1990 census of the population and adapted according to the results of the 2000 census that integrated new municipalities into some agglomerations.

33 Many documents can be downloaded from the website of the Federal Spatial Planning Office (ARE): www.are.admin.ch > politique d'agglomération (German and French).

Regarding specifically human-powered mobility projects, local and cantonal authorities responsible for the "Agglomeration project" must be able to answer the following question satisfactorily:

> Human-powered mobility: Is there a global project encouraging pedestrian and cycling traffic? Are measures being studied for eliminating the existing weak points? Are new network elements being conceived specifically for walking and cycling?

The practical application proved to be difficult at the outset. An intermediate assessment carried out in 2006 showed that human-powered mobility was rarely taken into account in projects. In order to help cantons and agglomerations devising walking and cycling-friendly measures, the Federal Roads Office published a guidebook in 2007 entitled "Human-powered mobility in agglomeration programmes" (see chapter 3), showing the benefits of walking and cycling and explaining in detail what kind of measures are expected within the framework of the Agglomeration Projects.

About 30 Agglomeration projects (so called "projects of first generation") were submitted to the Confederation the end of 2007. They were evaluated in 2008/09 and grants awarded for the periods of 2011-2014 (first priority measures) and for 2015-2018 (second priority). Most of measures in favour of human-powered mobility were supported. One argument was their good cost-benefit ratio. Besides the directly supported measures, walking and cycling also profit from integrated approaches, for example, when main through-roads or modal interchanges are improved. In total it is estimated that more than 10% of the financing has some benefit for walking and cycling. Although these investments remain modest compared to those into public and road transport infrastructure, the agglomeration programs mark a significant change in attitude and action towards human-powered mobility according to many experts in the field.

Traffic-calmed zones: a real evolution

The legal basis for the creation of "residential streets" (20 kph with pedestrian-priority) was introduced in Switzerland in 1980. This was followed in 1989 by the possibility of creating 30 kph zones. The legal competence to do so belongs to the Confederation, which can delegate[34] it to the cantons while setting up instructions on the ways to apply the law.

Until the end of the 90s' this policy was very restrictive: in 20 years, for example, less than a hundred residential streets were created for the whole of Switzerland. The instructions regarding 30 kph zones were also very constraining, in particular by specifying the dimensions – the zones could not be very large – and the infrastructure measures that had to be taken. The whole procedure was exceedingly complicated, and thus dissuasive. Though the legal possibility existed, municipalities were not encouraged to create 30 and 20 kph zones at the time.

This situation changed at the end of the 90s', thanks to a favourable political context induced by two elements:

- the popular vote on the initiative "Rues pour tous" (Streets for All)[35], which required to lower the general speed limit to 30 kph within localities (with the exception of 50 kph on main arteries), following the model of Graz in Austria;
- the pilot scheme of "Flanierzone"[36] in the small town of Burgdorf (Canton of Bern), an experiment based on the rules of residential streets in the enlarged context of a commercial downtown area (*see chapter 6*).

Despite the rejection of the initiative "Streets for All", the wide-ranging political debate which it caused, in conjunction with the "Flanierzone" experiment, allowed the Swiss law to evolve.

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34 Municipalities - except for the largest cities in two or three Cantons - do not benefit directly from this delegation of power: they must obtain the authorization of their respective Canton.

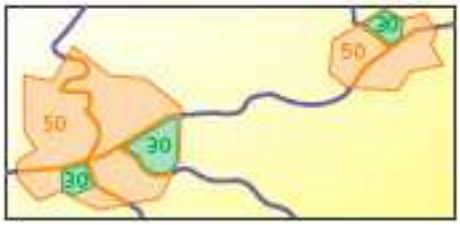
35 At the federal level, a popular vote initiative proposes to modify or introduce a new article within the Constitution. It has to be signed by 100,000 citizens. Though most of the times popular initiatives are rejected by the ballots, they contribute significantly to the advancement of public debate regarding a given cause, and it is not rare to see milder versions of the proposed measures being adopted in their wake by Parliament in the years that follow. The initiative "Streets for all" is no exception: initiated in 1997 and submitted in 1999, it was rejected by the ballots in March 2001, but its effects are visible in traffic-calming policies today.

36 Literally "Strolling Zone" *(see chapter 6).*

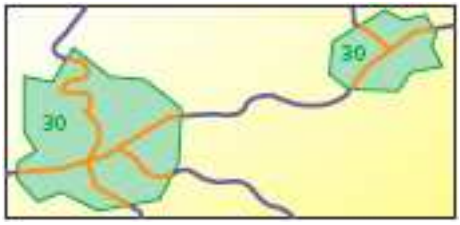
In 2002, with the ordinance on 30 kph and 20 kph (encounter) zones (*see chapter 4*), the Confederation introduced the possibility of creating 20 kph pedestrian-priority zones not only in residential districts but also in central sectors. The Confederation simplified procedures, granted more room for the cantons to manoeuvre and truly encouraged the development of traffic-calmed zones in Switzerland *(see below cantons and municipalities).*

30 kph zones are now recognized as a "measure that proved reliable" in the field of road safety: within the framework of "Via Sicura" *(see below).* Traffic-calming – in particular 30 kph and 20 kph zones – is one of the measures recognized as having the strongest impact on safety. The Council for Accident Prevention (BFU), until then rather silent on the matter, published in 2002 a widely diffused leaflet which recommends the introduction of extended 30 kph zones within residential districts.

The Council for Accident Prevention (BFU) recommends wide 30 kph zones within districts, to be applied to all local level roads. The advantages of such a measure being: an easily understandable principle, moderate costs and a single procedure for all the zones.



In the past



Now recommended

Source: Council for Accident Prevention (BFU) / Bureau de prévention des accidents / Beratungsstelle für Unfallverhütung, *30 kph dans les quartiers résidentiels*, Berne (04.2003/2)

Other strategic documents

Since the end of the 90s' the Confederation established several sector strategies referring to sustainable development in the fields of transportation and territorial development. All these documents comprise explicit objectives regarding human-powered mobility, although they remain general in scope, and do not usually refer to any specific objectives regarding pedestrians.

- **Strategy for Sustainability / Stratégie pour le développement durable** (2002)

This document emanating from the Federal Council was presented at the world Summit of Johannesburg in 2002 and synthesizes the broad objectives of the Confederation in ten fields of intervention, specifying an associated catalogue of actions. The sustainable development strategy "aims at integrating the principles of sustainable development in the whole of the territory and in all the political sectors. It is based on the total revision of the federal Constitution (1999), which raises sustainable development to the level of a prime national objective".

The "Guidelines and Implementation Plan 2008-2011" mention human-powered mobility within the chapter dedicated to mobility as one of the indicators that allows the evaluation of transport sustainability, the associated objective being an increase in its modal share. The chapter dedicated to health also stresses the importance of supporting sports activities and human-powered mobility.

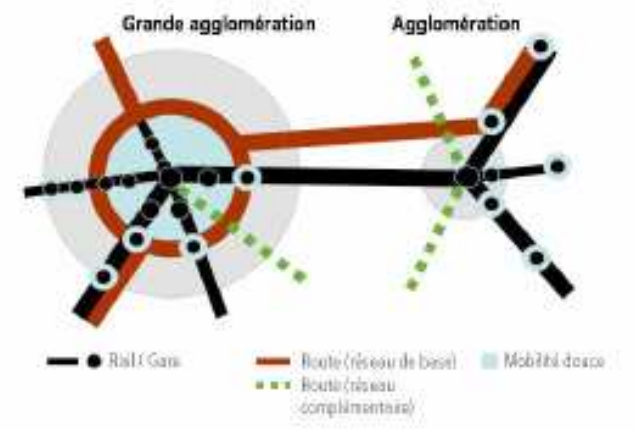
- **Leisure Traffic Strategy / Stratégie trafic de loisirs** (2009)

Leisure motives represent an increasingly significant part of displacements: according to Microcensus on transport 2005, they accounted for 44.7% of all displacements, of which approximately half were done by car. A report, elaborated following a request from the Federal Council, evaluates measures favouring more sustainable ways to develop leisure-related traffic within the framework of an overall transport policy, while defining the scope of the actions available to the Confederation.

The Leisure Traffic Strategy has been adopted by parliament in 2009. The role of human-powered mobility, or the so-called "non-motorized traffic", is underlined in this framework document in connection with proximity leisure trends and health. The report also insists upon the importance of urban planning that favours walking and cycling.

- **Sector Plan on Transportation, Program / Plan sectoriel des transports, partie programme** (2006)

This document (4th version, 2006) "lays down the objectives, principles and priorities of the Confederation with regard to transport infrastructures in its competence and defines ways to coordinate measures relating to the various means of transport, articulating these between themselves and with the desired territorial development". This document comprises general objectives regarding human-powered mobility, but it does leave some blur as to the effective implication of the Confederation. It remains very broad in scope and does not define specific measures.



General diagram for the co-ordination of transport modes and infrastructures within and between the agglomerations. (Sector Plan of Transportation, Program, 2006)

black lines/ spots: train/railway station
red: road (basic network)
green: road (complementary network)
blue: human-powered mobility

At the cantonal scale: practices vary, but on the whole have a rather limited impact

Regarding pedestrian issues, the cantons play a part, directly or indirectly, mainly in three fields:

- deciding on the cantonal provisions regarding the application of the federal law on footpaths and hiking trails (Loi sur les chemins piétons et chemins de randonnée (LCPR) / Bundesgesetz über Fuss- und Wanderwege (FWG)). The cantons take on the responsibility of establishing networks of pedestrian footpaths (*see chapter 4)*;
- exercising or delegating the power bestowed upon them by the Confederation regarding the implementation of 30 and 20 kph zones;
- planning road refitting, in particular of cantonal roads (municipalities wishing to refit a locality crossing must obtain their canton's authorization).

In all these fields practices may strongly vary from one canton to another: 26 cantons meaning ultimately almost 26 different policies on the matter…

Regarding the planning of pedestrian networks, even if the cantons are in theory responsible for implementing the federal law on footpaths and hiking trails, they almost always chose to delegate this task to the municipalities. Thus, municipalities are free to intervene in favour of human-powered mobility… or to do nothing about it! Only rarely do cantons play an inciting or counselling role. The most commonly met attitude on the cantonal level is that pedestrian issues are first and foremost a local question. When the cantons do involve themselves in managing walking networks, they usually concern nationwide routes designed for leisure and not urban networks for daily walking.

The policies regarding 30 and 20 kph zones vary according to the cantons as well. The political debates of the 90s' and the entry into force of the new law made the cantons generally more open to implementing the traffic-calmed zones. Some cantons remain sceptical with regards to the novelty of the 20 kph pedestrian-priority "encounter zone". On the other end, they tend to more easily accept demands for implement-

ing 30 kph zones. The cantons' positions also vary regarding zones' dimensioning, the required ancillary measures, the option of whether or not to include streets serviced by public transport, the tolerated volumes of traffic, and, more rarely, the possibility of extending the 30 kph zone to the whole of a locality or of integrating a main artery within a 30 kph zone (*see examples mentioned in chapter 6*).

The refitting of main arteries following traffic-calming principles has become common ground in Switzerland. Several cantons have published guidelines and recommendations destined both to municipalities and transportation professionals.

At the municipal scale: even the smallest localities are picking it up

Comprehensive policies in favour of pedestrians – exceeding the creation of a pedestrian precinct or an isolated refitting – were developed initially in the large cities during the 80s' (for the first among these). These were based on traffic management policies trying to solve problems caused by individual motorised traffic. This primarily reflects the fact that cities are dense urban environments which favour walking and the set-up of high-quality public transport services. The cities also benefit from large technical and administrative services employing highly-skilled staff. Planning schemes in favour of pedestrians were developed either purposely as a pedestrian master plan (Geneva), or within the framework of a general mobility policy (Zurich), or yet sometimes linked to participatory procedures (Basel, Lausanne partly).

Over the last few years some middle and small-sized cities (10,000 to 50,000 inhabitants) have also started to develop their own human-powered mobility plans aiming to create safe, continuous and comfortable walking networks. These cities benefit from the fact that they are, in general, relatively compact: their tentatively small scale lends itself well to walking and cycling, while usually benefiting from a railway station connected to the national network that offers good connections on a regional scale. Some of these cities have implemented Agenda 21 objectives, often comprising specific targets regarding pedestrians.

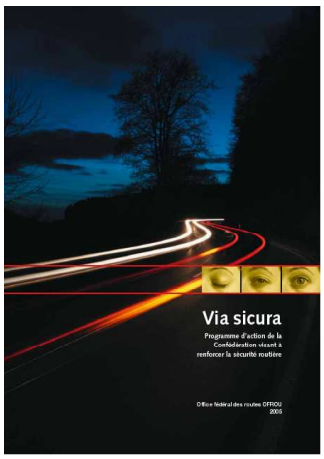
In large cities, especially those located in German-speaking Switzerland, 30 kph tends to become the rule within most districts, to the exception of main transit arteries. Most middle and small-sized cities gradually tend to follow this movement, but in a less systematic way. Bern and Basel have also developed a systematic policy of creating 20 kph encounter zones within larger 30 kph zones, provided these encounter zones are requested by residents. Most middle and small-sized cities apply a different policy of creating 20 kph zones in central business districts (Burgdorf, Bienne) and public spaces in front of railway stations (e.g. Delémont, Yverdon, etc.).

Several large and some middle-sized cities have created a structure or, at least, a single position in charge of human-powered mobility, more rarely specifically in charge of pedestrians.

In suburban municipalities, where urban development was carried out primarily in function of the car, pedestrian networks, when they exist, tend to be of disputable and unreliable quality. In addition, public transport services are usually not attractive because of erratic frequencies and lack of comfort. Furthermore, municipal territories tend to overlap, thus complicating further the creation and management of walking networks crossing several of these territories. Agglomeration projects could become a starting point to address pedestrian issues at a scale that brings different municipalities together.

Smallest municipalities and villages, especially those located in rural contexts, remain rather insensitive to pedestrian issues, except possibly within the framework of refitting a main through-road. Pedestrian networks are sometimes tackled as a safety-related issue related to children on their way to school. 30 kph zones are starting to make an appearance, surprisingly more in French-speaking rather than in German-speaking Switzerland.

5.5 Road safety policy: rather technical and still pending



The road safety policy implemented by the Confederation is inspired by similar policies developed in Sweden (Vision Zero) and the Netherlands (Sustainable Safety). Its objective is a reduction of 50% in the number of deaths due to road accidents by 2010 relative to the year 2000. It is based on the principle of "shared responsibility": users are responsible for their behaviour, while authorities must provide infrastructures that can 'bear' the occasional user mistake ("Forgiving Roads").

The program "Via Sicura" (2005) translated this policy through several measure packages and spheres of activities[37]. Priorities regarding measures to be taken are mainly defined according to expected gains in the reduction of the number of victims of accidents and/or attenuation of their consequences, as well as their cost-effectiveness ratio.

These evaluation criteria tend to leave few chances to specific pedestrian-friendly measures being considered a priority, since the share of pedestrians accounts for "only" 16% of killed and 12% of the severely wounded persons, against a share of motorized users totalling respectively 66% of killed and 65% of severely wounded.

Via Sicura upholds, however, the principle of traffic-calming measures in residential areas, in particular 30 and 20 kph zones (*see above and chapter 6*), which improve safety levels for all users, including pedestrians. Another priority of this program is to eliminate black spots, but measures to do so are not specified. In general, the program still has a long way to go before it can be implemented since political opposition is strong particularly when effective measures are concerned.

Traditionally a strong focus in Switzerland is put on road safety education within schools. In spite of some recent evolutions[38], sensitizing programs remain strongly oriented towards the prevalence of the car and insist on the need for the most vulnerable users to be careful. In the event of an accident the pedestrian's responsibility can be engaged[39].

5.6 Sports policy: developed with enthusiasm but little implementation yet

In 2000, the Federal Council launched a new policy for Switzerland, where sport is seen as an important element of daily life for everyone, not only as activity for sports professionals. This broader definition integrates all forms of physical activity practice during leisure time and points to it as a source of enjoyment, social inclusion and health. The first of the five priorities defined by the Federal Council regarding the sports policy is to improve health through movement and sport.

Federal Research encouraged the development of the research master plan "sport and movement", the first of its kind, that approached through a survey 44 research institutions active in the sports field. This research master plan aims to find relevant answers, supported by reliable scientific data, to questions regarding the development of physical activity. 19 themes of research were defined for the research framework period 2004-2007[40].

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37 Sensitizing and education, training and improvement, rules of behaviour, controls and sanctions, vehicle equipment, road infrastructure, quality insurance, research and statistics.

38 For example it has become now widely recognized that children cannot adapt to many traffic-related situations, and it is to the traffic to adapt to situations involving the presence of children.

39 A recent judgement in Switzerland "condemned" and then "discharged" a nine-year old girl who had crossed the road imprudently and had been hit by a car. This extreme case remains exceptional, but is allowed – and this is the worrisome part – within the framework of the law.

40 We may remark that among the 12 main domains supported by Federal Research for this same period, three other domains are directly within the scope of our present research: Health, Sustainable Territorial Development and Mobility, and Transports and Sustainability. Our present research fits in remarkably with the priorities fixed by the Federal Council for the next few years.

Several OFSPO[41] objectives specifically target producing a movement-friendly built environment, in particular housing and intra-urban development policies, to improve health and the quality of life[42]. The efforts that started in 2000 have been largely re-directed recently towards more professional sports again. It remains to be seen what the legacy of the original strategy will be, particularly on the local level.

5.7 Research policy: still neglected, but improving

When compared to research on other transport modes, walking has long remained insignificant as a research field and confined to specialized actors (pedestrian associations, private organizations[43], isolated university researchers). But the situation is now improving, and new research is being conducted in universities, albeit still in limited numbers.

Most of transport-related research is funded by the Swiss Federal Road Office (FEDRO). Two bodies, the Association of Swiss Road and Traffic Engineers (VSS) and the Swiss Association of Traffic Engineers (SVI) manage these projects or accompany them through the constitution of expert groups. Up until now, the bulk of this research has been devoted to motorized traffic, but recently a few projects have been accepted that focus on walking and cycling issues.

The presence of the human-powered mobility domain within the Federal Roads Office and their increasing number of activities also leads to new research projects and results. For example, a recent study about mobility patterns of children and young people was carried out on a mandate by the Swiss Federal Sports Office (OFSPO) and updated in 2008 on a mandate by the Federal Roads Office (FEDRO) showing the importance of walking and cycling for the children and young people in their everyday lives. More of this kind of research projects can be found in the list in chapter 3.

Two specific national research programs, “City and Traffic” (NRP 25, 1991-1995) and “Traffic and Environment” (NRP 41, 1997-2001) have been carried out in the last 15 years. In both programmes only a couple of modest projects on pedestrian and cycle traffic have been granted – and this only after some lobbying efforts. Since the year 2000, and contrary to what has happened in other European countries, there have been no other specific national research programs focusing on mobility.

In the field of accident prevention, several studies and documents have been produced by the Bureau of Accident Prevention (BPA). Pedestrian issues are generally tackled from a safety and rather technical point of view, which rarely questions traffic conditions. On a more positive note, the BPA defends the principle of extended 30 kph zones within districts.

Within academia the pedestrian issue is now gaining in popularity: some recent studies by students and more senior researchers alike are emerging in universities. On the mandate of cities, such as Geneva, Bern or Zurich, some university institutes have also conducted research studies focusing on pedestrians (*see references in chapter 3*).

5.8 Impulse programs: a shift of focus from environment to health

Several impulse programs were created at the federal level in the past years, comprising among their objectives the promotion of walking and cycling as daily travel modes. Most of them are conceived within the general framework of sustainable development objectives. There has been a shift in focus from envi-

41 www.baspo.admin.ch. See also programs www.allezhop.ch and www.lasuissebouge.ch, as well the specific program for schools www.ecolebouge.ch.

42 Suggested measures include improving the design of networks conceived for human-powered mobility, design playgrounds adapted to children’s needs, temporarily transform non-built spaces into playgrounds, allow skateboards and other related practices on parking lots during off-hours, temporarily recycle unused urban spaces to the profit of sports activities, create playgrounds and leisure areas on the outer borders of urban areas, disseminate the concept of 20 kph encounter zone (Begegnungszone/zone de rencontres) throughout the country.

43 Such as the Institute Marie-Meierhofer für das Kind.

ronmental-related programs to more health-oriented promotion objectives. Unfortunately, despite their nationwide scope, many of these programs are short-lived and their effects are not deployed over time as would those of more permanent policies.

Energy 2000 / SuisseEnergie

The **"Energy 2000"** national program initiated in 1990 lasted 10 years, until 2000. It consisted of an impulse program aimed at developing all kinds of actions to limit the consumption of energy in eight main sectors, including mobility (objectives: to stabilize, by the end of the 20th century, the total demand for fossil agents on its 1990s' level and to gradually diminish the demand for electricity). It was within the framework of "Energy 2000" that the pilot scheme "model city for walking and cycling" in Burgdorf was developed *(see chapter 6)*.

Energie2000 is followed since 2001 by the program "SwissEnergy" (see www.suisse-energie.ch). The sub-program "**SwissEnergy for Municipalities**" (see www.energiestadt.ch), which is targeting municipalities, makes it possible to develop projects on a local scale in the field of mobility, but the financing criteria focuses on energy savings brought about by the implementation of the different measures, thus compromising the financing of pedestrian-friendly projects.

Service centre for innovative mobility

The "service centre for innovative mobility" created within the DETEC in 2006 was run for four years as a pilot test, and is now being consolidated. It disposes of approximately 400,000 CHF (300,000 Euros) per year to promote innovative projects which may "improve the capacity, the sustainability and the coherence of the transportation system". 24 projects were subsidised between 2006 and 2009, among them projects to promote cycling tourism, new forms of tourism and leisure-related public transport, mobility and vehicle management in enterprises and communities. Projects focusing specifically on pedestrians have few chances to be financed because of the selection criteria, e.g. focus on energy and CO_2-reduction; exclusion of infrastructure and communication-only projects. In the first half of 2010, however, one of the six projects approved is about walking to school in the Italian-speaking part of Switzerland.

The Environment and Health Action Plan (Plan d'action environnement et santé, PAES)

The Environment and Health Action Plan (Plan d'action environnement et santé, PAES, see: www.paes.ch) was implemented by the Federal Office of Public Health (Office Fédéral de la Santé Publique, OFSP) in the wake of the Rio climate convention and tried, among other things, to promote environment-friendly and healthy transport modes in everyday life. This program lasted for ten years, and allowed the financing of several projects within the scope of three main themes: nature, habitat and mobility. This program was recently suppressed due to the redistribution of functions between the cantons and the Confederation as well as the re-direction of funding.

Physical activity and health promotion programs supported by Health Promotion Switzerland

In addition to its national programs and campaigns, Health Promotion Switzerland supports projects that are planned and implemented in cooperation with the cantons as well as with the municipalities. Experience gained from these projects is also made available to other cantons and municipalities. At the national level, there are priority programs[44] and walking promotion campaigns[45]. At the cantonal level, there

[44] Two out of three priority programs by Health Promotion Switzerland specifically target physical activity as a goal. The first of these programs, "**Physical Activity, Nutrition, Relaxation**", aims to stimulate people to take the initiative in exercising regularly, eating a balanced diet and allowing themselves relaxation breaks. The second program, "**Health and Work**", tries to counterbalance the fact that health promotion in the workplace has practically no legal basis in Switzerland.

[45] The campaign "Allez Hop" was developed in partnership with the Federal Office for Sports (BASPO), from 2006 to 2008, and promotes Walking, Nordic Walking, Running, FitGym and Watergym both for active and inactive populations Objectives include an increase in the physically active population of 1% per year, and specifically an increase of the number of participants in this program, in all Swiss regions, of 10% per year. The campaign "Walking engagement" was developed in partnership with a private entreprise, Ryffel Running, from 2006 to 2008, to promote Walking manifestations throughout Switzerland essentially for

are several examples of programs in Ticino, Jura, Neuchâtel and Vaud, to name a few[46]. At the municipal level the Quality of Municipal Life project allowed around 30 Swiss municipalities to implement a project for improving the quality of life. The project "Bien vivre dans sa ville", implemented from 2005 to 2006 in partnership with Equiterre, promotes seniors' health and mobility by systematically taking into account health promotion objectives in urban design. The pilot project "Quality of life – Esplanade" was a consultation participatory interface developed from 2006 to 2007 in partnership with the municipality of La Chaux-de-Fonds.

5.9 Organisational and political actors: essential work preparing the ground

Pedestrian Mobility / Mobilité piétonne / Fussverkehr Schweiz

Pedestrian Mobility is the Swiss pedestrian organization (www.fussverkehr.ch). Though weaker than automobile associations, its lack of means is compensated by highly-skilled professional work and it has become a well-acknowledged association in its field. The association grew out of the popular initiative for the Federal Law on footpaths and hiking trails *(see chapter 4)* and it still receives a small amount of money from the federal government to execute mandates to help implementing this law. Pedestrian Mobility was selected as one of the expert organisations to participate in the setting up of the Mission Statement on Human-Powered Mobility. Furthermore, the association carries out research and other studies and pursues lobbying with the help of parliamentary groups in charge of issues that may potentially affect pedestrians. It also organises seminars, including an annual technical day for people in charge of pedestrian networks.

Rue de l'Avenir and GMT-SI

In the French and Italian-speaking regions of Switzerland, effective organizations for ecomobility and traffic-calming have been active for the past 25 years. The association "Rue de l'Avenir" (in the French-speaking part: www.rue-avenir.ch) and the "Gruppo per la moderazione del traffico nella Svizzera italiana" GMT-SI (in the Italian-speaking part: www.moderazionetraffico.ch) bring together in a single network diverse associations defending the interests of pedestrians, environmentalists, the handicapped, the young and the old, etc. Both organizations publish a newsletter *(see chapter 3)* and are well-regarded in their respective areas. Rue de l'Avenir and the GMT-SI are also the official relays of Pedestrian Mobility in the French and Italian-speaking regions of Switzerland.

The pedestrian-cycle parliamentary group

The pedestrian-cycle parliamentary group resulted of the fusion between the "pedestrians" group, created at the instigation of Pedestrian Mobility, and the "bicycles" group in 2002. It ensures the lobbying on pedestrian-related issues within the parliament. The group follows closely the evolution of the Agglomerations Policy and the Transportation Sector Plan. It has supported rather successfully a postulate submitted in 2001 asking that pedestrian mobility be seriously taken into account in the Agglomerations policies and their financing schemes.

inactive people (75% of the audience). An objective which is already achieved was to make sure 30% of the Swiss population is aware of at least one of the three main events. DEPART/ARRIVEE, a campaign promoting physical activity, was launched in January 2005. A joint venture of the Swiss Health Promotion, the Swiss Federal Office of Public Health (OFSP), the Swiss Federal Office of Sports (OFSPO) and the general Company of posting (SGA), this nationwide health promotion campaign (www.suissebalance.ch) invites the Swiss population to choose balanced food and to practise a daily physical activity.

46 The 3-year pilot project "Vivi la tua città", which was coordinated by the Office of sanitary promotion and evaluation of the Department of Social Affairs of the Ticino Canton from 2000 to 2003, aimed to promote physical activity through human-powered mobility increase in the urban region of the Locarnese. The Cantonal program "Health and Mobility Days" was set in partnership with the Jura Canton and Equiterre in 2001, while setting up its Agenda 21. it promotes human-powered mobility and health as well as physical activities for leisure. The Cantonal program of promotion "Nutrition and Physical Activity" was set in partnership with the Department of Health and Social Affairs (DSAS) of Neuchâtel, in 2006. The Canton of Vaud has seen the emergence of a series of specific projects borne by health-related institutions in order to promote physical activity.

The Transport and Environment Association

The Association Transport et Environnement ATE/Verkehrsclub der Schweiz VCS (www.verkehrsclub.ch) offers an alternative to the traditional automobile organizations by providing the same level of service when the car breaks down while using the membership funds towards the achievement of different political goals regarding transportation policies, e.g. to promote walking, cycling, public transport. The VCS/ATE, founded in 1979, counts around 140'000 members, which means that it is the second largest Swiss traffic organisation. It launched the initiative “Streets for All”, that though it was turned down in March 2001 paved the way to the dissemination of 30 kph zones throughout the country (*see above*). The association has published quite a few documents and brochures and is active in particular in the field of children safety on the way to school, as well as the safety of senior and other fragile populations (*see chapter 6*).

Equiterre

This association was founded in 1971 (www.equiterre.ch). Its objective at the time was to implement the article on environmental protection which had gained entry in the Constitution. This association, active in both the French and German-speaking Switzerland, serves in a counselling and lobbying position close to several public institutions and develops projects in the fields of sustainable development, urban development, health. It sets up public sensitization campaigns on these fields.

Parents associations, local districts associations

In Switzerland as in most other countries, the mobilization of inhabitants is almost always the initial stimulus at the source of improvements of the pedestrian situation. This is particularly so regarding children safety issues. Parents associations are well-organised and often very active: they represent important relays towards disseminating pedestrian-friendly initiatives.

Health promotion Switzerland / Promotion Santé Suisse

Health Promotion Switzerland (www.promotionsante.ch) is a foundation funded by all Swiss cantons and health insurance companies. The Swiss government has entrusted it (art. 19/20, Federal Health Insurance Act) to initiate, coordinate and evaluate policies to promote public health. Its two offices in Lausanne and Berne and its partner organisations implement projects and promotion campaigns all over Switzerland *(see chapter 5.8)*.

The Swiss Health and Physical Activity Network (HEPA)

The Swiss Health and Physical Activity Network (HEPA: www.hepa.ch) brings together all stakeholders in this field and strives to promote physical activity, and namely walking, through a series of local and regional initiatives, namely within work environments, in association with the enterprises.

The Swiss Center to Build for Disabled People

The Swiss Center to Build for Disabled People (Schweizerische Fachstelle für behindertengerechtes Bauen / Centre suisse pour la construction adaptée aux handicaps; www.hindernisfrei-bauen.ch) encourages suitable buildings and infrastructures in architectural, urban and transport domains. It is the national competence center in the field. Services in every canton ensure consulting and lobbying at local level. Despite of limited resources in people, they play an important role in promoting public spaces accessible to all.

5.10 Education and training of professionals: a gap in sensitizing

The basic training of future professionals is ensured at university level by the Swiss Institutes of Technology of Lausanne and Zurich (engineers, architects, urbanists/city planners), cantonal universities (geog-

raphers, sociologists, psychologists, environmental scientists), and by the specialized universities of applied sciences (engineers, urbanists).

Pedestrian issues are still largely missing from these training programs: engineering training programs remain centred on the management of motorized traffic and rather technical questions; architecture usually focuses on pedestrian issues through local solutions for public spaces, but does not address global network-based solutions. Geography, on the other hand, is more oriented towards social sciences, and may include specific teachings on mobility-related topics. On the whole, future professionals usually finish their studies without having had the occasion to develop an interest, a body of knowledge and specific competences regarding pedestrians. Some professionals do develop this interest and competences later on, on an individual basis, and knowledge is acquired in the field.

A recent study commissioned by the Federal Roads Office confirms the lack in education and training (see chapter 3.3, current research projects, econcept), and makes proposals to improve the offers.

There are, however, some interesting possibilities of post-graduate and professional training courses and seminars on specific topics subsidized by the Confederation, provided by the WWF Training Centre in Bern (www.wwf.ch) and the Training Centre for Sustainable Development (SANU: www.sanu.ch) in Bienne.

Over the last few years several private business offices both in French and German-speaking Switzerland have emerged, which concentrate their activities on sustainable mobility. They contribute to the work of promotion in this field, and often develop innovative projects.

5.11 Conclusion

To take stock of policies in favour of pedestrians is a difficult and complex exercise: one is constantly torn between the temptation to value any change, slight as it may be, in contrast with previous decades when virtually nothing was done, and the temptation to remain critical in regard of policies and measures which remain fairly modest. Pedestrian policies truly are policies of small steps…

The evolution in discourses is real enough, though it may not always be followed by acts. It is a necessary first step in rendering human-powered mobility more visible. Nevertheless, and in spite of all the recent progress noted throughout this report, change remains confidential: objectives formulated in relation with the promotion of human-powered mobility are often vague and broad in scope; there is often an ambiguity between human-powered mobility for leisure motives and for daily utilitarian motives; the hierarchy of priorities is not always clear (for example signalling pedestrian routes is often presented as being determinant to support the growth of walking trips, regardless of other, maybe more important factors).

Using the terminology “human-powered mobility” to designate simultaneously pedestrians, cyclists, skaters, etc may be practical, but induces confusion as to the objectives pursued and the measures to be taken. Thus, having dealt with “human-powered mobility” issues does not always mean one has really taken pedestrian issues into account. The abstract side of the terminology reinforces the risk of it being employed only within broad-scoped declarations of intent that remain at the surface of the issues instead of tackling the real problems underneath.

On the whole, sensitizing and training in walking-related fields are still lacking, the research potentials that would allow a better knowledge of pedestrian issues are far from exhausted and possible pilot projects which could induce a broader interest on walking issues are not being promoted at the present time (the Burgdorf case has remained a singularity so far). Furthermore, language problems add difficulties to disseminating knowledge and impulse programs throughout Swiss regions. Most recent publications exist only in German and both, French and Italian-speaking Switzerland, remain often unaware of what progress has been made elsewhere in the country.

For the moment, policies and achievements in favour of pedestrians often are due more to the personal engagement of individuals or groups (citizens, parents associations, political leaders, professionals, persons in charge of administrative services) than to a global climate of political good-will.

The agglomeration projects and the planned measures within the Sustainable Development Strategy are highly promising implementation tools. Particularly the agglomeration programmes are built on funding procedures and structural changes and not only on well-meant written policies. In 10 years we will see if the changes we all hope for have become a reality.

Despite the fact that some of the health, physical activity and sports policies have already been revised and partly cut back after a good start it is still believed that these issues could become important levers to bring about pedestrian-friendly policies and infrastructures in the future. The creation of attractive and socially inclusive public spaces combined with environmental and quality of life arguments could prove successful especially within cities.

This, however, only happens if the still strong focus on the management of motorized traffic and the development of large-scale infrastructures is changed towards a more walking and cycling oriented policy, particularly in terms of public space management. While we see progress in a number of (larger) cities, the continued increase of car ownership, car use and the expansion of motorways on the national and regional level could water down these gains.

Despite the progress mentioned there is still a long way to go. Professionals and policymakers have to upgrade their competences in the field; some still have to be convinced of the fact that walking could play a major role within the global framework of transportation policies. The COST project Switzerland aims at helping this process by providing a general overview regarding the status of walking and giving a perspective for the future institutional context.

The presence of specific structures dedicated to pedestrian issues in the administration and their motivations contribute to a better visibility and promotion of walking in planning and communication. This is true at the municipal, cantonal and also the federal level. The human-powered mobility domain within the Federal Roads Office is a prime example of this effect. Since its inception in 1999 it has helped in a significant way to advance the walking agenda, particularly in the political and administrative field as well as in research.

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6. Best practices and innovations

6.1 Introduction

This chapter does not pretend to be an exhaustive account of every single best practice and innovative measure, but rather a showcase for some interesting examples that may either play an important role model (e.g. Zurich Mobilitätskultur, Geneva Pedestrian Plan, Burgdorf Fussgänger-und Velomodellstadt), reflect a growing trend (e.g. Mobility management) or show the potential of still undeveloped solutions (e.g. mapping).

Selected examples were divided into several sub-chapter categories covering different pedestrian issues: urban planning strategies, refitting of streets and public spaces, traffic management techniques, assessment tools and graphic representation tools, communication and sensitization.

6.2 Urban Planning Strategies

Zurich: priority to public transport, walking and cycling

The city of Zurich is known for the quality of its public transport - trams and buses - and their very high modal share (37% of all trips are made by public transport). An integrated traffic management system covering the whole city allots systematic priority to public transport at crossroads. Being faster makes them more attractive. Zurich leads also an active policy of refitting prior industrial wastelands and favours urban density. These urban planning policies result in a context favouring pedestrians.

Since 2001 the city adopted a **mobility strategy entitled "Mobilität ist Kultur"** (Mobility is Culture), for a more sustainable mobility, which supports in particular the principle of a city of the short distances. This policy results in 18 "partial strategies" which define, among others, the objectives and measures regarding the various types of mobility, parking policy, street design and public spaces, mobility consulting, and more institutional issues such as how to collaborate at the various scales (canton, region) and financing models.

Two of these partial strategies specifically address pedestrian issues:

- the **partial Strategy "pedestrian mobility"** underlines the very important role of walking in urban mobility - "the city only lives when there are pedestrians" - it aims to promote journeys on foot and to ensure a continuous, safe and attractive pedestrian network, particularly in the districts (the downtown area's full potential is more or less attained, with 43% of journeys carried out exclusively on foot);
- the **partial Strategy "disabled persons, older persons and children"** emerges from a participatory procedure which actively integrated those concerned through specific workshops, and gave the opportunity to professionals to test a given route on a wheelchair in order to better understand the problems that it entails regarding urban design. A dedicated website allows a permanent interaction between inhabitants and the city administrative services.

The development of the partial Strategy "handicapped people, old people and children" integrated all the groups concerned through various forms of participation (here a workshop with children). (Source: Tiefbauamt Stadt Zürich)

A strategy to rediscover walking: during the summer months the city organizes a series of events on the topic of mobility (theme walks, urban quiz, playful installations), allowing the (re)discovery of walking and

cycling while having fun. Also walking maps of many neighbourhoods have been published (see “urban walks” further down in this chapter).

Urban design refitting: the city has refitted many **streets** and **squares**, thereby allotting more space to pedestrians. Some of these operations entailed reintroducing surface crossing to replace the less desirable old underground crossings (Bahnhofplatz, Schaffhauserplatz). A**dvanced pavements** (“Kaphaltestellen”) at bus/tram stops facilitate the access for public transport users.

www.mobilitaetskultur.ch (website in German)

Geneva: The “Plan piétons”: an example which remains a reference

The “Plan piétons” is the Pedestrian Master plan of Geneva. On the website of the city of Geneva one can read:

Many journeys in the city are quicker on foot, by bicycle or using public transport, than by car. By increasing the number of journeys we undertake on foot, we make a contribution to improving air quality, an essential factor in the quality of life in the city. We also reduce pollution of all kinds caused by car traffic.

Encouraging people to walk in our streets also means guaranteeing the attraction, animation, safety and friendliness of the city, whilst looking after the health of city dwellers.

Reclaiming of the public domain by pedestrians thus means that our streets and squares can play their part as places for encounters and social interaction.

The City of Geneva wishes to valorise its public areas, taking these various factors into account.

After launching, in 1995, the first phase of a Pedestrian Plan, aimed specifically at promoting walks by means of map-guides, which were extremely well received, the City now intends to implement the second generation of the Pedestrian Plan: the master plan of pedestrian routes.

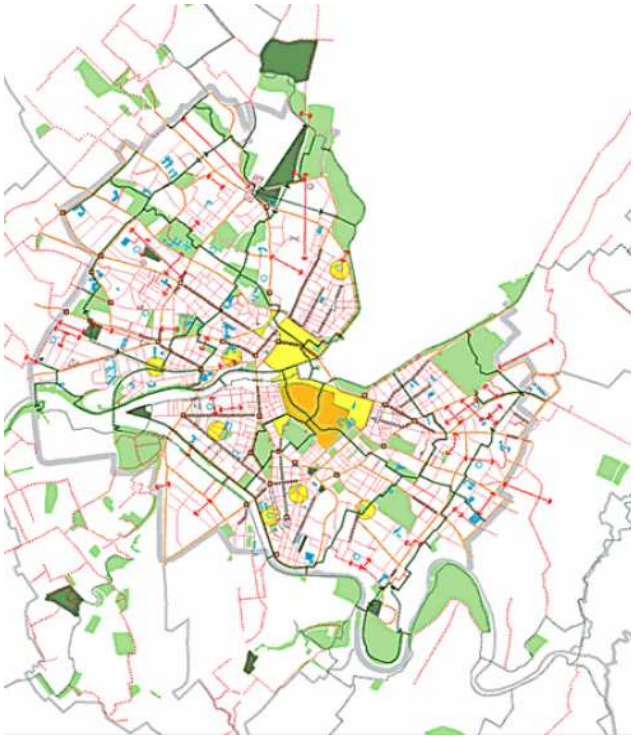
This instrument, which commits the authorities, is a pragmatic response to the numerous demands received from the City Council and the population as a whole.

It aims to remove or reduce obstacles for pedestrians, to ensure security and to improve life in the city's various districts.

This commitment in favour of pedestrians is the concrete demonstration of a stated political will: to make Geneva a city where pedestrians rediscover their rights, within a quality environmental framework.

The Master plan is based on five actions:

- **encouraging walking**
- **valuing streets** and **squares** within districts
- **facilitating pedestrian movements**
- **eliminating obstacles** to pedestrians
- **traffic calming** at district level.



The Pedestrian plan is a coordination tool that gathers all the measures to be set up. The plan is more than just on paper, it is a continuous process comprising a large share of communication and a financing scheme. (Source: Ville de Genève)

Each time a measure of the Pedestrian plan is implemented, it shows!

Website: *http://www.ville-ge.ch/geneve/plan-pietons/index.html* (also in english)
Evaluation of the walks: *http://www.geo.unige.ch/oum/* (> études publiées > 2004)

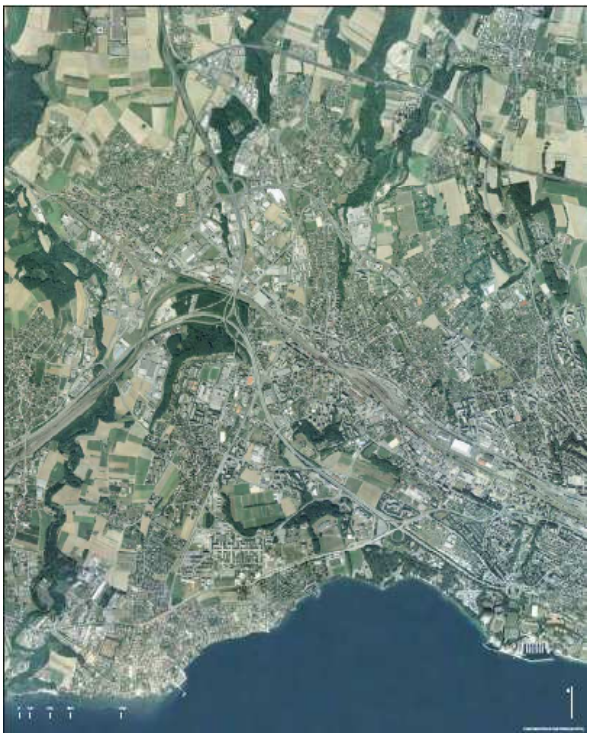
Ouest lausannois: an example of urban planning on a supra-local scale

The Directing Scheme of Lausanne West (SDOL) is a planning scheme gathering eight municipalities located in the West of Lausanne. These form a very dynamic sector totalling 65,000 inhabitants and 33,000 workplaces within a territory of approximately 26 km2 (city of Lausanne not included).

Within the framework of this large-scale project, six complementary studies targeting certain topics were developed, including one devoted to human-powered mobility. At this large scale it was of course not possible to include pedestrian-friendly measures in detail, but the “Directing Scheme of human-powered mobility and public spaces” allowed:

- to develop arguments on the role of soft mobility within this scale,
- to define a network for pedestrians and cyclists exceeding municipal boundaries,
- to target priority actions by specifying the objectives concerning the pedestrians
- to define which collaborations are needed.

This work is used as pilot scheme for the development of the other sectors within the Lausanne-Morges agglomeration project (PALM), of which the SDOL is one of the specific sectors. The interest of this example lies in its large scale (which exceeds the local scale and requires collaborations between municipalities) and the fact it deals with suburban spaces, whose urban development is often quite unfriendly towards pedestrians.



Ouest lausannois: eight municipalities sheltering 65,000 inhabitants and 33,000 workplaces, and a typical suburban territory unfavourable to pedestrians (car-oriented urban development, long distances, detours and isolated tissues). (Source: Schéma directeur de l'Ouest lausannois, orthophoto Swisstopo)

www.ouest-lausannois.ch > chantier 5 (in french).[47]

Burgdorf/Berthoud: Model City for Pedestrians and Cyclists

The small town of Burgdorf/Berthoud (15,000 inhabitants), in the canton of Bern, was selected for a pilot project "Model City for Pedestrians and Cyclists" within the framework program "Energy 2000" *(see chapter 5, Impulse programs)*.

The city Master Plan revised in the middle of the 90s' already proposed, regarding mobility, to systematically improve the connections for pedestrians and cyclists, traffic calming along the main arteries and ultimately vying towards a more sustainable modal split: +1/3 of journeys on foot and +1/5 of journeys on bicycle by the year 2000. In terms of urban planning policy, the Master Plan envisaged a densification within the existing districts and an urban development based on bettered public transport lines.

The project "Model City for Pedestrians and Cyclists" allowed the development of many innovating measures. Most known is the "Flanierzone" ("strolling zone", a test version of the "encounter zone" in the city centre), which allowed the introduction into the Swiss legislation of the "encounter zone" *(see chapter 5, policy on traffic-calmed zones)*. Certain experiments were discontinued, but the majority were kept over time and remain as of today examples of reference: home delivery by electric bicycle in partnership with the local shops, a bicycle centre beside the railway station including a repair shop and bicycle hire, "Car-Los" terminals deploying organized hitch-hiking procedures, sustainable mobility actions in partnership with local sports associations, mobility management for local companies, programs teaching mobility in schools, the Mobility Jackpot *(see below)* are examples of measures developed within the Burgdorf project. Other, yet more traditional, measures were also implemented, such as overall planning for improving safety on the way to school, improving pedestrian connections with peripheral districts, systematically taking pedestrians into account when designing new constructions.

The Burgdorf project lasted ten years (1996-2006). It officially ended in spring 2007.
www.burgdorf.ch > *Umwelt > FuVeMo (in German, some summaries in French).*

Among many tested measures: the system of home delivery by electric bicycle, set up in partnership with commercial partners, allowed for a 21% decrease in car trips in favour of cycling (+18%) and walking (+3%). (Source & photo: Martin Wälti)

6.3 Reallocation of road space, reduction of speed

The “modèle bernois” (“Bernese model”): cohabitation of the users on main arteries with heavy-traffic

The “Bernese model” is a philosophy of planning developed by the canton of Bern in the middle of the 90s’ for arteries with heavy-traffic. This philosophy seeks to manage the technical problems while taking into account the “needs of man, the habitat and the environment” (the safety and comfort of pedestrians and cyclists, protection of residents against the noise, better conditions for commercial trade, quality of space in general). This philosophy privileges creativity (innovating solutions, new instruments), and a participative process which associates the partners and user groups concerned. The projects carried out within this framework developed several innovating solutions to optimise the available space. The projects are always the subject of a scientific evaluation. A probation period allows testing the operation and collecting the opinions of the various users before refining its principles. From the “Bernese model” stemmed the principle, which has been generalized since, of the “polyvalent strip” in the middle of the road facilitating pedestrian crossings over the entire length of the refitted street segment.

Wabern (BE), Seftigenstrasse. Space was completely redistributed: the tram circulates on the same space as the cars, thus making it possible to widen the pavements, to create cycle tracks and a “polyvalent strip” in the middle of the road. Pedestrians can thus cross virtually everywhere. This project was elaborated in collaboration with all the partners and user groups concerned. (Source: Tiefbauamt des Kantons Bern, taken from website: www.vcs-sgap.ch)

Zollikofen (BE). The first road refitted according to the “Bernese Model”. (Source: Tiefbauamt des Kantons Bern, taken from website: www.vcs-sgap.ch)

http://www.bve.be.ch/site/bve_tba_ueber_bernermodell (in German)
http://www.bve.be.ch/site/fr/index/tba/bve_tba_ueber_bernermodell.htm (in French)

Begegnungszonen / Zones de rencontre / Encounter zones (20 km/h, pedestrian-priority)

Since the change of law in the beginning of 2002 *(see chapters 4 and 5)*, a lot of "encounter zones" were created. There were approximately 400 in 2004, and quite a few were carried out since then. In large cities they are mainly found in residential districts *(see Bern, below)* while in smaller cities they are mainly used to refit central spaces (railway stations, historic centres, central business and commercial districts).

Bienne (BE), place Centrale. Despite the heavy traffic (13,000 vehicles/day) and a great number of buses, pedestrians benefit from a full-fledged priority, and conflicts are rather rare. An important traffic remains an exception, but several encounter zones accommodate traffic levels of a few thousand vehicles/day. (Source: Ville de Bienne)

Berne (BE). Each district in "30 km/h zone" comprises one or more "encounter zones", implemented following the requests of inhabitants. Most consist of very simple refitting measures, partly carried out by the inhabitants themselves. It should be noted that in residential district streets traffic is usually not very important (approx. 100 vehicles/hour). In Basle, Bern and Zurich, sparse traffic is a precondition for implementing this kind of measures. (Source & photo: Thomas Zahnd, Planum Biel)

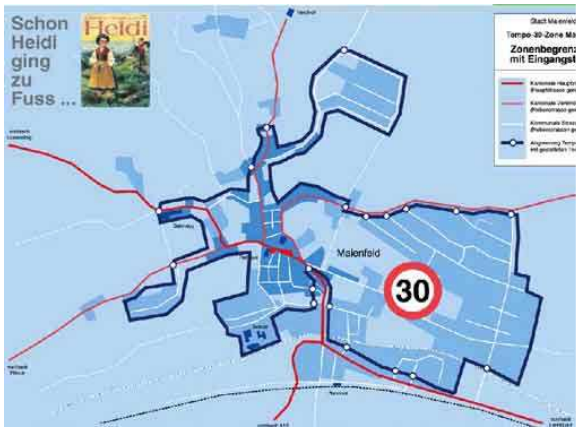
Soleure (SO), old town: an example of an "encounter zone" that includes the whole historic centre. (Source: Stadt Solothurn)

A great many examples can be found on the following websites: *www.zonederencontre.ch* (in French), *www.begegnungszonen.ch* (in German)

30 km/h zones

In Switzerland "30 km/h zones" are increasingly numerous – not only in large cities but also in middle-sized and smaller cities (10,000 to 50,000 inhabitants), and sometimes even in villages, though practices vary widely across cantons. Some examples, though they remain still rare, are worthy of mention:

Köniz (BE), Schwarzenburgstrasse. An example which remains exceptional: this main road is integrated into a “30 km/h zone”, in spite of heavy traffic and the presence of a bus (speed was actually even lowered to improve traffic fluidity). An innovating solution without marking pedestrian crossings was tested, whereby pedestrians can cross anywhere they want thanks to the “polyvalent strip”. This system functions thanks to the overall slow speed and the higher levels of reciprocal attention. *(See also below: Suppressing zebra crossings?)* (Source & photo: Markus Hartmann and Stadt Köniz)



Maienfeld (GR), 2,500 habitants. Another example which remains (still) exceptional: the whole locality was limited to 30 km/h, including the main road crossing the village. Another interesting aspect of this project is the fact it consists of light, inexpensive measures. The whole concept was implemented for 80.000 CHF (approx. 50.000 euros). (Source: Gemeinde Meienfeld)

Zurich. At the beginning of the 90s’, the city had implemented approximately 40 30 km/h zones, small in size but composed of a myriad of very expensive constructive measures. To answer multiple requests of inhabitants, the city decided to change its strategy and implemented 90 zones in a single year, with very simple means and focusing on communication to attain changes of behaviour. (Source: M.C. Pétremand, Rue de l’Avenir)

6.4 Evaluation tools

Pedestrian Audit

The Association Mobilité piétonne/Fussverkehr developed this instrument entitled “Inspection of pedestrian mobility”, by adapting a version inspired from both the English and Scandinavian models. The principle of this project resting on modest financial means is to quickly identify problems thanks to a dialogue established with the users who are invited to describe the weaknesses of the pedestrian network. The municipalities then have the possibility of prolonging this first step by creating a systematic record of the obstacles encountered on the pedestrian network.

(Source: Fussverkehr Schweiz)

www.fussverkehr.ch (in German, coming soon in French).

Children safety diagnosis (on the way to school)

Several tools were developed in this field, in particular by the association ATE *(see chap. 4, NGOs)*, very active in this field.

Both campaigns “Agir ensemble” (Acting together) and “1, 2, 3… soleil” aim to sensitize the authorities to road safety problems and encourage them to act in order to solve them. A questionnaire is addressed to the parents and another to the children on the subject of safety along daily school routes. The analysis of the answers (carried out by the association ATE) allows drawing up a safety diagnosis and constitutes a base to identify possible black spots and argue the point with authorities in charge in order to modify installations.

www.pedibus.ch > Agir ensemble (in French)

Elderly safety diagnosis

A similar instrument was developed by the association ATE targeting the elderly (booklet “The Elderly, those forgotten in Traffic Planning”) and by Equiterre (brochure “Living well in my City”). Both projects aim at sensitizing the municipal services in charge of urban development to the obstacles which the elderly can meet in public space and give recommendations of possible measures in order to encourage the elderly to continue to move on foot in a safer way.

www.pedibus.ch > Aînés (in French); www.equiterre.ch > Projets > Projets terminés

6.5 Communication and sensitizing actions

This chapter gathers some examples of information, communication and sensitizing campaigns and actions. These may or may not arbour an explicit impulse dimension towards a change in behaviour.

MobilService

The Mobilservice Association was born in 1999 from a private initiative. It runs the web information platform www.mobilservice.ch, which was brought into service at the end of the year 2000. The objectives of this project are twofold: disseminate knowledge on mobility-related topics and gather all the actors and professionals working on sustainable mobility within a coherent network. Mobilservice is an independent association whose financing comes from advertising contributions and subscriptions. The association offers to subscribers its database of web files presenting results of recent studies, useful statistics and interesting or innovative measures (intermodality, impulse actions, installations, road safety, mobility management, mobility of disabled persons, seniors and children, evaluation tools, etc.)

MOBILSERVICE
Plate-forme pour une mobilité d'avenir

www.mobilservice.ch (German and French, access to recent files upon subscription only)

Contest “A pied c’est sûr!” / « Flâneur d’Or »

This contest is organized by associations Mobilité piétonne/Fussverkehr and ATE *(see chapter 5.9, NGOs)*, and benefits from the support of the Federal Roads Office (FEDRO). It takes place approximately every four years and was organized for the first time in 1987. The contest is addressed towards the municipalities, the professionals, the organizations and associations engaged in innovating pedestrian-friendly projects. Projects may enter into four categories: mobility concepts, measures on main roads, measures on collecting and district roads, communication. The jury decrees several distinctions and an Innovation Prize, which is the subject of an official ceremony. Prized projects are presented in a booklet which is published after each edition of the contest.

The handing-over of the Prize and the distinctions is the occasion to hold press conferences both in French-speaking and German-speaking Switzerland. The contest renders the pedestrian issue more visi-

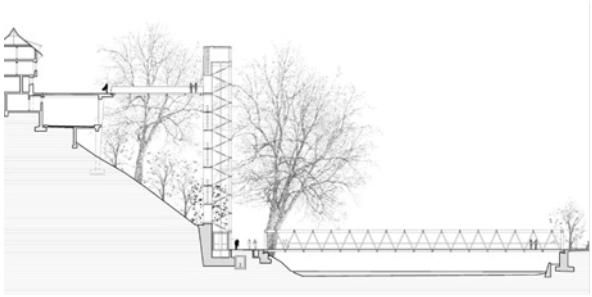
ble while publicizing innovative examples and encouraging the efforts of municipalities and professionals. It is generally well relayed by the press. (*www.flaneurdor.ch*)

Granges/Grenchen (SO) obtained the Innovation Prize in 2004.

Before (on the left): a road with heavy-traffic and pedestrians being removed from the street" (crossing by underpasses).

After the opening of the motorway: overall project for the city centre, re-distribution of space, pedestrians cross again on the surface ("encounter zone"). (Source: Stadt Grenchen)

Baden (AG) obtained the Innovation Prize in 2008, rewarding the building of a bridge combined with a lift. This new infrastucture allows to cross the river more directly between Baden and Ennetbaden, and facilitates the link between the river and the city center for pedestrians and cyclists. (Source: Stadt Baden & Fussverkehr Schweiz).



Mobility fair: "a carousel of innovating ideas"

This demonstration was organized for the first time in April 2007, by SwissEnergy for Municipalities (see chapter 5) and the town of Neuchâtel. It brought together nearly 200 participants.

Intended for professionals as well as for the general public, the Mobility fair comprised one day of study on mobility management, a congress specialized on the topic "innovative mobility solutions", national and international workshops, and a public demonstration animated by events and contests. The 2009 session was dedicated to Company Mobility Plans and Encounter Zones.

www.citedelenergie.ch > search keywords "salon de la mobilité" (website of SwissEnergy for Municipalities (SuisseEnergie pour les Communes), contributions to be downloaded in French and in German.

Pedibus

The "Pedibus" system is inspired by the idea of the "Walking Bus" of the Australian David Engwicht, to ensure children safety on the way to school. The pedestrian bus is a collective accompaniment of the children on predefined routes. This system was initiated in French-speaking Switzerland, in a district of Lausanne, upon the initiative of

a group of parents, with the support of the Town of Lausanne and of its “Delegate to childhood”. The idea met a growing success in French-speaking Switzerland (there were approximately 150 “Pedibus lines” in a number of cities in 2006) and now starts to interest collectivities in the German-speaking Switzerland. However, there the share of kids already walking to school is larger.

www.pedibus.ch

An interactive show on “the way to school” topic

(source: Nicolas Righetti)

Within the framework of the program “Walking to School”, the association ATE in Geneva *(see chap. 4)* created, with a troop of actors, a play entitled “The Small Red Roundabout”. The play represents a family on the verge of letting the child go to school on foot on his/her own for the first time. It addresses safety on the way to school in a playful mode and invites parents to think together of this topic which concerns them all.

www.pedibus.ch > *Petit rond-point rouge*

”Petit Plan piétons”

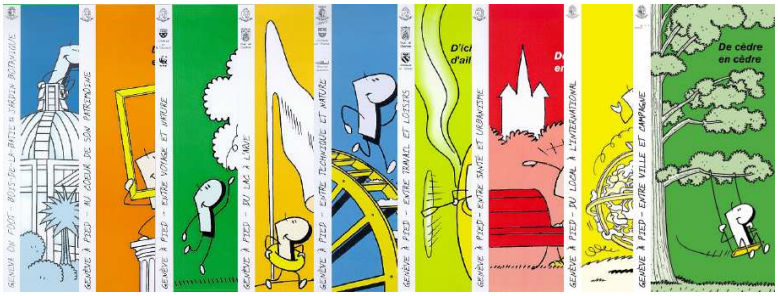
This animation was developed by the ATE on a mandate of the town of Geneva within the framework of the mobility week 2005. Each child, provided with a simplified plan of his/her district, draws the ways he/she follows to come to the school, notes the journey time on foot, the transport mode used (on foot, by child's scooter, by bicycle, by bus), which are the dangers and the difficulties he/she meets (lack of pedestrian crossings, lack of visibility, etc). The plan also allows marking unforeseen curiosities and events, odorous trees, nice tradesmen, accessible parks, etc. At the end of this collection of information, the puzzle is formatted in order to build a complete and original district plan, a kind of large treasure map. Thus it becomes a support to think of mobility, to imagine other means of transport than the car. Like its “big brother” the Pedestrian Plan, the Small Pedestrian Plan also seeks to encourage walking: developed within the framework of the mobility week, the project is especially centred on this aspect.

(Source: Ville de Genève, Service d’urbanisme)

www.ville-ge.ch/geneve/plan-pietons/pages/renseigne/sujet/ppp/01/ppp1_fr.html

Urban walks

Since several years, a number of cities started to develop walks in order to (re)discover the city on foot in a playful way. These walks are generally constructed around a topic – history, cultural, discovered curiosities, etc. Most are developed within the framework of urban planning or communication projects to promote walking (“Plan piétons” in Geneva, “Züri Z' Fuss” in Zurich), to help forging an identity (Ouest lausannois), to develop a local inheritance (La Chaux-de-Fonds/Le Corbusier), etc.

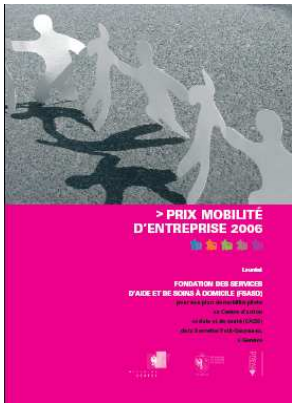


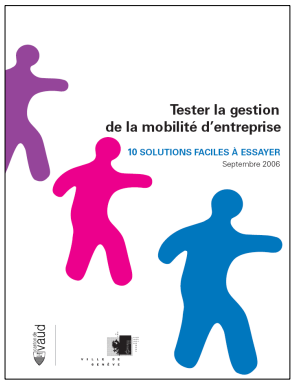
Geneva, within the framework of the Plan piétons: a map tracing a different walking route is published each year, each one on a different topic that allows other ways of discovering the city. (Source: Ville de Genève, Service d’urbanisme)

Mobility management

(Source: Ville de Genève, Service de l'aménagement urbain et de la mobilité)

Mobility management consists in an overall multimodal plan set up by an employer to encourage its collaborators, customers and suppliers to reduce the use of the individual car to the profit of other less polluting means of transport. It combines sensitizing approaches to other incentives, and comprises a range of measures and trial offers financed partially or in full by the company. Cycling promotion usually occupies an important place in the proposed measures while walking is often promoted in relation to public transport (usually the company finances the monthly pass against the employee waving his/her right to a parking space). In Bâle/Basel Novartis refitted direct accesses to its working site aimed at pedestrians and cyclists. Several administrations of cities (Geneva, Lausanne) or cantons (Geneva, Vaud) currently develop mobility management plans (with the primary goal of setting up an example to be followed). The city of Geneva, jointly with the Canton of Vaud, has also established an inciting policy aimed at large companies established on its territory, including a brochure with 10 easily implemented solutions and a Mobility Prize for the company presenting the best mobility management practice of the year.





(Sources: Etat de Vaud, Département des infrastructures / Etat de Genève, Département de l'intérieur, de l'agriculture et de l'environnement)

www.energiestadt.ch; www.ville-ge.ch/mobilite/

Mobility Jackpot

The "Mobility Jackpot" refers to a game intended for companies and administrations. Its goal is to promote multimodality and the decrease of individual car use to the profit of more sustainable modes in a playful manner and thus support energy savings on the way to work. Each week, the name of an employee is randomly drawn. If this person came to work on foot, by bicycle or public transport, or practiced car pooling, he/she is pronounced winner of the week and takes the "jackpot". If this person came alone in his/her car, the sum is left in the pot increasing the jackpot amount for the following week, thus increasing the incentive even further to come to work in a sustainable way the next week. The experiment shows that the installation of this game for a period of several months causes a debate on mobility issues within the company and stimulates a change in behaviour. The Town of Thun tested this concept in 2004 with success within the framework of a campaign to fight ozone. *(Source: MobilService, FuVeMo Burgdorf)*

www.mobility-jackpot.ch/f/index.html

6.6 Pilot schemes and new proposals

In city centres: suppressing the marked zebra crossings?

In Switzerland there is some questioning today regarding the marking of zebra crossings. The defended objective is almost always, at least officially, a "greater freedom for pedestrians": in the absence of zebra crossings, pedestrians could cross everywhere, according to their own needs, without being constrained by the 50 m rule currently prevailing in the traditional crossing legislation. This gain in freedom is, on the

other hand, severely counterbalanced by a lack of priority on the whole of the zone or the section concerned, and possibly less security – for the moment at least, because of the gaps in legislation. This issue is thus hotly debated. In “30 km/h zones”, the principle of not marking zebra crossings (except for rather exceptional cases) is a measure that has a hard time finding acceptance from parents in particular, and in certain cases communes prefer to renounce altogether the implementation of 30 km/h zones rather than being confronted with the problems of miscomprehension caused by the removal of zebra crossings.

This issue of suppressing zebra crossings also emerges on roads with heavy-traffic (up to 20.000 vehicles/day). The purpose of a recent research financed by the SVI *(see chap. 4)* was to evaluate examples of “Town centres without marking of pedestrian crossings”, focusing on central sectors with many commercial and service activities on both sides of the street. The Bernese examples of Köniz (30 km/h) and Neuenegg (50 km/h, see illustration) were evaluated, among other examples, within the framework of this research. This type of reffiting measures aim to give pedestrians more comfort, since they may freely cross the road wherever and whenever they wish to do so. Lower speeds also allow an improvement of traffic conditions, namely fluidity and noise reduction. The evaluation report on these experiences points out that that crossings at will seem to cause less friction, provided certain conditions are respected, such as speed reduction and visibility, for in the absence of pedestrian crossings and confronted to the logic of cohabitation of different users, both pedestrians and car drivers are brought to better communicate. Conversely, zebra crossings maintain the distinction between rightful crossings versus illegal crossings, thus reinforcing conflicts. In this traditional scheme, pedestrians are at fault if they opt for a free crossing less than 50 m from an official zebra crossing. Thus the question of suppressing zebra crossings is an overall delicate issue where the disadvantages for pedestrians must be thoroughly evaluated. Beyond the question of suppressing or not zebra crossings, the 50m rule should be abolished, and the issue of pedestrian priority should be more clearly stated in the law.

Neuenegg (BE). The refitting of this space meant giving up the marking of pedestrian crossings. The principle was hotly debated but undoubtedly allowed a certain awakening to this issue. The system seems to function: in spite of keeping a relatively high speed limit at 50 km/h drivers tend to adopt a lower speed, and show themselves very watchful with respect to the pedestrians. (Source: büro verkehrsteiner, Bern)

Modifying the signalling of “no through” streets?

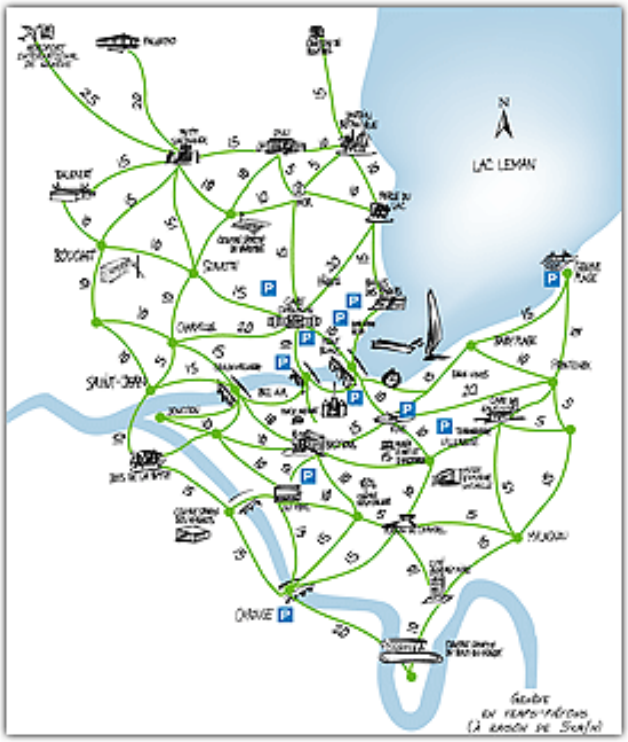
Within the framework of a European project for the improvement of information for pedestrians, the association Mobilité piétonne/Fussverkehr developed a pilot scheme aiming at supplementing the sign “cul-de-sac” when the streets concerned do not offer the possibility of transit for motorized vehicles, but instead do offer a possible connection on foot and by bicycle. A test was carried out in three towns, of which Burgdorf/Berthoud (totalling about thirty streets). The results appeared conclusive and Mobilité piétonne/Fussverkehr proposed modifying the Swiss regulation accordingly.

(Source: Fussverkehr Schweiz)

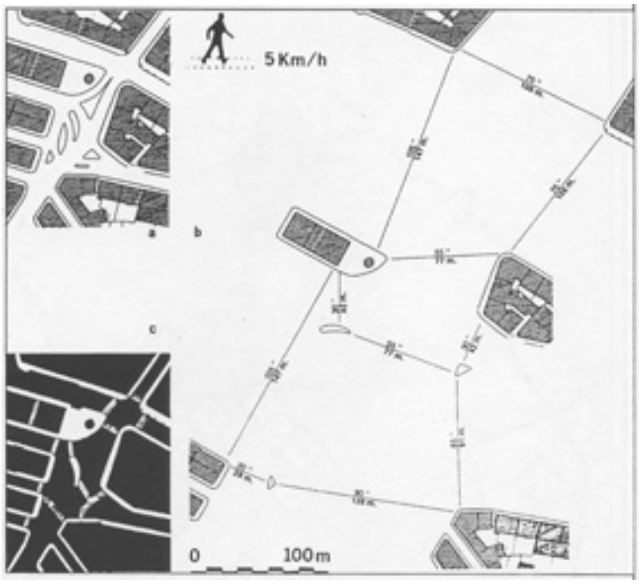
Report to be downloaded on: www.burgdorf.ch/2210.html (in German)

6.7 Cartography

Pedestrian-friendly graphic representations are yet only too few. Below are two interesting examples of cartography-related best practices:



On foot, one goes faster and further than one would believe… This pocket map highlights journey times on foot linking the town's main attractors. It is one of many communication elements developed by the town of Geneva within the framework of its Pedestrian Plan *(see above)*. (Source: Ville de Genève, Service d'urbanisme)



Three representations of the same space (place des Eaux-Vives, Geneva):

(top left) the normal cadastral map

(bottom left) a map showing surfaces that can be used by pedestrians in white

(on the right)… A tool that shows space deformed according to the time it takes a pedestrian to cross it.

(Tool developed by the city of Geneva)

(Source: Ville de Genève, Service d'urbanisme)

7. General atmosphere

Switzerland, a land of pedestrian contrasts: great differences across regions and between cities, and between leisure and daily walking

When compared to other European countries, the general atmosphere in Switzerland is quite walk-friendly, though this, of course, varies widely across the country. One could say, as a rule of thumb, that conditions have improved at a faster rate in large and medium-sized cities in recent years, while small cities quite often remain anchored in (quite literally) the ways of the past. Roughly speaking, the German-speaking part of Switzerland pays more heed to walking (and cycling) needs than its Italian and French counterparts.

Leisure walking: the further you go, the better it gets!

Traditionally Switzerland has great conditions for leisure walking, particularly in mountainous and countryside areas and on the shores of many of its lakes[48]. Switzerland has a dense, extremely well-maintained and highly connected network of leisure paths crisscrossing the whole country (totalling 60.000 kilometres), and really well-connected to postal buses and train networks. Furthermore, integrated ticketing including cable cars and boats, makes walking for leisure a very smooth experience. The recent introduction of the website of the national network of active modes www.schweizmobil.ch facilitates planning leisure-oriented outings across the country using active modes such as walking and biking.

In the last few years, a great number of leisure areas have been developed within the fringes of agglomerations, and many of these can be easily accessed using public transport or cycling. On foot, though, access may be hindered by distance, occasional lack of visibility and poor signage, unwanted detours or difficult crossings of infrastructure and the amount of traffic nuisances.

Daily walking: not as easy as it may seem!

Within urban environments, a dense network of parks and other leisure areas, usually well connected to the urban fabric of the city, a proximity policy regarding commercial venues and other essential services, both public and private, and an excellent public transport network all contribute to greatly facilitating pedestrian movements within cities. Nevertheless, leisure networks and daily all-purpose networks do not always superimpose in urban environments, and many daily all-purpose networks are not explicit to the average citizen.

Furthermore, the proximity policy regarding commercial venues and services is being gnawed by countering trends, such as the centralizing of banks and post offices, suppressing a myriad of neighbourhood small offices and maintaining only a few central ones, or the development of suburban shopping malls, cinema multiplexes and sports facilities, that push daily activities further and further away from where people live and work. Since the year 2000, with the rise of sustainability issues, there has been a return to proximity policies, albeit reduced in many cases to small-scale perimeters, such as prototype models of eco-districts. Furthermore, transport interfaces, namely gas stations, but also increasingly rail stations, increase the offer in proximity shopping, especially since their opening hours are much more comfortable for costumers in the evenings and during the weekends. Encouraged by the active development policy of SBB, the Swiss rail company, there are now almost 50 train stations equipped with shopping facilities which are used by train riders of course, but more importantly, also by pedestrians and cyclists that do not take the train.

[48] Nevertheless, not all lakes can be accessed, and when they can, it is usually not the case throughout the whole lakeside perimeter. Access to the lake shores is mostly hindered by private property-related issues, despite rights of way which are meant to be provided by law. Even new construction sites sometimes do not respect the law, since old sites are already occupying shorefronts.

A much larger emphasis on creating, maintaining, expanding daily walking networks, connecting them to main attractors and signalling their existence is needed if people in urban areas are to walk more.

Centre and suburbia: the city schizophrenia, for better and for worse!

While city centres, transport interfaces such as train stations and bus and tram interchange nodes and central residential neighbourhoods have improved greatly their safety and security conditions and gained a lot in attractiveness, suburbia remains poorly equipped and usually does not provide a safe, secure and attractive enough environment to walk in. Accessibility to points of interest for activities such as sports, leisure and shopping near home or office remains dismal in these areas, despite the (more often than not) rather short distances. In periurban contexts, global accessibility levels drop further still because of longer distances, attractors being few and far apart.

Most measures, even good ones, are implemented in isolation. Refitting of streets and other public spaces is rarely conceived as a part of an overall strategy to make the city more walking-friendly. There is a general lack of thought on the network-scale that would encourage intervening on several spaces at once in order to improve whole sections of the pedestrian walking network and render it visible to the public.

A lot is done in Switzerland regarding public transport, but measures facilitating pedestrian accessibility to public transport interfaces such as train stations and bus/tram main exchange nodes and secondary stops are far from complete. Thus, access to a quite decent public transport service may be severely hindered by difficult conditions to access it in the first place. Furthermore, suburban areas usually do not benefit from a good level of service regarding public transport, as the latter is difficult to implement and less cost-efficient than in more densely populated areas. However, the Swiss company Car Postal, within the framework of its OPTIMA research project, is in the process of thinking of new strategies to strengthen its offer within the less dense fringes of agglomerations, namely through introducing flexible, on demand services. Once operational, this new offer will greatly enhance reasons for walking to reach public transport in disperse periurban and suburban areas.

Traffic-calming is, slowly but surely, becoming the general rule

The type of measures taken to make urban environments more suited to walking varies greatly, which results in wide quality gaps. Quite a lot has been achieved in recent times countrywide to secure road crossings and limit traffic speed, though traffic-calming measures still vary widely across regions. Most towns choose to refit locality crossings or main axes of entry towards the city centres. Many times traffic-calming measures function as ancillary measures to public transport improvement schemes, such as the implementation of new tram lines or the refitting of train stations.

A major obstacle to this traffic-calming trend, is the fact that many of the areas being calmed are traversed by primary network roads, where legally speeds cannot be reduced to such low levels as 30 or 20 kph. Though there remains a possibility to do so exceptionally, it is rarely applied.

Traffic-calmed zones on the rise

An important characteristic of traffic-calmed zones is that they emerge often on the request of the population. In many cases, years of petitions have been necessary to implement the first traffic-calmed zones, but usually once local authorities adopt the first ones, others tend to follow.

In large cities such as Zurich, Basle, Bern, Lausanne, as well as middle-sized towns, traffic-calming zones are progressively, albeit more slowly in some regions than others, becoming the general rule, and extending everywhere except on the primary road network. Already they tend to usually be the rule within residential districts, and have been implemented in great numbers in many cities of all sizes throughout the country, albeit for different reasons, as we shall see below. Smaller-sized towns and villages usually im-

plement traffic-calmed zones in their centres, within the framework of train stations or main commercial streets refitting operations.

One can only applaud at the number of almost 300[49] shared spaces (Begegnungszonen / zones de rencontres) to have seen the light all over the country, in towns big and small, since a federal law has brought them into existence in 2002. In these areas, limited to 20 kph and with pedestrian priority, motorised traffic cohabits with walking (and cycling) in a rather friendly manner, all the more so when the proper amenities and infrastructure have been provided. In many cases only light infrastructure has been provided, since authorities may privilege the implementation of a great many inexpensive zones rather than fewer albeit more costly zones). Many residential districts have been invested in this way. More interesting have been the changes brought to heavily-fared sections of city centres, commercial strips and mass transit interfaces, which have successfully mastered their mutation from 15,000 vehicles a day to sometimes less than a 1,000. While gaining in environmental quality[50] they also favour pedestrian fare.

A much larger number of 30 kph zones (when compared to 20 kph zones or shared spaces) have been implemented in quite a few cities throughout the country, with major cities such as Basle, Bern or Geneva boasting dozens of them, medium-sized cities such as Winterthur or Saint-Gall being late on the rise but catching up fast, while small towns such as Lyss may even choose to become 100% 30 kph-limited. Maienfeld, the village of Heidi, is another example of how large-scale traffic-calmed zones may become a success. Such large-scale decisions though remain exceptional. On the whole, 30 kph zones tend to become a principle that is increasingly implemented in both residential areas and city centres. Other areas, especially within suburbia, such as commercial or industrial poles of development, do not follow this rule though.

Roads are still dangerous for pedestrians, but share of walking to school remains high

Accident-wise statistics in recent years show a decrease in the number of deaths or injuries related to the road in the general population, following the national road safety program launched by the government (Via Sicura). Still, the majority of pedestrian casualties involve especially old people and children. Thus, children remain a target population of major concern. In addition, a decrease in children's accidents may not mean roads are actually safer for them. How much of this decrease is actually due to the fact children walk less on their own and are more escorted to school and other activities remains to be evaluated.

Increasingly, albeit slowly and unevenly across regions, schools across the country (particularly within large agglomerations such as Geneva) are being equipped with a school-kit to ensure the speed limit of 40 kph (or lower) is strictly enforced and children can easily see and be seen when arriving within the school perimeter. In some cities, within school arrival and departure schedules a volunteer usually ensures security at most major road crossings on the way to school, and in recent years walking school buses have multiplied mainly in the French-speaking part of the country, coordinated by a nationwide promotion initiative by an environmentally-active association named ATE.

On national average, about 6 out of 10 children aged between 6 and 14 years walk to school and 1 in 10 is driven. There are substantial differences between the regions with the German-speaking part having a higher share of walking and cycling and the French- and Italian-speaking parts having higher shares of children using public transport and being driven to school. The highest proportion of children taken to school by car is to be found in rich suburban communities, in the French-speaking part and in households with two and more cars. Over the past decade, the share of children walking to school has remained constant while bicycle trips have fallen significantly.

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49 A list of these traffic-calmed zones is regularly updated at http://www.begegnungszonen.ch.

50 Although it is true that the traffic-calmed area gains in environmental quality due to overall traffic reduction and reduction in noise and CO2 emissions, traffic is usually not eliminated but simply deviated elsewhere. Thus there is no significant gain at the agglomeration scale, except if a thorough policy aimed at decreasing the modal share of the car is implemented.

Walking provisions for an aging society necessary

Suffering from a great number of pedestrian casualties, the elderly remain a quite fragile group and one of great concern as the ageing population increases steadily. Already a person out of six in Switzerland is more than 65 years old. A newer and rather worrying phenomenon is seniors' car captivity when living in suburbia: as people grow old and may become incapable of driving, there are no alternative solutions to ensure good quality mobility in sparsely-populated less dense suburban and periurban areas. We are about to witness the arrival of the first generation of elderly that inhabit suburbia in great numbers. There haven't been yet any major policies addressing this demographic trend, which is bound to rise steadily in upcoming decades, if no measures are taken to reverse the phenomenon.

Though most hospitals and health & ageing care institutions are relatively secured as far as road crossings go, and usually benefit from a good accessibility, including for disabled people, many of these environments which are highly frequented by the elderly do not benefit from thoroughly walk-friendly designs, and amenities such as benches, railings and stair landings. Likewise access to commercial surfaces and public transport interfaces, though facilitated in the last decade and usually respecting minimum standards of accessibility and comfort, could still be improved in quite a number of ways for the elderly, especially regarding flux management and providing opportunities for a slower walking pace. Elderly walking goes beyond a safety problem. It also has to do with comfort, rhythm, adequate urban furniture to rest, green phase length at crossing lights, conflicts with other users, etc.

Cities such as Geneva are beginning to reflect upon urban design amenities to ensure the elderly a good quality environment to walk around the neighbourhood where they live. For the time being, most of these actions have been reduced in scale to very small perimeters. For instance walking networks taking into account the whole life basin have not yet been conceived with the elderly in mind, in order to facilitate access to their specific points of interest at the city scale.

Planning and measuring: still a way to go!

More and more cities, even middle-sized ones, are starting to include pedestrian masterplans as part of their general urban masterplans, and are implementing sets of measures to facilitate the emergence of walking networks throughout their urban tissue. Agglomerations are now following this same trend since funding for agglomeration projects is subject to the inclusion of human-powered mobility promotion schemes into an integrated built environment & transportation planning program. Sometimes these planning efforts are quite visible and coherent and their well-succeeded implementation results in an increase of walking levels, though this is not yet measurable as there are hardly any statistics purely dedicated to the fine-grained analysis of walking behaviour, and many initiatives are too recent for results to show clearly. While travel behaviour statistics are available at the national level and for larger cities, smaller towns lack that kind of information. They could compensate this to some degree with pedestrian counts. However, these are hardly done yet.

Though one may appreciate the added impetus of these new trends in pedestrian planning, one must regretfully acknowledge that most planning measures regarding walking, however interesting they may seem in paper, are simply not implemented for lack of funding or political support, or yet too slow to make their way out to the pavement because they are the first to suffer from ill-defined priorities.

Still a lot of cities and towns simply have no one responsible for designing and implementing walking-related policies and measures. Most public officials and professionals know walking issues only superficially, even when they are supposedly in charge of walking promotion. People do not really believe in walking as a solution, they tend to see it only as an extra problem to accommodate within overall more important urban planning and design issues. As a result of these hindrances, walking tends to remain unacknowledged and unaccounted for.

Public support does not necessarily put walking on the agenda!

Though public support is usually high in favour of walking-related measures, and in fact quite a few measures, such as traffic calming, stem from public demands, walking does suffer from a lack of visibility and a strong car lobby which may turn to ridicule many initiatives and hurt the image of the promotion measures made by local authorities that touch in any way to the car supremacy when vying for public space! Consensual measures usually have no trouble getting through, but measures that favour walking at the cost of motorised modes are usually implemented more slowly and with much more difficulty. Though several major legal steps have been taken these past few years, at federal and canton levels, at the local level, where implementation is to be carried out, political support (and consequently financial credit) is hard to get by. There is a certain amount of schizophrenia, amidst decision-makers, politicians, urban planners and traffic engineers alike, between a discourse favouring sustainable development and the promotion of human-powered mobility in the name of health and the environment, and the actual health promotion, urban development and transportation policies being implemented. In particular, a greater need of convergence between these three policies is sorely needed, and a much tougher stand is needed regarding the necessity of walking promotion and the priority this topic is to receive in the political agenda! Furthermore, politicians and decision-makers sometimes perceive a lack of enthusiasm from both their own public officials and the professionals that are supposed to help them to bring their visions into being! A general lack of confidence in walking potential and a persistence of the old references regarding transportation modes and needs are major hindrances to the emergence of a new walking culture! Besides the generation gap, a real lobby is needed to federate the actors involved with walking to bring this issue to the forefront of the scene.

From awareness to action, there are quite a few steps ahead!

All in all, one may say that a certain amount of measures promoting walking have been implemented in the last decade. Walking has received more awareness, and is slowly being incorporated into health, urban planning and transportation policies that aim towards sustainable mobility and active living. Locally, great achievements have sometimes been made, and some cities, especially the largest agglomerations (Zurich, Geneva, Basle, Bern) are clearly further ahead than others. One deplores the fact that many public authorities, let alone private promoters, are much too timid in their grasp of the importance of walking as the basic network conditioning the success of all other transport networks, particularly synergies that may emerge from multimodal walking, be it in combination with public transport or individual motorised transport. As a consequence, walking is still not perceived as a priority in many decision-makers' heads!

Switzerland has in many ways the potential to be a dreamland for walking. Many things have been done and are being done to facilitate walking, and overall one could say the country is more walk-friendly than most. On the other hand, from an insider's perspective, and when comparing with the full potential of the country, a lot more could be done to improve walking conditions and create a global context that favours walking, not only working on walking networks and pedestrian level of service along these networks, but also through overall urban planning measures such as improving density and land mix levels, opting for urban developments favouring short distances and the like. In the near future, clearly, we need more statistics, more thorough, large-scale walking networks, more urban planning and urban development projects taking walking fully into account, more communication, more sensitizing actions, more political support, and more money invested into bringing walking to the forefront!

Annex

A) Detailed descriptions of publications

This section is in chronological order according to the main text in chapter 3.2. The abstracts are often taken from the original publications but, unfortunately, the English in these abstracts is not always very comprehensible. Since the wording stems from the original author(s), no changes have been made to these texts.

Title	***Building costs for the most common pedestrian and bicycle infrastructure*** Baukosten der häufigsten Langsamverkehrsinfrastrukturen
Author(s) and their affiliation(s)	HOFSTETTER Markus, FARNER Christian (KONTEXTPLAN AG)
Abstract	This reference work is a resource for administrative authorities and the interested public to calculate the costs of most common infrastructure for pedestrian and bicycle traffic. The publication specifies building costs (status 2007), excluding land acquisition costs.
Kind of publication Commissioned by:	Reference work Swiss Federal Roads Office (Bundesamt für Strassen ASTRA)
Year of publication	2010
Availability	*www.astra.admin.ch*; *www.langsamverkehr.ch*
Comment / further information	In German, French and Italian (21 pages)

Title	***Traffic regulation systems – Handicapped and older people at signalized intersections*** Verkehrsregelungssysteme – Behinderte und ältere Menschen an Lichtsignalanlagen
Author(s) and their affiliation(s)	FERELLA FALDA Mauro (Studio d'Ingegneria Mauro Ferella Falda), BRUGNOLI Gianni (Brugnoli e Gottardi, Ingegneri consulenti SA), GRAHL Stefan (Grahl – Beratender Ingenieur für Systeme des Schienen- und Stassenverkehrs)
Abstract	Following the model of barrier-free constructions, this research paper aims to elaborate specific requirements for the mobility of disabled and elderly persons in road traffic and particularly at signalled intersections and crossings. The research project aims to analyze the actual planning and implementation status of traffic-related and structural measures for disabled and elderly people, to make proposals as to further developments, and to provide method-based help for planners and operators of traffic control systems. An update and, if necessary, an extension is both possible and foreseen on the basis of the results of the research findings.
Kind of publication Commissioned by:	Research report (Report VSS 1272) Swiss Federal Roads Office (Bundesamt für Strassen ASTRA)
Year of publication	2010
Availability	http://www.vss.ch/
Comment / further information	In German and French with summary in English (79 pages)

Title	***Slow moving traffic, Part 1: Pre-modern traffic conditions*** Der Langsamverkehr, Teil 1: Die vormodernen Bedingungen des Verkehrs
Author(s) and their affiliation(s)	SCHIEDT Hans-Ulrich (ViaStoria - Zentrum für Verkehrsgeschichte Universität Bern), Bundesamt für Strassen und Via Storia (Hrsg.)
Abstract	One of two pilot studies outlining a research project treating the history of slow moving traffic. Both studies aim to identify deficiencies in our understanding of slow moving traffic and thus serve as a basis for conducting a detailed research project. The present study discusses developments until the end of the 19th century, highlighting the various forms of pre-industrial and/or pre-modern transportation, including the use of riding, trailing and draught animals. It investigates the nature of such traffic as it developed historically along pathways such as hiking trails, footpaths, alleys and streets. The second study will focus on the 20th century and the introduction of human-powered forms of transportation in motorized traffic settings.
Kind of publication	Pilot Study

Commissioned by:	Via Storia, University of Berne
Year of publication	2009
Availability	
Comment / further information	In German only (65 pages)

Title	***Behaviour at pedestrian crossings*** Verhalten an Zebrastreifen
Author(s) and their affiliation(s)	THOMAS Christian M. , Fussverkehr Schweiz (Swiss Pedestrian Association)
Abstract	The aim of the present research project was to determine which measures (such as illumination, central island, visibility) and behaviours positively influence drivers to yield to crossing pedestrians. The study provides recommendations regarding behaviour at pedestrian crossings and suggests possible improvements at the sites of pedestrian crossings. This investigation was carried out in four steps. The starting point was a literature review. Numerous investigations are based on road accident data. However, this data only represent the few parameters that are registered in case of a road accident. Therefore, they are non-specific and confined to existing categories. In a second step, records were made with a laser scanner. This technology allows to record different road users simultaneously, their speed and direction. Though this recording method is assumed to have a vast potential, it turned out that the technology was not yet ready for use. In a third step, ten different situations on pedestrian crossings were recorded by video and 1'500 interactions between pedestrians and drivers were evaluated. The possibility of watching a sequence several times is very important. Even complex behavioural patterns can be evaluated and controlled in this way. Finally, the rate of vehicles stopping at the pedestrian crossing was registered by a series of tests. A test person was instructed to indicate his intent to cross the same way every time and the stopping rate was recorded.
Kind of publication Commissioned by:	Methodical help and quantitative analysis Fund for Road Safety (Fonds für Verkehrssicherheit)
Year of publication	2009
Availability	http://www.fussverkehr.ch
Comment / further information	In German only, with summaries in French and Italian (79 pages)

Title	***Pedestrian and bicycle traffic in town and in the countryside*** Zur Zeit: Eile mit Weile - Fuss- und Veloverkehr in der Stadt und auf dem Land
Author(s) and their affiliation(s)	VILLIGER Simon, Statistik Stadt Zürich
Abstract	Human-powered forms of transportation are both healthy and ecological. This publication compares human-powered mobility in the city of Zurich with that in rural areas. Are people in the countryside walking less than those in the city? In which situations do people go by bicycle? And what are the advantages of cycling? The publication is based on the *Swiss micro-census on traffic behaviour 2005*.
Kind of publication Commissioned by:	Statistical Report Statistik Stadt Zürich
Year of publication	2009
Availability	http://www.stadt-zuerich.ch/statistik
Comment / further information	In German only (11 pages)

Title	***Hiking in Switzerland 2008*** Wandern in der Schweiz 2008
Author(s) and their affiliation(s)	LAMPRECHT Markus, FISCHER Adrian, STAMM Hanspeter (Lamprecht & Stamm Sozialforschung und Beratung AG), 2009, Bundesamt für Strassen ASTRA
Abstract	Hiking is one of the most popular leisure and sport activities in Switzerland. 30% of the Swiss population hike at least from time to time. But who are the hikers? How often do they really go hiking? Which routes do they take and what kind of equipment do they use? What is their

	opinion about the Swiss hiking trail network? These are some of the questions which were treated in this survey.
Kind of publication Commissioned by:	
Year of publication	2009
Availability	www.langsamverkehr.ch; www.mobilite-douce.ch; www.traffico-lento.ch; www.wandern.ch www.randonner.ch; www.lsweb.ch
Comment / further information	In German, French and Italian (90 pages)

Title	***The ABC's of creating safe ways to school*** Das ABC der Schulwegsicherung
Author(s) and their affiliation(s)	REGLI Pascal, ZUERCHER Tonja, GLADOW Beatrice, Fussverkehr Schweiz
Abstract	The way to school is an important path in life – one that has changed dramatically in the last few decades due to the increase in road traffic and the potential danger it represents. Children cannot move as freely as their parents and their grandparents once did. They are required to be concentrated at all times: at home, in school and on the street. Parents are very worried about the safety of their children on the street. More than 5 children get hurt on Swiss streets every day. This publication, focussing upon the experience of children between 5 and 12 years of age, is a resource and a support for parents, educational authorities, teachers, municipal authorities, drivers and planning experts. It contains principles and recommendations for creating a safe way to school.
Kind of publication Commissioned by:	Guideline Fussverkehr Schweiz (Swiss Pedestrian Association)
Year of publication	2009
Availability	www.schulweg.ch; www.fussverkehr.ch
Comment / further information	In German only (32 pages)

Title	***Creating shopping areas, easily accessible by walking and cycling*** Erschliessung von Einkaufsgeschäften für den Fuss- und Veloverkehr
Author(s) and their affiliation(s)	BERNHARDSGRUETTER Andreas, SCHWEIZER Thomas, Fussverkehr Schweiz MERKLI Christoph, Pro Velo Schweiz
Abstract	Over fifty percent of the customers in shopping areas arrive by foot or bicycle. The present publication provides references to planners and public administrators to conceive and construct adequate infrastructure regarding pedestrian and bicycle traffic. Early consideration of the special needs of these transport means is important because a later upgrade to a insufficient core infrastructure is almost impossible. This publication is divided into two parts: Superior planning (chapter3) and Detail planning (chapter4).
Kind of publication Commissioned by:	
Year of publication	2009
Availability	www.fussverkehr.ch; www.pro-velo.ch
Comment / further information	In German and French (39 pages)

Title	***Flâneur d'Or 2008 – The award of pedestrian infrastructure*** Jurybericht Flâneur d'Or 2008 – Fussverkehrspreis Infrastruktur
Author(s) and their affiliation(s)	SCHWEIZER Thomas, Fussverkehr Schweiz
Abstract	The "Flâneur d'Or" is awarded to outstanding projects for planning of public areas, pedestrian-friendly streets and squares, as well as well-connected, attractive and safe pedestrian networks. The competition has been held six times (previously called "Sicher zu Fuss" / "A pied c'est sûr!"). The next call for entries will be made in 2011.
Kind of publication	Jury report

Commissioned by:	
Year of publication	2009
Availability	www.flaneurdor.ch; www.fussverkehr.ch; http://www.astra.admin.ch/themen/langsamverkehr
Comment / further information	In German, French and Italian (30 pages)

Title	***Mobility of children and adolescents. Facts and trends based on the evaluation of the microscensuses on travel behaviour 1994, 2000 and 2005*** Mobilität von Kindern und Jugendlichen. Fakten und Trends aus den Mikrozensen zum Verkehrsverhalten 1994, 2000 und 2005
Author(s) and their affiliation(s)	SAUTER Daniel, (Urban Mobility Research, Zürich)
Abstract	Follow-up study on the travel behaviour of children, adolescents and young adults undertaken two years earlier with data of the latest travel census (2005). The research shows in detail how everyday mobility patterns have changed over the past 11 years, particularly trips to school and in leisure. Children and adolescents are differently mobile in everyday life than the adult population. The most important means of locomotion for children are their own two feet and the bicycle, particularly to and from school. In the case of adolescents, public transport plays a more important role on these trips. For leisure activities, children and adolescents make proportionately more trips by motorized means of transportation. While the share of walking stayed fairly constant between 1994 and 2005, the share of cycle trips dropped dramatically.
Kind of publication Commissioned by:	Report with detailed analysis as part of the monitoring efforts on slow mobility Swiss Federal Roads Office (section on slow mobility)
Year of publication	2008
Availability	http://www.astra.admin.ch/themen/langsamverkehr
Comment / further information	In German with summaries in French and English (127 pages)

Title	***Crossings for the pedestrian and cycle traffic*** Querungen für den Fuss- und leichten Zweiradverkehr
Author(s) and their affiliation(s)	GROB Daniel, (GrobPlanung GmbH), PESTALOZZI Christian, (Pestalozzi & Stäheli)
Abstract	This research report regulates the domain of crossings of the pedestrian and cycle traffic both conceptual and literally: For the first time there exists a comprehensive basis for the designation of the need and accurate evaluation of the proper type of a crossing. It postulates a holistic and systematic strategy wherewith the nowadays in the foreground standing question “zebras yes or no?” becomes less important. This report contents a qualitative and partly quantitative decision guidance. It points out, that the choice of the crossing type depends on a larger number of sometimes complex factors and is only partial affected by the volume of traffic. Within this research a new concept of standardisation of the topic pedestrian and cycle crossings has been designed.
Kind of publication Commissioned by:	Research report (Report VSS 1218) Swiss Federal Roads Office FEDRO (Bundesamt für Strassen ASTRA)
Year of publication	2008
Availability	http://www.vss.ch
Comment / further information	In German and French with summary in English (52 pages)

Title	***Muscle-powered mobility, Base document for Switzerland*** Mit Muskelkraft unterwegs, Grundlagendokument
Author(s) and their affiliation(s)	MARTIN-DIENER Eva, Federal Office of Sport FOSPO (Bundesamt für Sport BASPO)
Abstract	This booklet is aimed at specialists who are interested in gaining an overview of physical activity and mobility issues. It provides facts and arguments, illustrates relationships and

	points out initiatives that can be taken to promote “human powered mobility”. Regular physical activity or regular sport that is at least equivalent in intensity to brisk walking provides effective protection against numerous physical and mental health problems. From a health perspective, the promotion of physical activity is particularly important in the case of people who are insufficiently active, since they derive the greatest health benefit from more physical activity. Walking and cycling are particularly accessible forms of exercise for this group. How much walking and cycling we do is influenced by a wide range of factors. Some of these factors − such as age, sex, weather or local topography − are beyond our control. However, personal factors such as attitude and motivation − and also factors in our living environment − can be changed through appropriate measures so as to enhance “human powered mobility”.
Kind of publication Commissioned by:	Basic documentation for specialists Federal Office of Sport FOSPO, Federal Office of Public Health FOPH, Network HEPA Switzerland
Year of publication	2008
Availability	www.hepa.ch >Dokumentationen
Comment / further information	In German, French and English (27 pages)

Title	***Marked “pedestrian safety islands” – Evaluation of the changing of the behaviour of pedestrians and drivers*** Markierte Fussgängerschutzinseln – Evaluation der Veränderungen im Verhalten von Zufussgehenden und Fahrzeuglenkenden
Author(s) and their affiliation(s)	SCHWEIZER Thomas, ZÜERCHER Tonja, ALTHERR Viktor, STEINER Rolf, ZOTH Johannes, Fussverkehr Schweiz, Kt. Aargau BVU
Abstract	The marking of “pedestrian safety islands” is positively correlated to the right of way of pedestrians being respected more often. The communication between crossing pedestrians and drivers can also be improved thereby. But compared to the built “pedestrian safety island”, the marked “pedestrian safety island” does fare as well: the stopping rate is somewhat higher with a built island. Furthermore, pedestrians feel safer while crossing a built island than while crossing a marked island. The evaluation analyses the situation before (crosswalk without island) and after (crosswalk with marked island).
Kind of publication Commissioned by:	Evaluation
Year of publication	2008
Availability	http://www.ag.ch/tiefbau-> Downloads; www.fussverkehr.ch/publikationen.php
Comment / further information	In German only (46 pages)

Title	***Temporary use of public areas, recommendations for authorization provisions*** Vorübergehende Benützung des öffentlichen Grundes, Regelungsvorschläge für Boulevardcafés und Warenauslagen von Verkaufsläden
Author(s) and their affiliation(s)	SCHWEIZER Thomas, FASCIATI Janet, Fussverkehr Schweiz
Abstract	Businesses desiring to use public areas for open-air seating or the display of merchandise must first apply for authorization. The provisions of that authorization are usually subject to municipal building code. The present publication is both a guideline for applicants as well as a tool to aid municipalities in the creation of their own authorization provisions. A tabulated summary of the provisions of five municipalities, illustrative examples of pedestrian needs, a checklist of provisions and their targets as well as a support tool for the wording of appropriate building codes are presented.
Kind of publication Commissioned by:	
Year of publication	2008
Availability	www.fussverkehr.ch
Comment / further information	In German only (10 pages)

Title	***Baden: Impact analysis about the footbridge over the Limmat river and the elevator on its end*** Baden: Wirkungsanalyse Limmatsteg und Promenadenlift
Author(s) and their affiliation(s)	Katharina Meyer, Pascal Regli, Fussverkehr Schweiz
Abstract	In the Summer of 2007, a footbridge over the Limmat river was built to connect Baden and Ennetbaden. At the end of the bridge there is an elevator which connects the footbridge with the Baden train station. The footbridge is expected to promote pedestrian and bicycle traffic, to increase the attractiveness of the centre and the number of shoppers, to connect the quarters of Ennetbaden with the railway station, and to revitalize the square in front of the station.
Kind of publication Commissioned by:	Analysis
Year of publication	2008
Availability	*www.fussverkehr.ch*
Comment / further information	In German only (10 pages)

Title	***Accidents in "encounter zones"*** *(encounter zones: area where the speed limit is 20 km/h and pedestrians have precedence)* Unfallgeschehen in Begegnungszonen
Author(s) and their affiliation(s)	SCHWEIZER Thomas, FASCIATI Janet, Fussverkehr Schweiz
Abstract	Concerns regarding the potentially negative effects of "encounter zones", e.g. an increased likelihood of accidents, are unfounded. At the same time, such zones do not appear to contribute significantly to a reduction in the number of accidents. Thus, the net effect of "encounter zones" is minimal.
Kind of publication Commissioned by:	Analysis
Year of publication	2008
Availability	*www.fussverkehr.ch*
Comment / further information	In German only (10 pages)

Title	***Pedestrian navigation in public spaces: needs assessment and sketch of solutions*** La navigation pédestre dans l'espace public: évaluation des besoins et esquisses de solutions
Author(s) and their affiliation(s)	GILLIERON Pierre-Yves, CHAZAL Véronique, DELAVY Thomas (TOPO-EPFL), FLAMM Michael (LASUR-EPFL), VON DER MUEHLL Dominique, RUZICKA-ROSSIER Monique (Chôros-EPFL)
Abstract	Pedestrian navigation (tools and interactive services allowing orientation and guidance in unknown places or inside great complexes, such as campus, airports, big shopping centers, etc.) raises questions on real needs among the population. What is technically possible is not necessarily useful, or financially possible. Aim of this interdisciplinary research was to bring together the approach of the engineer (TOPO), the urbanist (CHOROS) and the sociologist (LASUR), in order to investigate the potential and the opportunities of pedestrian navigation. The research highlights both users' needs and technological state-of-the-art, and focuses on a case-study as a test (blind user in the context of a railway station). It identifies a typology of situations and users where pedestrian navigation could be useful.
Kind of publication Commissioned by:	Research commissioned by the Institute of Territorial Development of the Ecole polytechnique fédérale of Lausanne (INTER-EPFL).
Year of publication	2008
Availability	Final report can be downloaded on: *http://infoscience.epfl.ch/record/139461* (French only)
Comment / further information	Internal research context, initiated by the Institute for the Territorial Development of the Ecole polytechnique fédérale of Lausanne. Aim of such projects (about three per year) is to impulse cooperation and synergies among laboratories, researchers and disciplines through common projects.

Title	***Enhancement of GIS through a process of formalizing the concept of pedestrian accessibility*** Valorisation des SIG dans une démarche de formalisation du concept d'accessibilité piétonne
Author(s) and their affiliation(s)	LENOIR Vincent student at the EPFL (Environmental Science and Engineering Section) Ecole polytechnique fédérale de Lausanne EPFL
Abstract	Cartography concerning pedestrians is very poor comparing to motorized modes, and motorized models generally don't fit when one wants to represent walking topics and argue about pedestrian needs. An interesting example was developed in Geneva (town administration) showing how a public space looks like if bent depending on time spent to cross over it. This master study will deal with representing pedestrian networks, taking in account various functional as well as "sensible" variables. It will, for example, bent representation of the 500 m circles around public transport stops depending on detours, time spent on crossings, slope, etc. as well as safety, security, comfort, amenities,… The report presents a state-of-the-art of methods of representation concerning walking and pedestrians, identifies the potential and needs in representing walking, tests cartography and sketches relevant indicators, based on a case study in a suburban area (Crissier, near Lausanne).
Kind of publication Commissioned by:	Master degree study Academic support: Prof. François GOLAY and Eduardo Camacho-Huebner (LASIG-EPFL), Dominique von der Mühll (Chôros-EPFL).
Year of publication	2007
Availability	http://sirs.epfl.ch/recherche/diplomes.shtml
Comment / further information	In French only (156 pages)

Title	***Conflict analysis in mixed traffic*** Konfliktanalyse beim Mischverkehr
Author(s) and their affiliation(s)	DÖRNENBURG Klaus (Sigmaplan, Bern) *kdoernenburg@sigmaplan.ch*
Abstract	In the past, the mixing of various types of traffic in the same traffic area occurred by chance and was not done deliberately, because the separation of traffic was considered to be necessary in order to ensure road safety. This assessment has been found to involve some problems and nowadays mixing is increasingly being deliberately applied in order to promote mutual consideration and improve traffic safety as well as to provide a more effective use of scarce space and also a better harmony between traffic management and the surrounding lived-in areas (lower speed level, considerations related to urban planning). However, this is not possible in all situations. The purpose of this work was to examine existing literature, to develop a method of analysis and to apply this to case histories and also to extract from them consequences for the application and design of mixed traffic solutions.
Kind of publication Commissioned by:	Research report (Report SVI 1178) Swiss Federal Roads Office FEDRO (Bundesamt für Strassen ASTRA)
Year of publication	2007
Availability	http://www.vss.ch/
Comment / further information	In German and French with summary in English (67 pages)

Title	***Pedestrian and bicycle traffic on shared areas*** Fuss- und Veloverkehr auf gemeinsamen Flächen
Author(s) and their affiliation(s)	BUTZ Marlène, MERKLI Christoph, SCHWEIZER Thomas, THOMAS Christian, Fussverkehr Schweiz, Pro Velo Schweiz
Abstract	Senior and handicapped pedestrians are responding very sensitive to interferences. So they are dependent on areas which are reserved only for pedestrians. That is why an opening for bicycle traffic makes no sense in any case. Shared areas for pedestrian and bicycle traffic make sense in case of wide ways and low rate of interactions. The speed of the bicycles has to be holding on a low level. Therefore shared areas shouldn't have a longitudinal gradient. With markings and arrangements shared areas could be organized conflict free. The application of different coatings for example can head the bicycle traffic.
Kind of publication Commissioned by:	
Year of publication	2007

Availability	www.fussverkehr.ch; www.pro-velo.ch
Comment / further information	In German, French and Italian (50 pages)

Title	***Burgdorf: Model city for walking and cycling. Final report 1996-2006*** FuVeMo Fussgänger- und Velomodellstadt Burgdorf. Abschlussbericht 1996-2006
Author(s) and their affiliation(s)	RENARD Aline, EGGENSCHWILER Heidi, Stadt Burgdorf
Abstract	During ten years the little town of Burgdorf developed a range of experiments for promoting walking and cycling, in the frame of the program Energy 2000 (now SwissEnergy). This final report reminds on the context and aims of the project, the partners involved, describes the many activities and realisations, as well as unrealized projects. It contains a summary of the evaluation *(see: General Evaluation on the Model City)* and explains how this project will go on.
Kind of publication Commissioned by:	Report. FuVeMo
Year of publication	2007
Availability	Downloadable on the website of the city of Burgdorf (www.burgdorf.ch > Umwelt > FUVEMO).
Comment / further information	In German only (40 pages).

Title	***General evaluation of the model city for walking and cycling, Burgdorf*** Gesamtevaluation Fussgänger- und Velomodellstadt Burgdorf
Author(s) and their affiliation(s)	FRICK Roman (INFRAS), MAIBACH Markus (INFRAS), TRAGESER Judith (INFRAS), RINDSFÜSER Guido (Emch+Berger)
Abstract	This evaluation report on all activities developed during the two phases (1996-2002 and 2002-2006) in Burgdorf as a Model city for walking and cycling. It aims to evaluate: - to what extent the (quantitative and qualitative) objectives were achieved - the cost benefit relationship of the measures - the factors that contribute to success or failure - the contribution of this experience concerning the modal split, as well as the objectives of the national policies concerning energy and environment - which effects were observed regarding fields beside traffic - how long some effects of this experience were observed in other swiss towns or villages. The analysis is based on previous studies, specific reports (evaluation of the home delivery service), traffic measures, questionnaires and interviews.
Kind of publication Commissioned by:	Evaluation report on all activities. FuVeMo.
Year of publication	2006 (December)
Availability	Downloadable on the website of the city of Burgdorf (www.burgdorf.ch > Umwelt > FUVEMO)
Comment / further information	In German only (118 pages).

Title	***Reflexions on a marketing approach for pedestrian and bicycle traffic. Methods to analyse, find strategies and create packages for promotion measures*** Überlegungen zu einem Marketingansatz im Fuss- und Veloverkehr. Methodik zur Analyse, Strategiefindung und Paketbildung von Fördermassnahmen
Author(s) and their affiliation(s)	BLUMENSTEIN Andreas, WÄLTI Martin (Büro für Mobilität AG), HASLER, Paul (büro für utopien, Burgdorf), KISSLING, P. (LP Ingenieure AG Bern), MASCIADRI P. (Masciadri communication & design AG Bern)
Abstract	The report suggests adapting the classic marketing approach to promote walking and cycling. By creating packages instead of single measures synergies can be gained. The research showed, however, that the generated models of packages (including several measures) are too general to be turned into standard practice, so the methods need to be adapted.
Kind of publication Commissioned by:	Research report Research project commissioned by the Swiss Association of Transportation Engineers on behalf of the Swiss Federal Roads Office

Year of publication	2007
Availability	Printed report can be ordered from: Swiss Association of Road and Transportation Experts (VSS), Seefeldstrasse 9, CH – 8008 Zürich, www.vss.ch
Comment / further information	Report in German (69 pages and annex) Summaries in German, English, French (1 page each)

Title	***Pedestrian traffic, accident patterns, risk factors and prevention. Safety documentation*** Fussverkehr, Unfallgeschehen, Risikofaktoren und Prävention. Sicherheitsdossier.
Author(s) and their affiliation(s)	WALTER Esther, CAVEGN Mario, SCARAMUZZA Gianantionio et al. Beratungsstelle für Unfallverhütung, Bern
Abstract	The research is based on an analysis of accidents involving pedestrians (800 killed every year in Switzerland), in order to identify risk factors for this group of road users and ways to prevent these accidents, and to formulate recommendations. The results are interesting, as they do not only "charge" pedestrians of their own safety: speed limit is considered as very important, as well as the possibility for the pedestrians (in particular children and elder people) to cross the road in safety. The road education is considered as important, for children at school but also for drivers.
Kind of publication Commissioned by:	Research report, edited by the Office for the Prevention of Accidents, with a financial support from the Road Safety Fund.
Year of publication	2007
Availability	Beratungsstelle für Unfallverhütung, Bern, www.bfu.ch (downloadable)
Comment / further information	In German (400 pages). The report contains summaries and short versions (18 pages) in German, in French and in Italian.

Title	***Walking and cycling on common ground (shared space). Recommendations to judge suitability, introduction, organisation and design of shared spaces in the built-up area.*** Fuss- und Veloverkehr auf gemeinsamen Flächen. Empfehlungen für die Eignungsbeurteilung, Einführung, Organisation und Gestaltung von gemeinsamen Flächen in innerörtlichen Situationen
Author(s) and their affiliation(s)	BUTZ Marlène, MERKLI Christoph, SCHWEIZER Thomas, THOMAS Christian, Fussverkehr Schweiz und Pro Velo Schweiz (Hrsg.)
Abstract	Shared surfaces between pedestrians and cyclists can cause some safety of confort problems. This report reminds on the respective needs of pedestrians and of cyclists, informs on the legal frame, and presents recommendations and best practices in the field, in different situations.
Kind of publication Commissioned by:	Guidelines for realization. Fussverkehr Schweiz and IG Velo, with financial support from the Road Safety Fund, the Road Federal Office and the town of Zurich.
Year of publication	2007
Availability	A summary (in German and in French) can be downloaded and report be ordered on the website of Fussverkehr Schweiz (www.fussverkehr.ch > Aktuell).
Comment / further information	In German and in French, 50 pages.

Title	***Human-powered mobility in the agglomeration programmes*** Der Langsamverkehr in den Agglomerationsprogrammen. Arbeitshilfe
Author(s) and their affiliation(s)	RUPP Marco, GASPOZ-FLEINER Daniela, FOLETTI Francesca, BURKHALTER Markus (ecoptima ag).
Abstract	The "agglomeration programmes" *(see chapter 5)* have to take in account slow mobility as one of the criteria that are requested in order to obtain a financial support from the Confederation. Despite of this, many programmes don't really pay attention to pedestrians and cyclists. This document aims to remind on this requirement, explains how it has to be done and presents some good practices.
Kind of publication Commissioned by:	Bundesamt für Strassen (Hrsg.), Materialien Langsamverkehr Nr. 112
Year of publication	2007

Availability	Website of the Road Federal Office (*www.astra.admin.ch* > Langsamverkehr/Mobilité douce/Traffico lento > Materialen/Documentation/Documentazione (downloadable).
Comment / further information	In German, in French and in Italian (35 pages).

Title	***Human-powered Cities: Sustainable Trends in Health, Mobility and Urbanism - ANR SEST 05 VqM*** Des villes qui marchent : tendances durables en santé, mobilité et urbanisme - ANR SEST 05 VqM
Author(s) and their affiliation(s)	WINKIN Yves, LAVADINHO Sonia (Coord.) Ecole Normale Supérieure Lettres et Sciences Humaines de Lyon (ENS-LSH)
Abstract	Human-powered mobility, walking in particular, is a cheap and effective way to limit the increasing individual and collective health cost burden of sedentary behaviour and overweight-related health problems, while helping to reduce traffic-related nuisances and improve quality of life standards in urban areas. This two-year research compares the characteristics of the built environment of walkable and less walkable neighbourhoods of Geneva and Grenoble. This interdisciplinary research begins by successively adopting the point of view of the sociologist and the urbanist, with the help of qualitative methods for measuring urban design quality and atmosphere as well as users' expectations and practices regarding walking in these neighbourhoods, and then proceeds to adopt the point of view of the health practitioner by measuring the intensity of physical activity in the form of walking and comparing the walking profiles for these different neighbourhoods through a quantitative survey based on a combination of the standardised IPAC and NEWS surveys. The results show that the built environment has a certain impact on the way people consider walking, though this effect is mitigated by other personal and social factors.
Kind of publication Commissioned by:	Research report commissioned by the French National Research Agency (ANR), programme SEST 05. Health chapter co-commissioned by the State of Geneva.
Year of publication	2008
Availability	ENS-LSH site *www.ens-lsh.fr* (April 2008)
Comment / further information	In French

Title	***The relation between the built environment and physical activity in the form of walking. Quantitative study of walking behaviour in two city districts in the city of Zurich*** La relation entre l'environnement construit et l'activité physique sous forme de déplacements à pied. Etude quantitative du comportement de marche dans deux quartiers de la ville de Zurich SCHMID, Jonas, Institut de géographie, Faculté des géosciences et de l'environnement Université de Lausanne, 2006 ***City on the move*** Stadt in Bewegung. Die Fortbewegung aus eigener Muskelkraft in den Zürcher Stadtquartieren Witikon und Seefeld SCHMID Jonas, Stadt Zürich, Präsidialdepartement 2007 ***Urban environment and physical activity behaviour. An analysis of objectively measured physical activity in Witikon and Seefeld, two districts of the city of Zurich*** Städtische Umwelt und Bewegungsverhalten. Eine Auswertung objektiv gemessener körperlicher Aktivität in den Zürcher Stadtquartieren Witikon und Seefeld SCHMID Jonas, study commissioned by the Federal Institute of Sport, Magglingen, 2007
Author(s) and their affiliation(s)	SCHMID Jonas
Abstract	The research compares the intensity of physical activity in the form of walking between two neighbourhoods in the city of Zurich – one highly walkable, the other less so. People in the two neighbourhoods were surveyed about their walking patterns. In an additional study, accelerometers were used to determine the walking intensity objectively. The results show that the built environment (walkability) has an effect on how much and for how long people walk although not to a degree shown in studies abroad (e.g. in North America)
Kind of publication Commissioned by:	Master thesis and summary reports

Year of publication	Thesis: 2006, summary and additional research: 2007
Availability	Original master thesis: www.unil.ch/igul > l'enseignement > licence ès lettres > mémoires de licence > base de données Summary city of Zurich : www.stadt-zuerich.ch/statistik
Comment / further information	All three publications are based on the same original study – the master thesis by Jonas Schmid. The city of Zurich published a summary based on it and the Federal Institute of Sports commissioned additional research with accelerometers

Title	***Pedestrian Level of Service, A model to evaluate pedestrian spaces, a tool for urban space planning*** Pedestrian Level of Service, Un modèle d'évaluation pour l'espace piéton, un outil de planification pour l'espace urbain
Author(s) and their affiliation(s)	BALDI Gabrio Master degree student at the Geographic Institute at University of Lausanne
Abstract	The report is divided in three parts: 1) general theoretical approach about walking and pedestrians, 2) state of research regarding Pedestrian Level of Service, 3) application in a real case (a district in a little town: Gland). One of the rare student reports on walking. Key words: urban mobility, walking, indicators, public space, pedestrian, level of service, walkability, evaluation scale
Kind of publication Commissioned by:	Diploma thesis
Year of publication	2006
Availability	Geographic Institute (consult only)
Comment / further information	in French

Title	***Constitutional basis for slow transport modes*** Verfassungsgrundlagen des Langsamverkehrs (Teil 1, Teil 2)
Author(s) and their affiliation(s)	KELLER Helen, HAUSER Mario Umbricht Rechtsanwälte, Zurich *(Attorneys Umbricht)*
Abstract	Linked to the project of Slow Mobility Master Plan (see this document), the study constitutes a legal compendium to clarify the competence of the Confederation regarding policies and measures in favour of pedestrians and cyclists. It deals with constitutional basis that can be used to promote slow mobility at federal level and points lacks that could be filled.
Kind of publication Commissioned by:	Materialien Langsamverkehr n°111 Road Federal Office, Bern
Year of publication	2006
Availability	http://www.astra.admin.ch/themen/langsamverkehr/index.html?lang=fr see "Dossiers stratégiques" or attorneys@umbricht.ch
Comment / further information	In German only (no summaries).

Title	***Central areas without pedestrian crossings*** Fussgängerstreifenlose Ortszentren
Author(s) and their affiliation(s)	GHIELMETTI Marco, Ingenieurbürp Ghielmetti, Winterthur VON HEBENSTREIT B., JÖRI H., IAP Institut für Angewandte Psychologie, Zürich
Abstract	Central areas are often separated by roads, which diminish the attractiveness for shops, customers and residents. On one hand crosswalks facilitate the road crossing, on the other hand they force pedestrians to detours and produce increased immissions due to stop-and-go-traffic of motor vehicles. Recently experiments with central areas without crosswalks are taking place; crossings occur in general under mutual respect. The research project demonstrated the conditions and limits of central areas without crosswalks.
Kind of publication Commissioned by:	Research project commissioned by the Swiss Association of Transportation Engineers on behalf of the Swiss Federal Roads Office Forschungsauftrag SVI 2002/001
Year of publication	2006

Availability	www.hapzh.ch/download/Schlussb_Studie_Fussgaenger.pdf
Comment / further information	In German with summaries in German, French and English (one page).

Title	***Elderly people and road safety. From analysis to prevention*** Senioren und Verkehrssicherheit. Von der Analyse zur Prävention.
Author(s) and their affiliation(s)	RYTZ Michael, Verkehrsclub der Schweiz
Abstract	The report is based on an analysis of accidents involving elderly people, literature review and interviews of experts in order to identify the causes of accidents and the ways to prevent them (regarding planning, infrastructure, vehicles, controls, road education). The report is destined to people dealing with road safety and elderly people, and aims to inform about elder people abilities (or disabilities) in traffic, their needs, and how to contribute to less accidents and deaths of elder people in traffic.
Kind of publication Commissioned by:	Research report. Verkehrsclub der Schweiz, with a financial support from the Road Safety Fund.
Year of publication	2006
Availability	VCS/ATE, downloadable or to be ordered on the website (*www.verkehrsclub.ch* > research key word „Senioren und Verkehrssicherheit“).
Comment / further information	In German only (88 pages). This document is more a research report than a guideline. Elderly people are considered as pedestrians, but also as drivers and as cyclists.

Title	***Ways out of blind alleys – Signage of blind alleys, which are continuous for pedestrian and bicycle traffic*** Wege aus den Sackgassen – Signalisation von Sackgassen, die für Fuss- und Veloverkehr durchgehend sind
Author(s) and their affiliation(s)	THOMAS Christian und DISCHL Raphael Fussverkehr Schweiz
Abstract	The signal „blind alley“ marks a road, that isn’t continuous. Often, this is valid only for motorised traffic. For pedestrians and cyclists it is often unclear at the beginning of a blind alley, if the road goes on at the end. In these projects, a new signalisation is developed and tested in three municipalities.
Kind of publication Status of report	Report based on research commissioned by the Swiss Federal Roads Office and carried out within the European “spatialmetro” project (see: *www.spatialmetro.org*)
Year of publication	2006
Availability	*http://www.fussverkehr.ch/publikationen.php*
Comment / further information	In German only

Title	***CO2 potential of slow transport modes, shift of short car trips*** CO2-Potenzial des Langsamverkehrs, Verlagerung von kurzen MIV-Fahrten
Author(s) and their affiliation(s)	FRICK Roman, WUETHRICH Philipp, KELLER Mario INFRAS (private and independent consulting group providing policy analysis and implementation services to private and public organisations)
Abstract	As per the CO2 law, by the year 2010 Switzerland is obliged to reduce CO2 emissions by 10% compared with 1990. The study concentrates to the transfer potential of short MIT (motorised individual transport) journeys to non-motorised transport. A distinction is made between “technical” and “realisable” potential. The “technical” potential takes account of external hindrances, such as weather, topography, settlement density, traffic purpose or complexity of the mobility chains. The “realisable” potential also takes into account effective hindrance factors of an economic, social, individual nature, as well as those resulting from (transport) political framework conditions. Three future scenarios of differing transport-political levels of intervention are formulated, and potential (technical transfer potential and achievable potential) is evaluated.
Kind of publication Commissioned by:	Report Road Federal Office, Bern

Year of publication	2005
Availability	http://www.astra.admin.ch/themen/langsamverkehr/index.html?lang=fr see “Documentation”.
Comment / further information	In German (76 pages), summaries in English and in French (5 pages)

Title	***Registry of problem situations for slow transport modes. Report based on the experiences made in Langenthal. Relevant information on construction, implementation and follow-up of a tool to improve conditions for slow transport modes*** Problemstellenkataster Langsamverkehr, Erfahrungsbericht am Beispiel Langenthal, Hinweise zur Erstellung, Umsetzung und Nachführung eines Instrumentes zur Verbesserung der Bedingungen für den Langsamverkehr
Author(s) and their affiliation(s)	GROB Daniel (GrobPlanung GmbH) and Büro für Mobilität AG Bern
Abstract	The study has been financed by the Road Federal Office as a pilot project. It aimed to develop a systematic method to point problems for walking and cycling at scale of a whole town, in collaboration with inhabitants and local administration. Interested persons were invited to participate and were involved to spot problems. Priorities were defined to solve problems. Results are synthesized on a map and specific sheets that constitute a tool and a reference for the authorities and local administration. The method and the process can be transferred to other towns and villages.
Kind of publication Commissioned by:	Report Road Federal Office and Town of Langenthal
Year of publication	2005
Availability	http://www.astra.admin.ch/themen/langsamverkehr/index.html?lang=fr see “Documentation” (download file) or Daniel Grob, info@grobplanung.ch
Comment / further information	In German (28 pages). A second report (“Materialen”) is an appendix containing base documentation, documents used to collect data, problems register and photos illustrating the different problems.

Title	***New means to PROMote Pedestrian Traffic in cities (Swiss report)*** Neue Massnahmen zur Förderung des Fussverkehrs in Städten
Author(s) and their affiliation(s)	HÜSLER Willi, SCHMID Ingrid; Ing.büro für Verkehrsplanung W. Hüsler AG, Zürich
Abstract	This is the final report of the Swiss research in PROMPT. PROMPT is a joint European research effort, funded by the European Commission under the Key Action “The City of Tomorrow and Cultural Heritage” of its Fifth Framework Program “Energy, Environment and Sustainable Development”. The researchers studied through 22 selected case studies in all the six participating countries (Belgium, Finland, France, Italy, Norway and Switzerland) the conditions for pedestrians in the urban environment, according to *safety*, *accessibility*, *comfort*, *attractiveness* and *intermodality*. Problems of implementation measures and possible solutions promoting pedestrians were discussed together with experts of the Swiss response group. Substantial suggestions for solutions to promote pedestrian traffic in cities are the result of the study.
Kind of publication Status of report	Report based on research commissioned by the European Commission under the Key Action “The City of Tomorrow and Cultural Heritage” in its Fifth Framework Program “Energy, Environment and Sustainable Development” and funded in Switzerland by the Swiss Federal Roads Office, the Federal Office for Education and Science and the Federal Office for Spatial Development
Year of publication	2005
Availability	Official website of FEDRO (walking and cycling): www.langsamverkehr.ch
Comment / further information	German with summaries in German, English, French (2 pages each) The final report of PROMPT of all countries can be found on the website: http://prompt.vtt.fi

Title	***Mobility of children and adolescents. A comparative evaluation of the microscensuses on travel behaviour 1994 and 2000*** Mobilität von Kindern und Jugendlichen - Eine vergleichende Auswertung der Mikrozensen zum Verkehrsverhalten 1994 und 2000

Author(s) and their affiliation(s)	SAUTER Daniel, Urban Mobility Research, Zürich
Abstract	This study is based on an evaluation of the two microcensuses on travel behaviour carried out in Switzerland in 1994 and 2000 and describes in detail for the first time the current level of everyday mobility of children, adolescents and young adults. Access to the means of transport and the travel patterns to and from school and leisure activities are the main focus of the research. Conclusions and recommendations are formulated concerning measures for political implementations (promoting walking and cycling for short distances and making physically active travel more attractive, supporting individuals in car-free households) and proposals for future surveys.
Kind of publication Status of report	Research project commissioned by the Swiss Federal Office of Sports, supported by the Swiss Federal Roads Office
Year of publication	2005
Availability	www.langsamverkehr.ch; www.seark.ch
Comment / further information	In German with summaries in German, English, French (5 pages each) A follow-up study with the latest travel census data will be published by the end of 2007

Title	***Survey of pedestrian and cycle traffic and use of public space at the Limmatquai (river-front street in Zurich)*** Erhebung des Fuss- und Veloverkehrs und der Aufenthaltsnutzung am Limmatquai
Author(s) and their affiliation(s)	SAUTER Daniel, Urban Mobility Research
Abstract	In September 2004 a new traffic regime was introduced at the Limmatquai in Zurich. Motorised traffic was diverted, while public transport and bicycles are still free to circulate. Access for residents, taxis and delivery vehicles is possible. The speed limit lies at 30 km/h. Two surveys were undertaken: One in 2004, before the reorganization, and one in 2005 after. It is shown how the pedestrian and cycle traffic and the use of public space developed as a consequence of the reorganization. A third study is planned for 2008.
Kind of publication Status of report	Two reports (with results from before and after surveys)
Availability	The reports can be downloaded from the city of Zurich website http://www.stadt-zuerich.ch/internet/taz/home/mobilitaet/fuss_veloverkehr_.html or from www.seark.ch
Year of publication	2004 and 2005
Comment / further information	In German only

Title	***Concept for statistical evaluation of Slow Mobility*** Konzept Langsamverkehrsstatistik
Author(s) and their affiliation(s)	WUETHRICH Philipp, FRICK Roman, KELLER Mario (INFRAS) INFRAS (private and independent consulting group providing policy analysis and implementation services to private and public organisations)
Abstract	Statistical data on human-powered mobility (HPM) is not as comprehensive as it is for individual motorised transport and public transport. The aim of this project is to provide the conceptual basis for developing Swiss HPM statistics. Based on a compilation of available data on HPM in Switzerland and additional examples from abroad, the needs and requirements of a system of national HPM statistics were compiled into a wish list in a round of interviews with HPM experts. The criteria fall into “must have” criteria as well as other secondaty criteria. This concept should act as a basis for the federal government to devise a detailed implementation plan.
Kind of publication Commissioned by:	Report Federal Roads Office
Year of publication	2005
Availability	http://www.astra.admin.ch/themen/langsamverkehr/index.html?lang=fr see “Documentation”
Comment / further information	In German (82 pages), summaries in French and in English (2 pages) The study has been accompanied by a support group composed by federal administration representatives, specialized professionals and NGO.

Title	***Surveying pedestrian and cycle traffic*** Erhebung des Fuss- und Veloverkehrs
Author(s) and their affiliation(s)	ZWEIBRÜCKEN Klaus, BEAUJEAN Katja, IRAP, Hochschule für Technik, Rapperswil SCHWEIZER Thomas, Fussverkehr Schweiz, Zürich STÄHELI Andreas, Pestalozzi & Stäheli, Basel SAUTER Daniel, Urban Mobility Research, Zürich
Abstract	The research project has as its objective a compilation of recommendations for the conception, execution and evaluation of studies on pedestrian and cycle traffic. Both, the state of knowledge of current survey methods as well as available instruments and technical equipment formed the basis of the evaluation. Special pilot studies were carried out. The recommendations for surveys concern the following questions: - Survey purpose and task definition - Needed accuracy and comparability of the results - Consideration of relevant influencing factors - Suitability of survey methods relative to aim - Synopsis of suitability of technical aids and instruments - Survey locations and specific survey spots - Suitable times for surveys (season, time of week and day) and reasonable duration of survey, particularly for practical extrapolation - Organisation of surveys (preparation, execution, documentation) - Estimation of costs of survey and evaluation
Kind of publication Status of report	Research project commissioned by the Swiss Association of Transportation Engineers on behalf of the Swiss Federal Roads Office
Year of publication	2005
Availability	Printed report can be ordered from: Swiss Association of Road and Transportation Experts (VSS), Seefeldstrasse 9, CH – 8008 Zürich, *www.vss.ch* Report also downloadable from: *www.langsamverkehr.ch* Summary (in German) downloadable from: *www.fussverkehr.ch*
Comment / further information	In German with summaries in German, English, French (1.5 pages each) The detailed recommendations how to carry out a survey are also available in German, French and Italian

Title	***Enchantment engineering and pedestrian empowerment: the Geneva case***
Author(s) and their affiliation(s)	WINKIN Yves, ENS-LSH, Lyon LAVADINHO Sonia, EPFL, Lausanne
Abstract	How may practices of "walking outdoors for leisure" be transferred into practices of "daily urban walking"? The authors develop the notion of enchantment to characterise urban atmospheres in which such a conversion may occur, and we explore the possibilities of applying the notion of enchantment engineering to the realm of ordinary urban and landscape planning. Enchantment is a two-sided movement where those who enchant and those who are to become enchanted play each an important role. To discuss the process from the point of view of the pedestrians, the authors suggest the expression of pedestrian empowerment, in order to capture how urban walkers are nowadays aware of the growing role they play in the city, to the point they consider themselves in some cases as an emergent specific group, with precise needs and claims. The notion of personal pedestrian empowerment enables the authors to describe the way walkers actively engage both in the act of walking and the construction of their own identity as walkers.
Kind of publication Status of report	Working paper drafted for the “walking seminar”, Dpt of Anthropology, University of Aberdeen, September 12-15, 2005.
Year of publication	2005
Availability	downloadable from: *www.unige.ch/ses/geo/oum*
Comment / further information	In English

Title	***Evaluating walking promotion policies with regard to mobility representations, appropriations and practices in public space***
Author(s) and their affiliation(s)	LAVADINHO Sonia, EPFL, Lausanne
Abstract	How do public policies that support human-powered mobility translate into real-life practices?

	Which built environment factors encourage users to adopt existing pedestrian routes and integrate them in their daily displacements? This article reveals how pedestrian practices are embedded in other daily activities. It gives elements for a targeted policy of promotion of pedestrian routes in adequacy with different user profiles. It describes which urban planning elements are most conducive of walking behaviour. This article is based on a research commissioned by the city of Geneva consisting of an onsite evaluation of the objective characteristics of three of the nine walking routes currently proposed by the Geneva Pedestrian Masterplan, followed by an onsite quantitative survey that described users' walking behavior and their judgements on the adequacy of these routes to their daily practices.
Kind of publication Status of report	Article in Brebbia C.A., Wadhwa L.C. (ed), Urban Transport and the Environment in the XXIst century, vol. 77 of the WIT Transactions on the Built Environment, WITpress, Southampton, 909 p.
Year of publication	2005
Availability	downloadable from: *www.unige.ch/ses/geo/oum*
Comment / further information	In French

Title	***The empty path. On the importance of the route to school. An analysis of children drawings*** Der leere Weg. Die Bedeutung des Schulweges. Eine Analyse anhand von Kinderzeichnungen
Author(s) and their affiliation(s)	HÜTTENMOSER Marco (Dokumentationsstelle ‚Kind und Umwelt' Muri AG) in Zusammenarbeit mit Gruppo Convenienza Traffico in Capriasca (GCTC)
Abstract	The author analyses 240 drawings of kindergarten and school children and links it with the way the children get to school: on foot or driven by car or school bus. The results show the richness and detail of nature and people painted by children who walk to school and the sombre and empty drawings of children being driven to school.
Kind of publication Commissioned by:	Own initiative of parents in collaboration with Marco Hüttenmoser, supported by the foundation for damage prevention by the Winterthur Insurances (today: Axa Winterthur) and the Canton Ticino
Year of publication	2004
Availability	Downloadable from website: *www.kindundumwelt.ch* > Kind und Verkehr
Comment / further information	

Title	***Efficiency of public investments into slow transport modes*** Effizienz von öffentlichen Investitionen in den Langsamverkehr
Author(s) and their affiliation(s)	FRICK Roman, WÜETHRICH Philipp, KELLER Mario INFRAS (private and independent consulting group providing policy analysis and implementation services to private and public organisations)
Abstract	This study examines the thesis that investment in Non-Motorised Transport (NMT) (walking/cycling) is more economically efficient than other forms of transport investment. Seven examples of NMT, taken mostly from urban agglomerations, and two reference examples each from Motorised Individual Transport (MIT) and Public Transport (PT) have been analysed in terms of their gross cost-benefit. In addition, qualitative judgements have been made with regard to other economically relevant benefit factors.
Kind of publication Commissioned by:	Report Swiss Federal Roads Office FEDRO
Year of publication	2003
Availability	*http://www.astra.admin.ch/themen/langsamverkehr/index.html?lang=fr* see "Documentation"
Comment / further information	In German (70 pages), summaries in French and in English (3 pages) The study has been accompanied by a support group composed by federal administration representatives and specialized professionals

Title	***Walk to shopping, a campaign to promote shopping on foot. A pilot project to test the feasibility of campaigns. Final report*** Zu Fuss einkaufen, Eine Kampagne zugunsten des Einkaufens zu Fuss als Pilotprojekt zur Abklärung der Möglichkeit der Kampagnenarbeit, Schlussbericht
Author(s) and their affiliation(s)	THOMAS Christian, SCHWEIZER Thomas Fussverkehr Schweiz *(Pedestrian Mobility, Swiss Pedestrian Association)*
Abstract	This pilot project aimed to promote walking as a normal way to move for everyday activities. It was financially supported by SwissEnergy and the Action Plan Environment and Health. 17 Volg shops were involved in different villages or little towns in the canton Saint-Gall, as well as the authorities of concerned communes. The campaign comprised leeflets, a questionnaire (practices and opinions), a competition (with prices offered by Volg), and different contributions from the media (local newspapers, television).
Kind of publication Commissioned by:	Report Initiative of Fussverkehr Schweiz
Year of publication	2003
Availability	Report can be downloaded on the website of Pedestrian Mobility: *www.fussverkehr.ch* ("Publikationen")
Comment / further information	In German (28 pages).

Title	***Measures to promote the acceptance of longer trips on foot and by bicycle*** Massnahmen zur Erhöhung der Akzeptanz längerer Fuss- und Velostrecken
Author(s) and their affiliation(s)	HAEBERLI Verena (Zurich), BLUMENSTEIN Andreas and WAELTI Martin (BfM) Arbeitsgemeinschaft Büro für Mobilität AG (BfM), Bern/Burgdorf
Abstract	The research is conceived as an aid for the promotion of longer trips on foot and by bicycle in practice. Basis of the research is besides to existing documents an empirical travel survey (interviews with 625 pedestrians and 500 cyclists in the rural small town of Burgdorf/BE and Kirchberg in the neighbourhood). The interviews are about the actual distances covered for shopping, sports and work. From these the acceptance to make longer trips on foot or by bicycle are tested. The interviewed also make statements on the environmental quality of their trip. From the research result various tables with detailed requirements for pedestrians and cyclists as weel as pedestrian and cycling friendly spatial characteristics that can be used in practice.
Kind of publication Commissioned by:	Report Vereinigung Schweizerischer Verkehrsingenieure (SVI) *(Swiss Transport Engineers Association)*
Year of publication	2002
Availability	Forschungsauftrag SVI 1998/088 (42/98) Vereinigung Schweizerischer Strassenfacheleute/Union des professionnels de la route (VSS), Seefeldstrasse 9, 8008 Zurich
Comment / further information	In German (66 pages and appendix), summaries in English, in French and in Italian (2 pages).

Title	***Naturally mobile. Final report 1996-2001 of the Swiss model city for walking and cycling, Burgdorf*** Natürlich unterwegs. Schlussbericht 1996-2001 der Fussgänger- und Velomodellstadt Burgdorf
Author(s) and their affiliation(s)	SCHIESSER Hans Kaspar, BLUMENSTEIN Andreas
Abstract	This report summarizes the first five years of the model city for walking and cycling which was created in 1996 in the city of Burgdorf to experiment with new ways of promoting walking and cycling. Detailed descriptions show the many efforts made and their results – successful as well as failed measures
Kind of publication Commissioned by:	Report Energy 2000 and the City of Burgdorf
Year of publication	2002
Availability	Downloadable on the website of the city of Burgdorf (*www.burgdorf.ch* > Umwelt > FUVEMO).

Comment / further information	See also the following publications in the year 2007: ”Burgdorf: Model city for walking and cycling. Final report 1996-2006” and ”General evaluation of the model city for walking and cycling, Burgdorf”

Title	***Mission Statement on Human-Powered Mobility – Draft*** Leitbild Langsamverkehr (Entwurf)
Author(s) and their affiliation(s)	Federal Department of the Environment, Transport, Energy and Communications (UVEK) Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation
Abstract	This departmental masterplan (strategy) shows, how the department plans to promote slow traffic. The basis of this blueprint are seven expert reports on slow traffic (walking cycling, inline skating etc). The report shows a vision, the main strategy guiding principles and measures concerning: - Spatial planning and planning - Infrastructure - Cities and conurbations - Guiding and information systems - Safety - Combined mobility - Formation and public relations - Research and development, pilot and demonstration installations - Statistics and evaluation - Mobil info system Switzerland - Collaborations and responsibilities - Financing - Initial investment programme (to start implementation)
Kind of publication Status of report	Masterplan (draft) Written by the Swiss Federal Roads Office FEDRO
Availability	Downloadable from FEDRO website (walking & cycling): www.langsamverkehr.ch
Year of publication	2002
Comment / further information	In German and French (no summaries) See also the input report for walking: “Elements of a strategy to promote pedestrian traffic”

Title	***Elements of a strategy to promote pedestrian traffic. Expert report for the departmental masterplan (for) slow transport*** Elemente einer Strategie zur Förderung des Fussverkehrs Expertenbericht für das Leitbild Langsamverkehr des Bundes
Author(s) and their affiliation(s)	SAUTER Daniel, BERNET Regine, SCHWEIZER Thomas, Fussverkehr Schweiz
Abstract	This expert report forms a basis for a departmental masterplan to promote slow transport, namely walking and cycling developed by the Swiss Federal Roads Office FEDRO. In the report, it is advised that the federal government set the following targets for the next years: - to improve the networks of footpaths and the walking infrastructure in coordination with the cantons and municipalities - to increase by 20% the share of walking trips in proportion to all trips and - to improve the safety of pedestrians, i.e. lowering the number of deaths and severely injured pedestrians by 50%. A list of ten measures describes how these objectives can be reached.
Kind of publication Status of report	Expert report commissioned by the Swiss Federal Roads Office FEDRO
Availability	www.fussverkehr.ch and www.seark.ch
Year of publication	2001
Comment / further information	In German with German, English and French summaries (2 pages each) See also the blueprint itself: “blueprint for slow traffic”

Title	***Socio-economic effects of an expansion of pedestrian precinct in the city-centre of Geneva, Final Report*** Répercussions socio-économiques d’une extension du secteur à priorité piétonne dans le centre-ville de Genève, rapport final
Author(s) and their affiliation(s)	BOILLAT Patrick, WIDMER Gérard Observatoire universitaire de la mobilité, Université de Genève *(Mobility Observatory, De-*

	partment of Geography, University of Geneva)
Abstract	The study is divided into three parts: 1) Results of other studies concerning points like: influence of pedestrian precincts on number of people coming in city-center, number and types of shops in pedestrian precincts (part of luxury shops), accessibility, effects regarding different types of streets. 2) Results of surveys (people living in city-center, in other districts or in the canton), on shopping practices, modal split and opinions. 3) Final evaluation (probably no negative effects).
Kind of publication Commissioned by:	Report City of Geneva
Year of publication	2001
Availability	Observatoire universitaire de la mobilité Université de Genève *www.geo.unige.ch/oum* (download file: see “Recherches effectuées”)
Comment / further information	In French only.

Title	***Pedestrian areas as a trend? Strategies to introduce large pedestrian areas in Switzerland and Germany in comparison of the inner cities of Zurich, Berne, Aachen and Nurnberg*** Fussgängerbereiche im Trend? Strategien zur Einführung grossflächiger Fussgängerbereiche in der Schweiz und in Deutschland im Vergleich in den Innenstädten von Zürich, Bern, Aachen und Nürnberg
Author(s) and their affiliation(s)	SEEWER Ulrich, University of Berne
Abstract	The research (PhD-Thesis) analyses the process to create pedestrian areas in two Swiss and two German cities (Zurich, Bern, Aachen and Nurnberg). Of particular interest are the political discussions, the institutional framework, the inclusion (or not) of relevant stakeholders and the specific outcome of the pedestrian areas in each city. This is one of the few research projects dealing with the institutional analysis of implementing walking schemes.
Kind of publication Commissioned by:	Report PhD-Thesis by Ueli Seewer at the Institute for Geography at the University of Berne.
Year of publication	2000
Availability	Institute for Geography at the University of Berne, Geographica Bernensia
Comment / further information	

Title	***Evaluation of a new form of shared road spaces for pedestrians and vehicles in town centres, expert report*** Evaluation einer neuen Form für gemeinsame Verkehrsbereiche von Fuss- und Fahrverkehr im Innerortsbereich, Expertenbericht
Author(s) and their affiliation(s)	GROB Daniel, Grobplanung, Herzogenbuchsee VON DER MÜHLL Dominique, EPFL, Lausanne
Abstract	The report summarises the research undertaken to evaluate the new shared road spaces in a German speaking and a French speaking town in Switzerland (Burgdorf and St. Blaise). In both places so-called encounter zones in their town centres were introduced as a pilot scheme. The evaluation was based on a number of criteria, e.g. speeds driven, crossing behaviour of pedestrians, interactions etc.
Kind of publication Commissioned by:	Report commissioned by the Federal Roads Office, Department ‘traffic behaviour’ Berne.
Year of publication	2000
Availability	
Comment / further information	About 200 pages

Title	***The future belongs to pedestrian and cycle traffic. State of the art – measures – potentials – steps to a new orientation in traffic policy*** Die Zukunft gehört dem Fussgänger- und Veloverkehr. Stand des Wissens – Massnahmen – Potentiale – Schritte zu einer verkehrspolitischen Neuausrichtung
Author(s) and their affiliation(s)	NETZWERK LANGSAMVERKEHR (ed.): Martin Boesch, Susanne Schmid-Keller, Lydia Bonanomi, Philippe Favarger, Eric Brandt, Marco Hüttenmoser, Daniel Leupi, Daniel Sauter, Martin Utiger, Gisela Vollmer
Abstract	Various researchers from universities and private organisations contributed their expertise to this state-of-the-art-report in answering the questions presented about „slow“ moving traffic. The research report examines the importance of pedestrian and cycle traffic by means of existing statistics, and demonstrates gaps in statistical studies. The report continues with firm proposals for action for traffic planning in favour of cycle traffic. Then the situations of children, elderly people and women are examined. Two studies calculate possible savings by effectively restricting dispersed settlements through regional planning The report then estimates the energy savings and environmental benefits provided by increased pedestrian and cycle traffic. Finally, the report discusses the economic benefits as arguments in favour of the promotion of pedestrian and cycle traffic.
Kind of publication Status of report	Research project, commissioned by the Swiss National Science Foundation in its program "transport and environment" (NRP 41)
Year of publication	1999
Availability	Eidg. Drucksachen- und Materialzentrale (EDMZ), 3003 Bern e-mail: verkauf.zivil@bbl.admin.ch ; http://www.bundespublikationen.admin.ch/
Comment / further information	In German with summaries in German, English, French (11 pages each) See also as excerpt from this publication: “Institutional obstacles to pedestrian and cycle traffic”

Title	***Institutional obstacles to pedestrian and cycle traffic. Measures for a new traffic policy*** Institutionelle Hindernisse im Fuss- und Veloverkehr. Massnahmen für eine neue Verkehrspolitik
Author(s) and their affiliation(s)	SAUTER Daniel, Fussverkehr Schweiz, Zürich
Abstract	This report treats institutional obstacles that obstruct a more pedestrian- and cycle-friendly traffic policy, as for instance: - Terminology and definitions of traffic remain orientated towards motorised traffic. - Long-distance traffic is overvalued, and pedestrian and cycle traffic is undervalued. - Transport policy and investments are focused on long-distance travel. - No mechanics are available to fund pedestrian and cyclist infrastructure and to recover the costs from motorised traffic, which creates the need for essential safety measures. - Pedestrian and cyclist concerns are only minimally institutionalised in government and administrative bodies at all political levels.
Kind of publication Status of report	Research report commissioned by the Swiss National Science Foundation in its program "transport and environment" (NRP 41)
Year of publication	1999
Availability	www.fussverkehr.ch; www.seark.ch
Comment / further information	In German with summaries in German, English, French (1 page each) See the complete related research report: “The future belongs to pedestrian and cycle traffic”

Title	***Typical behaviour and attitudes of elderly people on foot*** Typische Verhaltensweisen und Einstellungen von älteren Fussgängern
Author(s) and their affiliation(s)	BINER Caroline, EWERT Uwe Psychologists at the BFU/BPA *(Office for the prevention of accidents)*
Abstract	As statistics show that elder people on foot are more often victims of accidents, and more often die of accidents, this study investigates the problem of street crossings through observations and inquiries in 11 towns. It points behaviour on crossings (how people do – or not – stop, wait, communicate, move) and opinions of elder people regarding problems on crossings.
Kind of publication Commissioned by:	Pilotsstudie / Pilot Research Office for the Prevention of Accidents

Year of publication	1994
Availability	www.bfu.ch
Comment / further information	In German only (51 p.)

Title	***Walking in the Canton of Zurich*** Zu Fuss im Kanton Zurich
Author(s) and their affiliation(s)	LANZ Peter (Architect, Zurich), HARTMANN Markus (land-use planner, Herisau)
Abstract	The brochure is aimed at officials in communities to show how they can plan and provide good walking infrastructure for their inhabitants. The quality needs of pedestrians are described in words and pictures, and the planning process in the Canton is elaborated. Good examples of pedestrian-friendly environments and are shown.
Kind of publication Commissioned by:	Brochure Canton of Zurich (Office for Spatial Planning), in collaboration with Arbeitsgemeinschaft Recht für Fussgänger (today: Pedestrian Mobility Switzerland)
Year of publication	1994
Availability	Out of print
Comment / further information	

Title	***Pedestrian traffic in the city centre of Berne. Final report*** Fussgängerverkehr Berner Innenstadt, Schlussbericht
Author(s) and their affiliation(s)	AERNI Klaus, HAEFLIGER Edith, KALBERMATTEN RIEDER Ruth, KAUFMANN Urs, SEEWER Ueli Geographisches Institut der Universität Bern / *Geographic Institute of the University of Bern*
Abstract	The report contains the results of different studies on the topic: pedestrian denseness in the city centre, characteristics of people coming in the centre, problems of safety and security, opinions regarding quality of public spaces. It points measures to enhance pedestrian friendliness in the city centre.
Kind of publication Commissioned by:	Report University of Bern (Geographic Institute)
Year of publication	1993
Availability	----
Comment / further information	In German only (69 p.)

Title	***Indicators describing pedestrian traffic*** Indikatoren im Fussgängerverkehr
Author(s) and their affiliation(s)	GREUTER Beat, HÄBERLI Verena Zürich (Rapp Ingenieure und Planer AG, Zürich)
Abstract	The purpose of the research is to present comprehensively the indicators which determine pedestrian traffic and which serve as recommendations for future surveys. The report describes the actual pedestrian behaviour in all its variety and the causes which lead to this behaviour. A written household survey was conducted in a provincial town as the data base and qualitative analysis was added
Kind of publication Status of report	Research project commissioned by the Swiss Association of Transportation Engineers on behalf of the Swiss Federal Roads Office
Year of publication	1993
Availability	Printed report can be ordered from: Swiss Association of Road and Transportation Experts (VSS), Seefeldstrasse 9, CH – 8008 Zürich, www.vss.ch
Comment / further information	In German with summaries in German, French, Italian and English (9 pages each)

Title	***Technical aspects of walking. Pedestrians in view of their technical transport technical characteristics (bibliography)*** Transporttechnik der Fussgänger, Transporttechnische Eigenschaften des Fussgängerverkehrs (Literaturauswertung)
Author(s) and their affiliation(s)	WEIDMANN Ulrich, Traffic engineer
Abstract	The research did go through about 200 documents to investigate technical aspects of walking and pedestrians (including differences depending on sex, age, stoutness), speed, efficiency, denseness of pedestrians, dimensions needed.
Kind of publication Commissioned by:	Report. Institut für Verkehrsplanung, Transporttechnik und Eisenbahnbau, ETH Zurich *(Institute for Transport Planning and Systems of the Swiss Federal Institute of Technology)*
Year of publication	1993
Availability	IVT Report Nr 90, *www.ivt.ethz.ch*
Comment / further information	In German only (109 p.)

Title	***The slow city, relevance, attractiveness and appropriation of pedestrian amenities. A system analysis*** Die Langsamverkehrs-Stadt, Bedeutung, Attraktion und Akzeptanz der Fussgängeranlagen, Eine Systemanalyse
Author(s) and their affiliation(s)	BOESCH Hans Retired engineer, he was previously head of the section 'Traffic and Transport Engineering' at the Building Department of the canton of Aargau, then scientific deputy in the section 'Traffic Planning and Transport Engineering' at the Institute for Local, Regional and National Planning of the Swiss Federal Institute of Technology of Zurich.
Abstract	Probably the first report in Switzerland dealing with slow mobility (pedestrians and cyclists) in a systematic way. The research aims to develop a global strategy to promote walking and cycling, and is particularly pointed on pedestrians. The author sketches a model of slow city, based on an analysis in four fields (including interactions between them): - physical and aesthetic field: quality and needs concerning infrastructure and networks, safety and security; - psychological and social field: needs of various users depending on motives, obstacles to walking (why do people don't walk); - political and economic field (associations, planners, economic stakeholders, inhabitants); - planning and use (urban structures). The research ends with recommendations on later research themes.
Kind of publication Commissioned by:	Report. The study was financed by the Swiss National Science Foundation in the frame of the National Research Project 25 "Stadt und Verkehr/Ville et transports" *(City and Transport).*
Year of publication	1992 Edited by Arbeitsgemeinschaft Recht für Fussgänger *(now: Pedestrian Mobility, Swiss Pedestrian Association)*
Availability	Out of print.
Comment / further information	In German only (142 p.)

Title	***How men was adapted to traffic Education and disciplining of pedestrians through traffic in Switzerland between 1900 and 1960*** Wie der Mensch dem Verkehr angepasst wurde. . Erziehung und Disziplinierung der FussgängerInnen durch den Verkehr in der Schweiz von 1900 bis 1960
Author(s) and their affiliation(s)	HÄTTENSCHWILER Diego, Historisches Institut der Universität Bern
Abstract	The report treats the question, how pedestrians were forced to change their behaviour pedestrians by the emergence of cars. It shows, how pedestrians were taught to behave in order to fulfil the demands of motorised traffic. It describes methods used, names institutions of traffic education and the consequences for the perception and behaviour of pedestrians.
Kind of publication Status of report	Report (written as part of a university course)
Year of publication	1990

Availability	Restricted (only in some libraries)
Comment / further information	In German

Title	***The Pedestrian as passenger*** Der Fussgänger als Passagier
Author(s) and their affiliation(s)	BOESCH Hans
Abstract	Passengers of public transport are more often pedestrians. Best public transport need good connections with pedestrian networks and attractivity in order to be really efficient. The study gives recommendations regarding connection to bus stops and railway stations (safe, direct, comfortable) through some examples.
Kind of publication Commissioned by:	Report ORL-Bericht Nr 73, Zurich *(Institute for local, regional and national Planning of the Swiss Federal Institute of Technology of Zurich)*
Year of publication	1989
Availability	*www.fussverkehr.ch* (> Publikationen)
Comment / further information	In German only (83 p.)

Title	***The pedestrian as customer, Observations on the complex of demographic changes, distances on foot, customers density, car park offer and public transport*** Der Fussgänger als Kunde, Beobachtungen zum Komplex Bevölkerungsbewegung, Fussgängerdistanzen, Kundendichte, Parkplätze und öffentlicher Verkehr
Author(s) and their affiliation(s)	BOESCH Hans *(See: Die Langsamverkehrstadt, above)*
Abstract	A pilot study that collected various data from several general studies on shopping to investigate the specific topic of pedestrians. The study concentrates on customer behaviour and market share of pedestrians in relation to retail trade. It points arguments in favour of pedestrians regarding livable public space, reduction of motorized transport, support to public transport, and gives recommendations on urban structure (density, articulation with public transport) and accessibility for pedestrians.
Kind of publication Commissioned by:	Report ORL-Bericht Nr 58 *(Institute for local, regional and national Planning of the Swiss Federal Institute of Technology of Zurich)*
Year of publication	1988
Availability	Out of print.
Comment / further information	In German only (81 p.). Content remains interesting, but trade and shopping organisation have changed a lot since 20 years.

B) Detailed descriptions of current research projects

Title of project	***Pedestrian Crossing (Principles) (VSS2008/302)*** Fussgängerstreifen (Grundlagen) (VSS2008/302)
Name(s) of researcher(s) affiliation, contact details	BELOPITOV Ivan (SNZ, Ingenieure und Planer AG, 8050 Zürich) *i.belopitov@snz.ch*
Abstract (or research topics; keywords)	The relevant studies which explain the influence of different factors (e.g. infrastructural and operational) should be search for in a literature analysis and be given to investigation methodology. The appropriate approach and in particular the possible requirements and criteria are to be specified in the analytic part. The legal questions and the possible additional fitting are to be clarified. The feasibility and the range of a main study “empirical study” will be evaluated.
Expected results and products	Provision of the bases for the first revision of the standard SN 640 241 Check and differentiation of today's evaluation and equipment criteria for the order of a pedestrian crossing (principal points): under which circumstances is a criterion imperativ (pedestrian crossing yes or no), influence on other criteria, possibilities of differentiated aspects and compensatory measures Evaluation of the valid regulations, clearing up the contradictions Check of signal and marking measures not written in the standard, deep analysis of the effect of different measures for the reduction of the risk at crossing Fixing of the method and the range of the main part “empirical definition of criteria” of the research study (proceed, resources, feasibility). The field research follow after positive results of the preliminary study.
Research context Status of research	Part of the research-package: „Crossings in point for pedestrian and bicycle traffic”
Name(s) of institution(s) commissioning / financing the research	
Amount of money and staff involved	111'000.00 CHF
Timeframe (start, end of project)	31.10.2008 - 31.07.2009
Language of project Language(s) of summaries available, size of summaries	German
Comment / further information	

Title of project	***Crossings in point for pedestrian and bicycle traffic: Projecting (VSS2008/203)*** Punktuelle Querungen für den Fussgänger- und leichten Zweiradverkehr: Projektierungsgrundlagen (VSS2008/203)
Name(s) of researcher(s) affiliation, contact details	PESTALOZZI Christian (Pestalozzi & Stäheli, Ingenieurbüro Umwelt und Verkehr, Basel) *pestalozzi@ps-ing.ch*
Abstract (or research topics; keywords)	Based on literature research, example collections as well as video and conflict observations in the following ranges of topics are examined: - Basic conditions and application criteria of crossings points related to determining parameters, with the goal of considering the requirements of the different road users equivalently. - Mobility, comfort and safety needs of children, elderly and handicapped people are particularly to be considered. - Project engineering principles for the design and arrangement of crossings in point with consideration of different operating and design concepts of transportation infrastructure. - The decision criteria for the choice of the suitable elements of crossings (without crosswalk and "bicycle ford") are specified, the geometry of the elements as well as the requirements of the operation are defined. - Adjustment with the traffic law and other legal bases. Concerning the elements for crossings to be examined, the emphasis of the research are the side walks and the crossing points without precedence for pedestrians. Today there is still little base present on these topics. The crosswalk and the "bicycle ford" are not a component, since these elements for crossing are examined later in other research studies.
Expected results and products	Refining the criteria for the choice between crossings in point with precedence and without precedence. Arranging an overview of existing elements for crossings for bicycle traffic, for pedestrian

	traffic and combined elements for both means of transport. Analysis and selection of suitable elements for crossings for different groups of users and roads. Definition of the use and geometry of suitable elements for crossings with consideration of the road safety, operation and layout (without crosswalk and "bicycle ford"). For the result the research study delivers all necessary bases for the publication of appropriate standards of the VSS.
Research context Status of research	Part of the research-package: „Crossings in point for pedestrian and bicycle traffic with and without precedence"
Name(s) of institution(s) commissioning / financing the research	Bundesamt für Strassen; Swiss Federal Roads Office FEDRO
Amount of money and staff involved	140'000.00 CHF
Timeframe (start, end of project)	31.10.2008 - 31.03.2011
Language of project Language(s) of summaries available, size of summaries	German
Comment / further information	

Title of project	***Accessibility of traffic area for persons with disabilities (VSS2008/201)*** Behindertengerechter Verkehrsraum (VSS2008/201)
Name(s) of researcher(s) affiliation, contact details	PESTALOZZI Christian (Pestalozzi & Stäheli, Ingenieurbüro Umwelt und Verkehr, Basel) *pestalozzi@ps-ing.ch*
Abstract (or research topics; keywords)	Based on an analysis of the literature and the existing standards of VSS all aspects of building for the disabled will be compared with the contents of the standards of VSS. A standard approach will show for what aspects gaps exist and how they can be closed. Besides the supplementing of different standards from today's perspective a new basic standard "Hazardless building in traffic area" is also to be required. Based on the conclusions resulting of the research within literature and on the experience of the research team, basis for standardization in the field of requirements, layout, design, operation, building and operational equipment, implementation and maintenance will be elaborated. With the help of expert talks gaps shall be closed, contradictions to existing rules shall be clarified and criteria and weightings to evaluate different usage demands to the traffic area shall be formulated. From this, the contents of amendments to existing standards and of new standards to be created will be elaborated.
Expected results and products	Concept, which standards of VSS have to be adapted and with which new standards the standards work of the VSS have to be complemented in order to integrate the requirements for an accessible traffic area in the standards work. · Basis for standardization: – Fundamental principles of building for persons with disabilities, – Requirements for safety, accessibility and attractiveness, – Arrangement, design and geometry of facilities and elements, – Building and operating equipment, – Implementation and maintenance. · Criteria, weighting and approach to the evaluation of conflicting user demands to the traffic area. Draft of the contents of amendments to existing standards and of new standards to be created
Research context Status of research	Base for standardization
Name(s) of institution(s) commissioning / financing the research	Bundesamt für Strassen; Swiss Federal Roads Office FEDRO
Amount of money and staff involved	130'000.00 CHF
Timeframe (start, end of project)	- 30.09.2009
Language of project Language(s) of summaries available, size of summaries	German
Comment / further information	--

Title of project	***Crossings for pedestrian traffic at road junctions (VSS1999/114)*** Führung des Fussgängerverkehrs im Bereich von Knoten (VSS1999/114)
Name(s) of researcher(s) affiliation, contact details	SCHÖNENBERGER-MEIER Katrin (Basler & Hofmann Ingenieure und Planer AG, Zürich) *kmeier@bhz.ch*
Abstract (or research topics; keywords)	Pedestrians willing to cross a road nearby a junction may be observed doing it at the wrong place, mainly because with road design some basic needs of pedestrian movements at junctions have been neglected, such as interrupted crossing of multiple carriageways at signalised intersections or unacceptable waiting time due to unreasonable signal plans. This may create a dangerous situation particularly where protecting islands in the middle of the carriageway are either too small or missing at all. There are many possible situations and design elements of junctions that produce different requirements with regard to the allocation of pedestrian traffic nearby or at the junction-area. Yet there are no Swiss standards handling these aspects extensively, nor is there any coordination with the new standards on the design of junctions. The investigation aims at reviewing the existing level of knowledge and at working out a proposal of standards on how to lead pedestrian traffic at junctions, as scheduled in the structure of the standards of the Swiss Association of Road Professionals (VSS).
Expected results and products	Establishing of the fundamentals regarding the appropriate consideration of the pedestrian traffic in the VSS group of standards on the design of junctions.
Research context Status of research	Base for standardization
Name(s) of institution(s) commissioning / financing the research	Bundesamt für Strassen; Swiss Federal Roads Office FEDRO
Amount of money and staff involved	47'463.00 CHF
Timeframe (start, end of project)	12.05.1999 - 31.12.2003
Language of project Language(s) of summaries available, size of summaries	German
Comment / further information	--

Title of project	***Traffic from the children's point of view (SVI2004/006)*** Der Verkehr aus Sicht der Kinder (SVI2004/006)
Name(s) of researcher(s) affiliation, contact details	KAUFMANN-HAYOZ Ruth (IKAÖ, Universität Bern) *kaufmann@ikaoe.unibe.ch* STEINER Rolf (verkehrsteiner, CH-3008 Bern)
Abstract (or research topics; keywords)	The emphasis is on children's/parents' view of safe routes to school and on solutions for transport by bike/on foot. We will also concentrate on the ongoing development of children being escorted by car to school and to their leisure activities. On the one hand we will summarize the international standard of knowledge about road safety (literature inquiries, analysis of travel behavior in Switzerland) and on the other hand new and innovative approaches (analysis of video-sequences) will be applied. The various means of transportation of children/parents as well as the estimation of safety of the school routes will be investigated by a representative telephone survey. Furthermore, case studies of three schools will provide portraits of routes to school. In order to check the importance of the results and their usefulness for practice a workshop with experts will be organized. The results will be presented by a report including practicable measures/actions and by video-sequences.
Expected results and products	The project will contribute to a better understanding of children's needs in traffic planning. The focus of the project is on safety for children at the age of 6-14. The objectives are: · Overview of existing literature on "safe routes to school" · Analysis of existing surveys of traffic and children (microcensus) · Representative survey of travel behavior for routes to school · Processing of existing video-sequences of children and their routes to school Tree case studies of roads to school situations at different schools.
Research context Status of research	
Name(s) of institution(s) commissioning / financing the research	Bundesamt für Strassen; Swiss Federal Roads Office FEDRO
Amount of money and staff involved	180'000.00 CHF

Timeframe (start, end of project)	04.06.2008 – 31.12.2009
Language of project Language(s) of summaries available, size of summaries	German
Comment / further information	--

Title of project	***Alternatives to pedestrian crossings in limited speed zones 30 km/h (SVI2004/073)*** Alternativen zu Fussgängerstreifen in Tempo 30-Zonen (SVI2004/073)
Name(s) of researcher(s) affiliation, contact details	GHIELMETTI Marco (Ingenieur- und Planungsbüro Ghielmetti, 8400 Winterthur) *ghielmetti@quickmail.ch*; PESTAALOZZI & STÄHELI (Ingenieurbüro Umwelt und Verkehr, Basel), STEINER Rolf (verkehrsteiner, CH-3008 Bern)
	In limited speed zones 30 km/h generally no pedestrian crossings may be marked. Nevertheless a large need after safe and comfortable traversing possibilities exists. Alternative and innovative solutions for this problem are searched by a creative process and the inclusion of as much as possible persons interested in this subject. The suggestions are analyzed and evaluated. For maximally three suggestions a program for subisidiary inquiries is compiled. If success promising alternatives are found, a prosecution of the research work with field tests is planned.
Expected results and products	Analysis of the problem and the existing measures at home and abroad Compilation of alternative solutions within the ranges traffic right, signalling/marking, structural measures, design and public relations Preparation of a program for a subsidiary inquiry of maximally three alternative solutions
Research context Status of research	--
Name(s) of institution(s) commissioning / financing the research	Bundesamt für Strassen; Swiss Federal Roads Office FEDRO
Amount of money and staff involved	70'000.00 CHF
Timeframe (start, end of project)	28.05.2008 - 01.11.2008 *(delayed; current status unknown)*
Language of project Language(s) of summaries available, size of summaries	German
Comment / further information	--

Title of project	***Zones of encounter: Recommendations for planning and realization (SVI2006/002)*** Begegnungszonen: Empfehlungen für die Planung und Umsetzung (SVI2006/002)
Name(s) of researcher(s) affiliation, contact details	STEINER Rolf (verkehrsteiner, CH-3008 Bern; *rs@verkehrsteiner.ch*)
Abstract (or research topics; keywords)	The research contains a thorough analysis of about 10 to 12 existent Zones of encounter and develops recommendations for the evaluation, planning and realization. In addition to concrete indications on the effectiveness of Zones of encounter in the different environments (quarter, center etc.) and advices on optimal planning procedures, participative processes and risks of the project, Best Practices for an effective realisation will be prepared. The surveys, interviews and local inspections with photo- and video documentation give additional information for the completion of the existent surveys on *www.begegnungszonen.ch* and will be made available for these stakeholders. The analyzed samples will be illustrated in the same way/type as up till now (quarter, businessquarter resp. central places of service, squares and rights of way, etc.). The most important reasons, the critical factors for success and the results will be illustrated for each type.
Expected results and products	The aim of the research is to analyze several Zones of encounter which were implemented in 2002 and to deduce recommendations for the evaluation, planning and implementation of Zones of encounter in general. The results will be documented in a demonstrative and vivid report and illustrated with many pictures. The material of the documentation completes the existent documentation on Zones of encounter. The report is a practical guide for the evaluation, planning and realisation of Zones of encounter. Thanks to the well illustrated examples, the simple conversion into practice is secured. This allows to implement better Zones of encounter with less demand of amelioration.

Research context Status of research	--
Name(s) of institution(s) commissioning / financing the research	Bundesamt für Strassen; Swiss Federal Roads Office FEDRO
Amount of money and staff involved	50'000.00 CHF
Timeframe (start, end of project)	16.05.2007 - 31.12.2007 *(delayed; current status unknown)*
Language of project Language(s) of summaries available, size of summaries	German
Comment / further information	*www.begegnungszonen.ch*

Title of project	***Slow moving traffic, Part 2: Slow moving traffic from the middle of the 19th century*** Der Langsamverkehr, Teil 2: Langsamverkehr seit der Mitte des 19. Jahrhunderts
Name(s) of researcher(s) affiliation, contact details	SCHIEDT Hans-Ulrich (Via Storia - Zentrum für Verkehrsgeschichte Universität Bern), Bundesamt für Strassen und Via Storia (Hrsg.)
Abstract (or research topics; keywords)	One of two pilot studies outlining a research project treating the history of slow moving traffic. Both studies aim to identify deficiencies in our understanding of slow moving traffic and thus serve as a basis for conducting a detailed research project. The first study, which discusses developments until the end of the 19th century, was completed in 2009. The present study focuses on the 20th century and the introduction of human-powered forms of transportation in motorized traffic settings.
Expected results and products	Study report
Research context Status of research	Foundation to apply for a research assignment at the Swiss National Science Foundation
Name(s) of institution(s) commissioning / financing the research	Pilot Study of Via Storia (association), University of Berne
Amount of money and staff involved	
Timeframe (start, end of project)	2009 – (*ongoing)*
Language of project Language(s) of summaries available, size of summaries	In German
Comment / further information	--

Title of project	***The future of walking: perceptions, infrastructure design and policy-making*** Swiss contribution to COST Action 358 “Pedestrian Quality Needs”
Name(s) of researcher(s) affiliation, contact details	SAUTER Daniel, VON DER MÜHLL Dominique, LAVADINHO Sonia
Abstract (or research topics; keywords)	The Swiss contribution to COST Action 358 aims to address basic knowledge gaps and provide answers to critical problems in the field of walking-related transport in Switzerland and on a European-wide level. The analysis will focus on walking conditions in sub- and periurban areas of cities, on institutional barriers and on perceptions and images of walking. It will provide a first-time comprehensive assessment of the future of walking in Switzerland with a special emphasis on the dissemination of results.
Expected results and products	Publication of the Swiss country report and for each research module a special summary report
Research context	COST Action 358
Name(s) of institution(s) commissioning / financing the research	State Secretariat for Education and Research SER; Swiss Federal Roads Office FEDRO

Amount of money and staff involved	171'500 CHF
Timeframe (start, end of project)	1 April 2007 until 31 December 2010
Comment / further information	

Title of project	***Basics of pedestrian traffic (planning)*** Grundlagen für den Fussverkehr
Name(s) of researcher(s) affiliation, contact details	GROB Daniel; Grob Planung; Güterstrasse 12; 3360 Herzogenbuchsee *info@grobplanung.ch*
Abstract (or research topics; keywords)	- list of current basic elements - references in addition to the Swiss-norms in the field of pedestrian traffic - proposal for a norm 'basics of pedestrian traffic' - final report with presentation of network design, dimensions, arrangements and operation
Expected results and products	Elaboration of the basics of improving pedestrian traffic planning and the overall traffic system. Proposal for a norm 'basics of pedestrian traffic'.
Research context Status of research	---
Name(s) of institution(s) commissioning / financing the research	Bundesamt für Strassen; Swiss Federal Roads Office FEDRO
Amount of money and staff involved	87'180 CHF
Timeframe (start, end of project)	01.01.2003 – 31.12.2004 *(delayed; current status unknown)*
Language of project Language(s) of summaries available, size of summaries	German Summaries not yet available
Comment / further information	

Title of project	***The pedestrian in the "in-between town" – improving pedestrian accessibility to facilities generating large traffic volumes*** Le piéton dans l'entre-deux des villes: des IGT plus accessibles aux piétons
Name(s) of researcher(s) affiliation, contact details	Ruzicka-Rossier Monique, von der Mühll Dominique (Chôros-EPFL)
Abstract (or research topics; keywords)	The research aims to evaluate and to highlight the ways to improve pedestrian accessibility to facilities that generate large traffic volumes (HTF), such as shopping centers, leisure facilities, hospitals and multimodal interfaces, situated in peripheries of towns. Pedestrian accessibility is considered as proper mode (proximity scale) and in combination with public transport. The research is based both on a mobility approach and an urban space approach, in order to answer the question: how to inject proximity and urbanity in peripheries. It includes a literature review, interviews and case-studies, and aims to raise the awareness of the concerned stakeholders and stimulate them to act. Agglomeration programs (see chapter on policies) are particularly concerned, as most of existing HTF are situated in agglomeration perimeters.
Expected results and products	Awareness on the thematic. Highlighting possible actions, qualitative potential at different scales, typology of contexts, concerned stakeholders and relevant instruments for acting.
Research context Status of research	Domain of research at the laboratory Chôros-EPFL on the in-between town.
Name(s) of institution(s) commissioning / financing the research	Swiss Federal Roads Office and Swiss Federal Office for the Spatial Development
Amount of money and staff involved	50'000 CHF
Timeframe (start, end of project)	2008 – 2009/2010 (extended)

Language of project Language(s) of summaries available, size of summaries	French Summaries available soon. The final report will be downloadable on the websites of both Federal Offices (French, German and Italian).
Comment / further information	

Title of project	***Education and training on slow mobility in Switzerland: analysis and recommendations*** Bildungslandschaft Langsamverkehr Schweiz
Name(s) of researcher(s) affiliation, contact details	Haering Barbara, Lother Mirco (econcept, Zürich)
Abstract (or research topics; keywords)	The research aims to identify education and training dealing with slow mobility issues at Swiss universities including the universities of applied sciences. It is based on information available on websites and an expert workshop, and delivers recommendations.
Expected results and products	State-of-the-art in Switzerland and recommendations.
Research context Status of research	Research commissioned by the Swiss Federal Roads Office (domain Slow Mobility), in order to improve education and training on slow mobility issues for practitioners.
Name(s) of institution(s) commissioning / financing the research	Swiss Federal Roads Office (domain Slow Mobility).
Amount of money and staff involved	(unknown)
Timeframe (start, end of project)	2009-2010
Language of project Language(s) of summaries available, size of summaries	German (draft)
Comment / further information	

Title of project	***Guidebook to pedestrian network planning*** Netzplanung für den Fussverkehr - Handbuch
Name(s) of researcher(s) affiliation, contact details	Regli Pascal, Schweizer Thomas (Fussverkehr Schweiz, Zürich)
Abstract (or research topics; keywords)	The guidebook includes basic information and data on walking and pedestrians, reminder on qualitative needs (attractiveness, safety and security, connectivity, legibility), definition of elements of networks, and recommendations for network planning, implementation and maintenance.
Expected results and products	Recommendations for planning to be used by practitioners and communities.
Research context Status of research	The guide will fill a gap in improving know-how in the field.
Name(s) of institution(s) commissioning / financing the research	Swiss Federal Roads Office (domain Slow Mobility).
Amount of money and staff involved	(unknown)
Timeframe (start, end of project)	2008 -2010
Language of project Language(s) of summaries available, size of summaries	German (draft). The document will be published also in French and in Italian.
Comment / further information	Part of “Slow Mobility Guidelines” published by the Swiss Federal Roads Office, domain Slow Mobility.